



Prepared for

Georgia Power Company
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Atlanta, Georgia 30308

**2019 ANNUAL GROUNDWATER
MONITORING & CORRECTIVE
ACTION REPORT**

**GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 4 (AP-4)**

Prepared by

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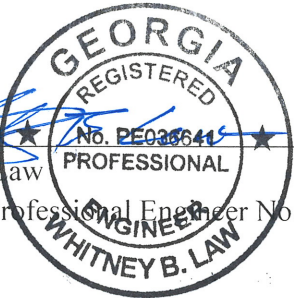
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CERTIFICATION STATEMENT

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


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LIST OF ACRONYMS

AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
DO	dissolved oxygen
ft AMSL	feet above mean sea level
ft/day	feet per day
ft/ft	feet per foot
GA EPD	Georgia Environmental Protection Division
GCL	geosynthetic clay liner
GPC	Georgia Power Company
HAR	Hydrogeologic Assessment Report
K_h	horizontal hydraulic conductivity
mg/L	milligram per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric turbidity units
Pace Analytical	Pace Analytical Services, LLC.
PL	prediction limit
QA/QC	Quality Assurance/Quality Control
SCS	Southern Company Services
SSI	statistically significant increase
s.u.	standard unit
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D] and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants has prepared this *2019 Annual Groundwater Monitoring & Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company (GPC) Plant Hammond (Site) Ash Pond 4 (AP-4).

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

AP-4 was closed in 2012; therefore, AP-4 is not subject to the Federal monitoring requirements. A permit application for AP-4 was submitted to GA EPD in November 2018 and is currently under review. Groundwater monitoring has been initiated in order to meeting the GA EPD CCR requirements. This report documents groundwater monitoring activities completed in support of establishing the detection monitoring program for AP-4 and includes the required report components in accordance with 40 CFR 257.90(e).

1.1 Site Description and Background

Plant Hammond is located in Floyd County, Georgia, approximately 10 miles west of Rome and is bordered by Georgia Highway 20 (GA-20) on the north, the Coosa River on the south, Cabin Creek and industrial land on the east, and sparsely populated, forested, rural and industrial land on the west (**Figure 1**). The physical address of the plant is 5963 Alabama Highway, Rome, Georgia, 30165.

AP-4 was commissioned in 1986 as a surface impoundment with a corresponding surface area of approximately 54 acres. Dry ash stacking operations in AP-4 began in 1994 and continued until 2010; AP-4 received both fly ash and bottom ash during this period. AP-4 was capped in place in 2011-2012 in accordance with the GA EPD regulations regarding landfill closures. AP-4 was graded, engineered with drainage, and capped with a geosynthetic clay liner (GCL) and soil cover.

1.2 Regional Geology & Hydrogeologic Setting

The following section summarizes the geologic and hydrogeologic conditions at the Site as described in the AP-4 Hydrogeologic Assessment Report (HAR) submitted to GA EPD as supporting documents for the closure permit application.

1.2.1 Regional and Site Geology

The Site is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. Geologic mapping performed at the Site by Petrologic Solutions, Inc. under the direction of Golder (Golder, 2018) indicates that AP-4 is underlain by the lower units of the Cambrian age Conasauga Formation, consisting of mostly calcareous shale. Based on review of subsurface investigations, the bedrock underneath AP-4 was described as predominantly shale. AP-4 is underlain primarily by five lithologic units: (i) terrace alluvium, (ii) colluvium, (iii) residuum, (iv) partially weathered shale bedrock, and (v) unweathered shale bedrock.

Based on subsurface investigations, the alluvial deposits generally grade from a silt and silty clay to a clayey sand and silty sand to a sand and gravelly sand at depth. The colluvium consists of silty sand, silty clay with the presence of angular fragments of rocks/materials not expected in the lower units of the Conasauga, such as chert, sandstone, limestone, or coal. Residual or native soils have been derived from the in-place weathering of the shale bedrock. The residuum is generally described as brown to yellow brown firm clayey silt with weathered shale fragments. The partially weathered shale zone occurs as an intermediate weathering stage between the residuum and the unweathered shale bedrock. The weathered material is described as black to dark gray to dark red hard, fissile shale and claystone. The unweathered shale bedrock was not encountered or directly observed in the historical borings advanced at AP-4. However, based on geologic conditions in the region, weathering, fracturing and jointing decreases with depth and the weathered rock material grades into competent bedrock.

1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-4 is a regional groundwater aquifer that occurs primarily in the alluvium, colluvium, and residuum, but also to some degree within the weathered and fractured bedrock. Based on observations of alluvium, colluvium, and residuum soil types and horizontal conductivity values, the movement of groundwater in the soil can be characterized as low-to moderate permeability, porous media flow. The groundwater

flow in the shallow underlying bedrock is characterized as fracture flow, and due to the preponderance of shale beneath AP-4, is expected to be very low permeability. Groundwater flow direction is generally from north to south.

1.3 Groundwater Monitoring Well Network

In accordance with 40 CFR 257.91, a groundwater monitoring system was installed at AP-4 that (1) consists of a sufficient number of wells, (2) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the units (i.e., background conditions) and passing the waste boundary of the units. The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions.

The compliance monitoring well network for AP-4 consists of ten monitoring wells. A network of piezometers has been installed at the Site that are used to gauge water levels to define groundwater flow direction and gradients. The locations of the compliance monitoring well network and groundwater level monitoring piezometers associated with AP-4 are shown on **Figure 2**; well construction details are listed in **Table 1**.

2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR 257.90(e), the following describes groundwater monitoring-related activities performed for AP-4 since August 2016 in support of establishing the detection monitoring program for the CCR unit in accordance with 40 CFR 257.94. All groundwater sampling was performed in accordance with 40 CFR 257.93.

2.1 Monitoring Well Installation and Maintenance

Ten groundwater monitoring wells (HGWA-111, HGWA-112, HGWA-113, HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118) and 9 groundwater level monitoring piezometers (GWC-2, GWC-4, GWC-6, GWC-8, GWC-14, GWC-15, GWC-16, GWC-19, MW-12) were installed at AP-4 between August and October 2014. Details regarding the installation of these wells and piezometers are presented in the *Well Design, Installation, and Development Report – Plant Hammond Ash Pond 4 (AP-4)* (Geosyntec, 2019). Well construction details for the current certified well network and supporting piezometers are presented in **Table 1**.

The well and piezometer networks are inspected during each groundwater monitoring event using GA EPD-based inspection criteria. Any issues identified with the wells (e.g., clogged weep holes within the outer protective casing, faded well identification signage, rusted locks and/or latches, etc.) are addressed before the following groundwater sampling event.

Select AP-4 wells and piezometers located south and west of AP-4 along the Coosa River were redeveloped after the river crested the banks in late February 2019. These wells were redeveloped as a precautionary measure and prior to the April 2019 sampling event. The field parameters recorded at each well during the well redevelopment activities were consistent with historical measurements recorded during normal conditions. This indicates the groundwater within these monitoring wells was not impacted by the river.

2.2 Detection Monitoring Program

Pursuant to 40 CFR 257.94, GPC established a detection monitoring program for AP-4 which consisted of (i) collecting eight independent samples from the certified monitoring well network to establish a baseline dataset and (ii) conducting the initial semiannual detection monitoring sampling event. The detection monitoring event data are statistically compared against the background values in accordance with 40 CFR 257.93(h).

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 between August 2016 and October 2018 pursuant to 40 CFR 257.94(b). Pursuant to 40 CFR 257.90(e)(3), data reports for the background sampling events are included in **Appendix A**, Laboratory Analytical and Field Sampling Reports. The dates of the background sampling events are summarized in **Table 2**.

2.2.2 Initial Detection Monitoring

Following background monitoring (and prior to April 17, 2019), the initial detection monitoring event was completed by collecting an additional round of groundwater samples. Groundwater samples were collected from each monitoring well and analyzed for Appendix III constituents according to 40 CFR 257.94(a). Data reports for the initial detection monitoring event are included in **Appendix A**.

3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were used to collect groundwater samples at AP-4. Environmental Resources Management (ERM) of Atlanta, GA, completed the first six background sampling events (August 2016 to November 2017) and Geosyntec collected the remaining two background events and first detection monitoring event.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth-to-groundwater level measurements were recorded from the AP-4 wells and piezometers and used to calculate the groundwater elevations. The calculated groundwater elevations for the nine events are presented in **Table 3**. The groundwater elevations for the April 2019 event ranged from 590.83 feet above mean sea level (ft AMSL) in well HGWA-113 to 565.84 ft AMSL in well HGWC-105. The elevations reported for the April 2019 event are representative of the eight prior monitoring events.

The groundwater elevation data are used to generate a potentiometric surface contour map that depicts the groundwater elevation and inferred flow direction. The potentiometric surface map representing April 2019 data is provided on **Figure 3**. Groundwater in the AP-4 area flows under the influence of topography from slightly higher ground surface elevations on the northern side of AP-4 towards lower elevations to the south of AP-4 along the Coosa River.

3.2 Groundwater Gradient and Flow Velocity

The representative groundwater hydraulic gradients within the uppermost aquifer beneath AP-4 were calculated using the April 2019 groundwater elevation data; the calculations are presented in **Table 4**. Given the surface area covered by AP-4, hydraulic gradients were calculated along the eastern, central, and western portions of the unit. The calculated gradients from the three portions were averaged to provide a representative gradient of 0.020 feet per foot (ft/ft) for AP-4.

The approximate horizontal flow velocity associated with AP-4 groundwater was calculated using the following derivative of Darcy's Law.

$$V = \text{linear velocity} = \frac{K * i}{n_e}$$

where:

V = Groundwater flow velocity $\left(\frac{\text{feet}}{\text{day}}\right)$

K = Average hydraulic conductivity $\left(\frac{\text{feet}}{\text{day}}\right)$

i = Horizontal hydraulic gradient $\left(\frac{\text{feet}}{\text{feet}}\right)$

n_e = Effective porosity

Aquifer testing was conducted by Southern Company Services (SCS) in 2013 to evaluate hydraulic conditions in the vicinity of AP-4. Results of these field events are discussed in detail in the HAR. Horizontal hydraulic conductivity (K_h) was estimated for units above the top of bedrock by performing rising head tests (slug out) and falling head tests (slug in). The tests were conducted at wells screened in the terrace alluvium or colluvial material; a geometric mean for K_h of 5.86×10^{-4} centimeters per second (cm/sec) [1.67 feet per day (ft/day)] was calculated from the slug test data for the two units. Since majority of the wells are screened in either alluvial or alluvial/colluvial materials, no hydraulic conductivity testing was conducted on the residuum, weathered shale, or unweathered shale.

The groundwater flow velocity calculation is performed using the geometric mean for K_h of 1.67 ft/day. An estimated effective porosity of 0.15 is used to represent average conditions for the silty clay alluvium/colluvium, derived based on review of literature, observed site lithology, and professional judgement. With these variables determined, and accounting for the representative hydraulic gradient discussed above, the representative groundwater flow velocity underneath AP-4 was calculated to be 0.22 ft/day.

3.3 Groundwater Sampling Procedures

Groundwater samples were collected from the compliance monitoring network using low-flow sampling procedures in accordance with 40 CFR 257.93(a). The wells were purged and sampled using a peristaltic pump equipped with new disposable polyethylene tubing. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters listed below during well purging to verify stabilization prior to sampling.

Turbidity was measured using a LaMotte 2020we® portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

- pH \pm 0.1 Standard Units (s.u.).
- Conductivity \pm 5%.
- \pm 0.2 milligrams per liter (mg/L) or \pm 10%, whichever is greater for dissolved oxygen (DO) > 0.5 mg/L. No criterion applies if DO < 0.5 mg/L, record only.
- Turbidity measured less than 10 nephelometric turbidity units (NTU).

Once stabilization was achieved, samples were collected into appropriately-preserved laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to Pace Analytical Services, LLC. in Norcross, Georgia, following chain-of-custody protocol. The field sampling forms generated during the nine monitoring events are provided in **Appendix A**.

3.4 Laboratory Analyses

Laboratory analyses were performed by Pace Analytical Services, LLC. (Pace Analytical), which is accredited by the National Environmental Laboratory Accreditation Program (NELAP). Pace Analytical maintains a NELAP certification for the Appendix III and Appendix IV parameters analyzed for this project. Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in **Appendix A**.

The groundwater analytical results from the eight background sampling events and the initial detection monitoring program event are summarized in **Table 5**. The associated Pace Analytical laboratory reports are provided in **Appendix A**.

3.5 Quality Assurance & Quality Control Summary

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events and included the following: field duplicates, equipment blanks, and field blank samples. QA/QC samples were collected in laboratory-provided bottles and submitted under the same chain of custody as the primary samples for analysis of the same parameters by Pace Analytical.

In addition to collecting QA/QC samples, the data were validated based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and applicable federal guidance documents (USEPA, 2001, 2011, and 2017). Where necessary, the data were qualified with supporting documentation and justifications. The associated data validation report is provided in **Appendix A** with the laboratory reports.

4.0 STATISTICAL ANALYSIS

The following section summarizes the statistical analysis of Appendix III groundwater monitoring data performed pursuant to 40 CFR 257.93.

4.1 Statistical Method

For the detection monitoring program, the following statistical methods were applied to evaluate the groundwater monitoring data:

- Interwell prediction limit (PL) method, combined with a 1-of-2 resample plan for boron, calcium, fluoride, pH, sulfate, and total dissolved solids (TDS); and
- Intrawell PL method, combined with a 1-of-3 resample plan for chloride.

Interwell PLs pool upgradient well data from wells HGWA-111, HGWA-112, and HGWA-113 to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs). Intrawell prediction limits use screened historical data within a given well to establish limits for parameters at that well. The most recent sample from the same well is compared to its respective background. An "initial exceedance" occurs when any downgradient well data exceed the PL.

If data from a detection monitoring sampling event initially exceed the PL, the resampling strategy will be used to verify the result. In resampling, independent resample(s) will be collected and evaluated within 90 days to determine whether the initial exceedance is verified. If the resample exceeds the PL, the initial exceedance is verified and an SSI of that Appendix III parameter is determined. When the resample result does not verify the initial result, the initial exceedance is considered an erroneous result and the resample value will replace the initial result.

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

- Statistical analyses are not performed on analytes containing 100% non-detects (USEPA, 2009).
- When data contain less than or equal to 15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis.

The reporting limit utilized for non-detects is the practical quantitation limit (PQL) as reported by the laboratory.

- When data contain between 15-50% non-detects, a non-detect adjustment such as the Kaplan-Meier or Regression on Order Statistics (ROS) method for adjustment of the mean and standard deviation will be used prior to constructing a parametric PL.
- Nonparametric PLs are used on data containing greater than 50% non-detects.

The Sanitas[™] groundwater statistical software was used to perform the statistical analyses. Sanitas[™] is a decision-support software package, that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009).

Time series plots generated by Sanitas[™] are used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells for Appendix III parameters are formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits.

4.2 Statistical Analyses Results

Initial statistical analysis identified preliminary PL exceedances of Appendix III parameters. A resampling event was conducted June 17-18, 2019. The resampling data are presented on **Table 5** with the associated lab reports provided in **Appendix A**. **Table B-1** in **Appendix B** presents a summarized comparison of the PLs to the April detection monitoring data and June resampling data. The PLs provided in this report evaluate the April 2019 data except in cases where resamples were collected due to initial exceedances. In those cases, the June 2019 data are used for comparison in the PLs.

Using the Tukey box plot method, two outliers were identified. A summary of the findings is included in **Appendix B**. Of the outliers identified by Tukey's method, only one outlier was flagged for TDS in upgradient well HGWA-112. The other value is similar to prior measurements within the given well or neighboring wells.

Based on review of the Appendix III statistical analysis presented in **Appendix B**, the following parameters represent SSIs over background PLs:

- Boron: HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118;
- Calcium: HGWC-103, HGWC-105, HGWC-107, HGWC-118;
- Fluoride: HGWC-118;
- pH: HGWC-101, HGWC-103;
- Sulfate: HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118;
- TDS: HGWC-103, HGWC-105, HGWC-107, HGWC-117

4.3 Appendix IV Background Data

Pursuant to 40 CFR 257.95, Appendix IV groundwater quality data is statistically analyzed and compared to groundwater protection standards if assessment monitoring is implemented. GPC is currently performing detection monitoring per 40 CFR 257.94 at AP-4 and has not implemented assessment monitoring. Therefore, statistical analysis of the Appendix IV data has not been performed.

5.0 MONITORING PROGRAM STATUS

Groundwater monitoring at AP-4 is currently being conducted under a detection monitoring program. SSIs of Appendix III parameters have been determined via statistical evaluation. Pursuant to 40 CFR 257.94(e), within 90 days from the determining an SSI, GPC will either (1) prepare a demonstration that a source other than AP-4 was the cause, or (2) implement assessment monitoring per 40 CFR 257.95. GPC will address the reported SSIs in accordance with the requirements, and options, of 40 CFR 257.94(e)(1-3) and (f).

6.0 CONCLUSIONS & FUTURE ACTIONS

This *2019 Annual Groundwater Monitoring & Corrective Action Report* for GPC's Plant Hammond AP-4 was prepared to fulfill the requirements of USEPA's CCR Rule and GA EPD Rules for Solid Waste Management 391-3-4-.10. Statistical evaluations of the groundwater monitoring data identified SSIs of Appendix III groundwater monitoring parameters. In accordance with 40 CFR 257.94(e)(1,2), GPC will either initiate an assessment monitoring program or prepare an alternate source demonstration within 90 days of this report.

The second 2019 semiannual groundwater monitoring event is planned for the fall of 2019.

7.0 REFERENCES

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TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond AP-4, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft BTOC) ⁽²⁾	Screen Interval Length
<i>Compliance Monitoring Well</i>									
HGWA-111	Upgradient	8/21/2012	1548832.95	1935222.98	592.24	558.97	548.97	43.67	10
HGWA-112	Upgradient	8/21/2012	1548884.32	1935647.24	596.75	567.00	557.00	40.15	10
HGWA-113	Upgradient	10/2/2012	1548943.20	1935990.30	595.13	569.00	559.00	36.53	10
HGWC-101	Downgradient	8/7/2012	1547726.28	1936368.99	579.26	551.72	541.72	37.94	10
HGWC-103	Downgradient	8/8/2012	1547849.94	1935733.30	581.16	553.88	543.88	37.68	10
HGWC-105	Downgradient	8/8/2012	1547856.65	1935110.32	582.46	548.09	538.09	44.67	10
HGWC-107	Downgradient	8/8/2012	1547911.01	1934442.88	579.76	551.96	541.96	38.20	10
HGWC-109	Downgradient	8/15/2012	1548626.80	1934361.54	577.33	556.37	546.37	31.36	10
HGWC-117	Downgradient	8/14/2012	1548099.53	1937180.31	582.32	552.46	542.46	40.26	10
HGWC-118	Downgradient	10/1/2012	1547981.61	1936946.80	579.48	548.58	538.58	40.90	10
<i>Groundwater Level Monitoring Piezometer</i>									
MW-12	Downgradient	10/21/2014	1547862.70	1937521.75	584.33	556.90	546.90	37.83	10
GWC-2	Downgradient	8/7/2012	1547714.61	1936033.63	577.91	550.88	540.88	37.43	10
GWC-4	Downgradient	8/8/2012	1547899.28	1935398.50	581.02	543.84	533.84	47.58	10
GWC-6	Downgradient	8/13/2012	1547844.88	1934800.39	582.01	554.28	544.28	38.13	10
GWC-8	Downgradient	8/9/2012	1548167.13	1934344.12	580.50	549.98	539.98	40.92	10
GWA-14	Upgradient	10/2/2012	1548981.33	1936642.14	592.58	562.10	552.10	40.88	10
GWA-15	Upgradient	8/22/2012	1548765.12	1936807.85	592.03	571.91	561.91	30.52	10
GWA-16	Upgradient	8/21/2012	1548591.94	1937209.89	583.04	570.43	560.43	23.01	10
GWC-19	Upgradient	8/14/2012	1547893.59	1936571.97	581.31	555.52	545.52	36.19	10

Notes:

ft = feet

AMSL = above mean sea level

BTOC = below top of casing

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.

(2) Total well depth accounts for sump if data provided on well construction logs.

Table 2
Groundwater Sampling Event Summary
Plant Hammond AP-4, Floyd County, Georgia

Well ID	Hydraulic Location	Aug 29 - 31, 2016	Oct 17, 20, 24, and 25, 2016	Jan 23, 25, 27, and 31, 2017	May 22 - 24, 2017	Aug 9 - 10, 2017	Nov 13 - 14, 2017	June 4 - 7, 2018	Oct 1 - 3, 2018	Apr 1 - 5, 2019	June 17 - 18, 2019	Status of Monitoring Well
Purpose of Sampling Event:		Background	Background	Background	Background	Background	Background	Background	Background	Detection	Verification	
HGWA-111	Upgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	--	Detection
HGWA-112	Upgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	--	Detection
HGWA-113	Upgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	--	Detection
HGWC-101	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection
HGWC-103	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection
HGWC-105	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection
HGWC-107	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection
HGWC-109	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection
HGWC-117	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection
HGWC-118	Downgradient	BG01	BG02	BG03	BG04	BG05	BG06	BG07	BG08	D01	V01	Detection

Notes:

BGXX = Background monitoring event number

DXX = Detection monitoring event number

VXX= Verification event number

Table 3
 Summary of Groundwater Elevations
 Plant Hammond AP-4, Floyd County, Georgia

Well ID	Top of Casing Elevation (ft AMSL)	Aug 29, 2016	Oct 17, 2016	Jan 23, 2017	May 22, 2017	Aug 9, 2017	Nov 13, 2017	Jun 4, 2018	Oct 1, 2018	Apr 1, 2019
		Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)	Groundwater Elevations (ft AMSL)
<i>Compliance Monitoring Well</i>										
HGWA-111	592.24	575.14	573.50	578.71	579.33	579.06	578.83	579.79	579.44	581.62
HGWA-112	596.75	578.86	577.54	585.26	584.36	583.13	583.35	584.15	585.15	587.04
HGWA-113	595.13	580.97	580.17	583.24	586.91	583.64	583.59	586.17	585.01	590.83
HGWC-101	579.26	564.22	567.60	562.35	565.76	565.71	564.15	567.32	565.85	568.33
HGWC-103	581.16	565.22	564.21	562.97	566.49	566.63	565.61	567.83	566.74	570.05
HGWC-105	582.46	562.79	560.09	564.29	564.43	564.33	561.70	567.29	564.16	565.84
HGWC-107	579.76	562.92	560.25	562.17	564.48	564.38	561.80	566.87	563.36	566.25
HGWC-109	577.33	565.22	564.02	566.61	567.92	567.80	567.74	568.78	568.09	570.85
HGWC-117	582.32	564.16	562.07	563.53	565.71	565.86	564.42	568.20	565.79	567.01
HGWC-118	579.48	564.37	562.56	563.89	565.92	565.97	564.55	568.14	566.05	567.79
<i>Groundwater Level Monitoring Piezometer</i>										
MW-12	584.33	564.28	562.26	557.83	565.91	567.14	564.76	568.58	566.00	567.20
GWC-2	577.91	563.07	560.43	565.50	564.67	564.55	561.96	567.54	564.37	566.05
GWC-4	581.02	565.43	564.32	562.96	566.51	566.67	565.64	567.80	566.76	570.31
GWC-6	582.01	563.02	560.48	562.04	564.53	564.46	562.03	566.89	564.45	566.51
GWC-8	580.50	564.00	562.90	562.59	564.81	565.70	564.96	566.90	565.68	570.11
GWA-14	592.58	582.90	582.23	585.09	587.47	585.39	585.08	586.83	585.47	589.88
GWA-15	592.03	579.10	578.95	584.79	582.03	582.57	582.85	582.92	583.12	584.08
GWA-16	583.04	575.91	576.11	578.35	577.28	575.37	577.40	577.57	577.47	577.79
GWC-19	581.31	566.23	564.95	564.66	567.58	567.63	566.51	569.15	567.82	570.43

Notes:

ft AMSL = feet above mean sea level

Table 4
 Groundwater Gradient and Flow Velocity Calculations
 Plant Hammond AP-4, Floyd County, Georgia

Flow Path Areas of AP-4 ⁽¹⁾	Hydraulic Gradient - April 1, 2019 Data					Groundwater Flow Velocity		
	h ₁ (ft)	h ₂ (ft)	Δl (ft)	Δh/Δl (ft/ft)	Avg Δh/Δl (ft/ft)	K (ft/d)	n	V (ft/d) ⁽²⁾
Eastern area	588	572	740	0.022	0.020	1.67	0.15	0.22
Central area	588	572	770	0.021				
Western area	587.04	572	875	0.017				

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

h₁, h₂ = groundwater elevation for identified location

Δh/Δl = hydraulic gradient

K = hydraulic conductivity

Δl = distance between identified location 1 and 2

n = effective porosity

V = groundwater flow velocity

(1) Flow path direction relative to the orientation of AP-4 and illustrated on Figure 3 of associated report.

(2) Groundwater flow velocity equation: $V = [K * (\Delta h / \Delta l)] / n$

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWA-111	HGWA-111	HGWA-111	HGWA-111	HGWA-111	HGWA-111	HGWA-111	HGWA-111	HGWA-111	HGWA-111
Sample Date:	08/30/2016	10/20/2016	01/25/2017	05/24/2017	08/10/2017	11/13/2017	06/04/2018	10/01/2018	4/1/2019	
Parameter ^(1,2)										
APPENDIX III	Boron	ND	ND (0.016 J)	ND (0.0095 J)	ND (0.0094 J)	ND	ND (0.0103 J)	ND (0.0065 J)	ND (0.0054 J)	ND (0.0076 J)
	Calcium	40.3	38.7	44.6	34.8	48.6	17.1	30.1	ND (14.2 J)	58.4
	Chloride	3.3	3.2	2.7	3.0	2.8	2.5	2.6	2.2	4.0
	Fluoride	ND (0.07 J)	ND (0.07 J)	ND (0.14 J)	ND (0.02 J)	ND (0.06 JB)	ND	ND (0.032 J)	ND	ND (0.042 J)
	pH ⁽³⁾	6.89	6.73	7.02	6.44	6.79	5.94	6.12	5.92	7.09
	Sulfate	1.6	1.6	1.6	1.4	1.6	1.3	1.4	1.0	1.7
	TDS	172	108	345	126	174	158	131	101	213
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--
	Barium	0.0275	0.0255	0.0304	0.0256	0.0306	0.0217	0.025	0.021	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	--
	Chromium	ND	ND	ND (0.0029 J)	ND (0.0004 J)	ND	ND	ND	ND	--
	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	--
	Fluoride	ND (0.07 J)	ND (0.07 J)	ND (0.14 J)	ND (0.02 J)	ND (0.06 JB)	ND	ND (0.032 J)	ND	ND (0.042 J)
	Lead	ND (0.0001 J)	ND	ND	ND	ND	ND	ND	ND	--
	Lithium	ND (0.0022 J)	ND	ND	ND (0.0017 J)	ND (0.0017 J)	ND	ND (0.0016 J)	ND	--
	Mercury	ND (0.00004 JB)	ND	ND (0.00004 J)	ND	ND	ND	ND	ND (0.000043 J)	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--
	Radium	0.804 U	1.13 U	0.888 U	0.622 U	0.745 U	0.778 U	0.637 U	0.451 U	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWA-112	HGWA-112	HGWA-112	HGWA-112	HGWA-112	HGWA-112	HGWA-112	HGWA-112	HGWA-112	
Sample Date:	08/30/2016	10/24/2016	01/25/2017	05/23/2017	08/10/2017	11/13/2017	06/04/2018	10/01/2018	4/2/2019	
Parameter ^(1,2)										
APPENDIX III	Boron	ND	ND (0.0367 J)	ND (0.0075 J)	ND (0.0073 J)	ND	ND (0.0089 J)	ND (0.0070 J)	ND	ND (0.0043 J)
	Calcium	6.69	6.25	6.58	6.40	6.54	6.26	7.4	5.8	6.7
	Chloride	5.4	5.2	5.0	5.1	5.2	5.5	5.3	5.6	5.7
	Fluoride	ND (0.04) J	ND (0.05) J	ND	ND (0.004 J)	ND (0.03) JB	ND	ND	ND	ND
	pH ⁽³⁾	5.77	5.61	5.68	5.70	5.59	5.56	5.62	5.62	5.47
	Sulfate	ND (0.63 J)	ND (0.62 J)	ND (0.62 J)	ND (0.55 J)	ND (0.66 J)	ND (0.61 J)	ND (0.73 J)	ND (0.52 J)	ND (0.78 J)
	TDS	76	65	152	52	60	75	70.0	76.0	69
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--
	Barium	0.0269	0.0280	0.0252	0.0293	0.0274	0.0275	0.027	0.026	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	--
	Chromium	ND (0.0038 J)	ND (0.0039 J)	ND (0.0038 J)	ND (0.0038 J)	ND (0.0039 J)	ND (0.0038 J)	ND (0.0037 J)	ND (0.0036 J)	--
	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	--
	Fluoride	ND (0.04) J	ND (0.05) J	ND	ND (0.004 J)	ND (0.03) JB)	ND	ND	ND	ND
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--
	Lithium	ND	ND	ND	ND	ND	ND	ND	ND	--
	Mercury	ND (0.000041 JB)	ND	ND (0.00004 J)	ND	ND	ND	ND	ND (0.000039 J)	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--
	Radium	1.32 U	1.30 U	1.04 U	0.541 U	0.536 U	0.786 U	0.233 U	0.494 U	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	

Notes:

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JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWA-113	HGWA-113	HGWA-113	HGWA-113	HGWA-113	HGWA-113	HGWA-113	HGWA-113	HGWA-113	
Sample Date:	08/30/2016	10/24/2016	01/25/2017	05/23/2017	08/10/2017	11/14/2017	06/05/2018	10/01/2018	4/2/2019	
Parameter ^(1,2)										
APPENDIX III	Boron	ND	ND (0.0226 J)	ND (0.0090 J)	ND (0.0082 J)	ND (0.0061 J)	ND (0.0120 J)	ND (0.0085 J)	ND (0.0042 J)	ND (0.0059 J)
	Calcium	6.72	6.40	6.87	7.13	6.71	7.40	7.4	6.2	7.4
	Chloride	2	1.9	1.9	1.6	1.7	2.0	1.7	1.6	1.8
	Fluoride	ND (0.2 J)	ND (0.16 J)	ND (0.15 J)	ND (0.18 J)	ND (0.19 JB)	ND (0.16 J)	ND (0.18 J)	ND (0.078 J)	ND (0.18 J)
	pH ⁽³⁾	5.99	5.84	6.04	6.01	5.98	6.16	5.86	5.94	6.00
	Sulfate	14	11	12	12	11	11	9.9	6.7	8.7
	TDS	77	111	155	74	94	89	92.0	91.0	94.0
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--
	Barium	0.0269	0.0258	0.0272	0.0293	0.0310	0.0289	0.028	0.025	--
	Beryllium	ND	ND (0.0019 J)	ND	ND	ND	ND	ND	ND	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	--
	Chromium	ND	ND (0.0010 J)	ND (0.0012 J)	ND (0.0012 J)	ND (0.0019 J)	ND (0.0016 J)	ND	ND (0.0023 J)	--
	Cobalt	ND (0.0006 J)	ND	ND	ND	ND (0.0004 J)	ND (0.0003 J)	ND	ND	--
	Fluoride	ND (0.2 J)	ND (0.16 J)	ND (0.15 J)	ND (0.18 J)	ND (0.19 JB)	ND (0.16 J)	ND (0.18 J)	ND (0.078 J)	ND (0.18 J)
	Lead	ND	ND	ND	ND	ND (0.0001 J)	ND	ND	ND	--
	Lithium	ND	ND	ND	ND (0.0011 J)	ND	ND	ND (0.0010 J)	ND (0.0010 J)	--
	Mercury	ND (0.00004 JB)	ND	ND (0.00004 J)	ND	ND	ND	ND	ND (0.000043 J)	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--
	Radium	0.587 U	0.979 U	0.0380 U	0.898 U	0.759 U	0.0762 U	0.594 U	0.982	--
	Selenium	ND (0.0027 J)	ND (0.0034 J)	ND (0.0023 J)	ND (0.0024 J)	ND (0.0023 J)	ND	ND (0.0019 J)	ND (0.0024 J)	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101	HGWC-101
Sample Date:	08/31/2016	10/20/2016	01/31/2017	05/23/2017	08/10/2017	11/14/2017	06/06/2018	10/03/2018	4/4/2019	6/18/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	ND (0.0724 J)	ND (0.0877 J)	0.0928	0.0795	0.0814	0.108	0.081	0.092	ND (0.060 J)	--
	Calcium	19.4	19.3	19.1	18.3	20.9	21.7	17.0	ND (19.1 J)	16.9	--
	Chloride	5.7	5.7	5.8	5.3	5.4	5.8	5.3	5.8	5.9	--
	Fluoride	ND (0.05 J)	ND (0.03 J)	ND	ND	ND	ND	ND	ND	ND	--
	pH ⁽³⁾	5.35	5.30	5.24	5.39	5.47	5.40	5.37	5.39	5.31	5.30
	Sulfate	110	110	120	97	96	110	95.5	121	95.1	102
	TDS	278	165	263	190	175	253	188	238	149	--
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Barium	0.0527	0.0477	0.0527	0.0436	0.0419	0.0407	0.043	0.041	--	--
	Beryllium	ND	ND	ND	ND (0.00007 J)	ND	ND	ND (0.000059 J)	ND (0.000065 J)	--	--
	Cadmium	ND (0.0002 J)	ND (0.0003 J)	ND (0.0001 J)	ND (0.0002 J)	ND (0.0002 J)	ND	ND (0.000095 J)	ND (0.00018 J)	--	--
	Chromium	ND	ND	ND	ND (0.0006 J)	ND	ND	ND	ND	--	--
	Cobalt	ND (0.0033 J)	ND (0.0025 J)	ND (0.0010 J)	ND (0.0025 J)	ND (0.0029 J)	ND (0.0030 J)	ND (0.0016 J)	ND (0.0028 J)	--	--
	Fluoride	ND (0.05 J)	ND (0.03 J)	ND	ND	ND	ND	ND	ND	ND	--
	Lead	ND	ND	ND	ND (0.0009 J)	ND	ND	ND	ND	--	--
	Lithium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Mercury	ND	ND	ND (0.000093 JB)	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	0.621 U	1.4	0.906 U	0.388 U	1.03 U	0.769 U	1.28 U	0.302 U	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

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ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103	HGWC-103
Sample Date:	08/31/2016	10/24/2016	01/31/2017	05/23/2017	08/10/2017	11/14/2017	06/06/2018	10/03/2018	4/4/2019	6/17/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	2.22	1.83	2.12	2.56	2.28	2.32	2.5	2.4	2.4	2.3
	Calcium	70.4	70.9	63.6	111	81.2	79.7	88.3	85.3	91.9	92.6
	Chloride	5.2	5.2	5.6	5.7	5.8	6.0	6.4	6.3	6.9	5.2
	Fluoride	ND (0.06 J)	ND (0.13 J)	ND	ND (0.15 J)	ND	ND	ND	ND	ND (0.042 J)	--
	pH ⁽³⁾	5.54	5.48	5.51	5.98	5.63	5.59	5.49	5.53	5.44	5.53
	Sulfate	280	280	300	340	300	310	351	381	358	311
	TDS	483	517	516	637	459	545	559	582	535	515
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND (0.0022 J)	ND	--	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Barium	0.045	0.0386	0.0365	0.0254	0.0396	0.0385	0.043	0.040	--	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cadmium	ND (0.0006 J)	ND (0.0008 J)	ND (0.0006 J)	ND (0.0006 J)	ND (0.0007 J)	ND (0.0007 J)	ND (0.00073 J)	ND (0.00078 J)	--	--
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cobalt	ND (0.0018 J)	ND (0.0018 J)	ND (0.0016 J)	ND (0.0014 J)	ND (0.0025 J)	ND (0.0020 J)	ND (0.0031 J)	ND (0.0023 J)	--	--
	Fluoride	ND (0.06 J)	ND (0.13 J)	ND	ND (0.15 J)	ND	ND	ND	ND	ND (0.042 J)	--
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Lithium	ND	ND	ND	ND (0.0012 J)	ND (0.0016 J)	ND (0.0015 J)	ND (0.0017 J)	ND (0.0016 J)	--	--
	Mercury	ND	ND	ND (0.00008 JB)	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	1.62	1.01 U	0.976 U	0.891 U	0.601 U	0.567 U	0.836 U	0.111 U	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

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J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

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ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105	HGWC-105
Sample Date:	08/31/2016	10/25/2016	01/31/2017	05/24/2017	08/10/2017	11/14/2017	06/06/2018	10/02/2018	4/4/2019	6/17/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	1.14	1.21	1.43	1.30	1.28	1.29	1.4	1.2	ND (1.4 J)	--
	Calcium	74.2	72.5	70.3	75.9	84.0	87.2	81.0	84.7	73.8	81.2
	Chloride	3	2.8	3.3	3.5	2.9	4.0	2.9	3.5	3.9	--
	Fluoride	ND (0.15 J)	ND (0.09 J)	ND (0.13 J)	ND (0.07 J)	ND (0.03 JB)	ND	ND (0.074 J)	ND	ND (0.030 J)	--
	pH ⁽³⁾	6.50	6.34	6.43	6.31	6.45	6.53	6.49	6.18	6.17	6.55
	Sulfate	190	190	210	180	180	170	168	173	185	162
	TDS	389	316	437	352	356	375	385	374	340	370
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Barium	0.067	0.0745	0.0674	0.0668	0.0670	0.0643	0.068	0.066	--	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cobalt	ND (0.0014 J)	ND (0.0013 J)	ND (0.0006 J)	ND (0.0007 J)	ND (0.0006 J)	ND (0.0005 J)	ND (0.00056 J)	ND	--	--
	Fluoride	ND (0.15 J)	ND (0.09 J)	ND (0.13 J)	ND (0.07 J)	ND (0.03 JB)	ND	ND (0.074 J)	ND	ND (0.030 J)	--
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Lithium	ND (0.0034 J)	ND (0.0043 J)	ND (0.0042 J)	ND (0.0039 J)	ND (0.0040 J)	ND (0.0044 J)	ND (0.0041 J)	ND (0.0041 J)	--	--
	Mercury	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	0.906 U	1.03	0.868 U	0.728 U	1.35	0.817 U	0.559 U	0.336 U	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107	HGWC-107
Sample Date:	08/31/2016	10/25/2016	01/31/2017	05/24/2017	08/10/2017	11/14/2017	06/06/2018	10/02/2018	4/3/2019	6/17/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	0.651	0.778	0.782	0.753	0.702	0.780	0.87	0.82	0.89	0.86
	Calcium	44.7	49.0	46.6	49.5	54.2	53.2	55.0	55.4	54.0	55.3
	Chloride	3.2	3.2	3.1	2.9	2.8	3.4	2.8	3.2	3.6	2.9
	Fluoride	ND (0.08 J)	ND (0.16 J)	ND (0.16 J)	ND (0.009 J)	ND	ND	ND (0.057 J)	ND	ND	--
	pH ⁽³⁾	6.11	6.04	5.94	6.06	6.06	5.99	6.00	6.18	6.06	6.16
	Sulfate	130	130	130	130	130	130	132	132	139	126
	TDS	235	223	346	234	254	313	278	274	273	272
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND (0.0011 J)	--	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Barium	0.0391	0.0410	0.0382	0.0377	0.0385	0.0390	0.039	0.038	--	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cadmium	ND (0.0001 J)	ND (0.00008 J)	ND (0.00009 J)	ND (0.0001 J)	ND	ND	ND (0.00012 J)	ND (0.00010 J)	--	--
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Fluoride	ND (0.08 J)	ND (0.16 J)	ND (0.16 J)	ND (0.009 J)	ND	ND	ND (0.057 J)	ND	ND	--
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Lithium	ND	ND	ND	ND	ND	ND	ND (0.00099 J)	ND	--	--
	Mercury	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	1.20	1.11 U	1.45	0.393 U	0.840 U	1.01 U	0.365 U	1.23	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109	HGWC-109
Sample Date:	08/31/2016	10/25/2016	01/31/2017	05/24/2017	08/10/2017	11/14/2017	06/06/2018	10/02/2018	4/3/2019	6/17/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	ND (0.402)	0.372	0.404	0.415	0.397	0.366	0.48	0.43	0.40	0.37
	Calcium	35.1	35.4	34.2	35.3	43.1	37.4	41.1	42.5	37.5	--
	Chloride	5	4.8	5.5	5.3	4.6	5.6	5.3	5.3	5.0	--
	Fluoride	ND (0.12 J)	ND (0.17 J)	ND (0.05 J)	ND (0.13 J)	ND (0.12 JB)	ND	ND (0.15 J)	ND	ND (0.050 J)	--
	pH ⁽³⁾	6.78	6.55	6.50	6.42	6.63	6.50	6.59	6.54	6.42	6.60
	Sulfate	36	41	37	40	40	40	49.7	42.3	36.0	30.9
	TDS	182	172	252	184	208	252	224	230	210	--
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Arsenic	ND (0.0045 J)	ND (0.0030 J)	ND (0.0022 J)	ND (0.0012 J)	ND (0.0016 J)	ND (0.0011 J)	ND (0.0018 J)	ND (0.0014 J)	--	--
	Barium	0.0883	0.0831	0.0844	0.0784	0.0903	0.0830	0.095	0.089	--	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cobalt	ND (0.0023 J)	ND (0.0017 J)	ND (0.0017 J)	ND (0.0020 J)	ND (0.0012 J)	ND (0.0014 J)	ND (0.0014 J)	ND (0.00081 J)	--	--
	Fluoride	ND (0.12 J)	ND (0.17 J)	ND (0.05 J)	ND (0.13 J)	ND (0.12 JB)	ND	ND (0.15 J)	ND	ND (0.050 J)	
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Lithium	ND	ND	ND	ND (0.0012 J)	ND	ND	ND (0.0013 J)	ND (0.0013 J)	--	--
	Mercury	ND	ND	ND (0.00008 J)	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	1.03	1.07	0.588 U	0.593 U	0.691 U	0.653 U	0.939 U	0.225 U	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117	HGWC-117
Sample Date:	08/31/2016	10/20/2016	01/27/2017	05/23/2017	08/10/2017	11/14/2017	06/07/2018	10/03/2018	4/5/2019	6/18/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	0.821	0.956	0.990	0.438	0.821	0.536	0.50	0.85	ND (1.0 J)	--
	Calcium	63.4	64.4	68.6	32.0	78.9	46.9	37.7	68.0	70.0	36.3
	Chloride	7.1	7.7	7.8	3.6	5.9	4.0	3.6	7.6	8.9	--
	Fluoride	ND (0.09 J)	ND (0.11 J)	ND (0.28 J)	ND (0.01 J)	ND (0.1 JB)	ND	ND	ND	ND (0.19 J)	--
	pH ⁽³⁾	6.07	6.00	6.20	5.27	6.27	5.40	5.29	6.08	5.99	5.33
	Sulfate	150	150	150	110	140	110	103	169	141	116
	TDS	381	319	407	258	359	310	223	337	334	254
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Barium	0.0547	0.0529	0.0490	0.0352	0.0457	0.0368	0.036	0.047	--	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND (0.000068 J)	ND	--	--
	Cadmium	ND (0.0008 J)	ND (0.0008 J)	ND (0.0007 J)	ND (0.0005 J)	ND (0.0004 J)	ND (0.0005 J)	ND (0.00049 J)	ND (0.00079 J)	--	--
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cobalt	ND (0.0035 J)	ND (0.0045 J)	ND (0.0041 J)	ND (0.0071 J)	ND (0.0031 J)	ND (0.0062 J)	ND (0.0083 J)	ND (0.0050 J)	--	--
	Fluoride	ND (0.09 J)	ND (0.11 J)	ND (0.28 J)	ND (0.01 J)	ND (0.1 JB)	ND	ND	ND	ND (0.19 J)	--
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Lithium	ND (0.0024 J)	ND (0.0027 J)	ND	ND	ND (0.0021 J)	ND	ND (0.0011 J)	ND (0.0021 J)	--	--
	Mercury	ND (0.00007 JB)	ND	ND	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	1.12	0.803 U	1.08 U	0.624 U	0.695 U	0.990 U	1.04 U	0.198 U	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

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ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-4, Floyd County, Georgia

Well ID:	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118	HGWC-118
Sample Date:	08/31/2016	10/20/2016	01/31/2017	05/23/2017	08/10/2017	11/14/2017	06/07/2018	10/03/2018	4/5/2019	6/18/2019	
Parameter ^(1,2)											
APPENDIX III	Boron	0.681	0.697	0.768	0.754	0.608	0.691	0.57	0.51	ND (0.60 J)	--
	Calcium	79.3	83.7	76.8	77.2	83.1	86.7	79.7	77.1	82.0	76.5
	Chloride	4.5	4.4	4.8	4.3	4.2	4.4	4.1	4.4	4.3	--
	Fluoride	ND (0.18 J)	ND (0.12 J)	0.30	ND (0.14 J)	ND (0.11 JB)	ND (0.07 J)	0.30	ND (0.12 J)	0.33	0.89
	pH ⁽³⁾	7.03	7.01	6.96	6.92	6.99	6.90	7.03	7.08	6.96	6.85
	Sulfate	88	81	87	84	78	79	60.1	91.5	75.1	77.0
	TDS	373	305	361	359	325	373	338	328	308	215
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Barium	0.0595	0.055	0.0613	0.0680	0.0638	0.0700	0.059	0.056	--	--
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Cobalt	ND	ND	ND	ND (0.0005 J)	ND (0.0003 J)	ND (0.0004 J)	ND	ND	--	--
	Fluoride	ND (0.18 J)	ND (0.12 J)	0.30	ND (0.14 J)	ND (0.11 JB)	ND (0.07 J)	0.30	ND (0.12 J)	0.33	0.89
	Lead	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Lithium	ND	ND	ND	ND (0.0012 J)	ND	ND	ND (0.0015 J)	ND	--	--
	Mercury	ND	ND	ND (0.00009 JB)	ND	ND	ND	ND	ND	--	--
	Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	--	--
	Radium	NS	1.97	1.03	0.398 U	0.938 U	0.335 U	0.696 U	1.60 U	--	--
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	--	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

JB = Indicates the parameter was estimated and detected in an associated blank at a similar level.

ND = Indicates the parameter was not detected above the analytical MDL

TDS = Total dissolved solids

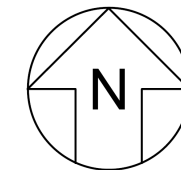
U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

(3) The pH value presented was recorded at the time of sample collection in the field.

FIGURES



Note:
1. Aerial photograph source: Google Earth Pro, February 2018.



SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

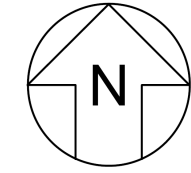
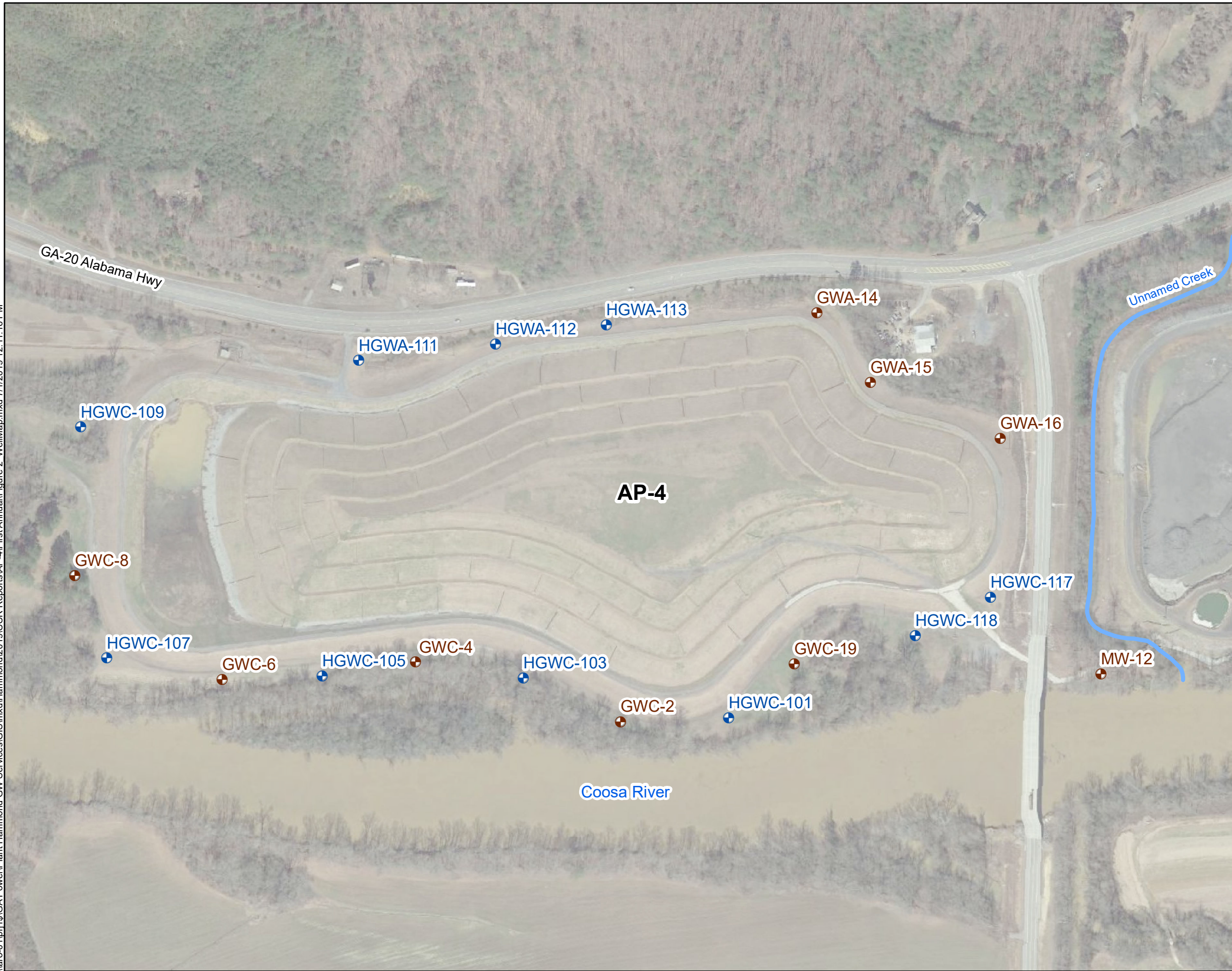
KENNESAW, GA

JULY 2019



**FIGURE
1**

\\arc-01\proj1\GA Power\Plant Hammond GIS\mxd\Hammond2019\CCR Reports\AP-4\Final\Annual\Figure 1_SiteMap.mxd 7/1/2019 12:13:10 PM

\\hro-01\pfr1\GA Power\Plant Hammond_GW_Services\GIS\mxd\hammond2019\CCR Reports\AP-4\First Annual\Figure 2_WellMap.mxd 7/1/2019 12:11:16 PM



LEGEND

-  Compliance Monitoring Well
-  Groundwater Level Monitoring Piezometer



Note:
1. Aerial photograph source: Google Earth Pro, February 2018.



SCALE IN FEET

MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

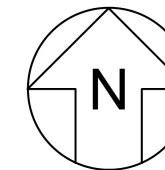
Prepared By: 

KENNESAW, GA

JULY 2019

**FIGURE
2**

\\aro-01\pr1\GA Power\Plant Hammond_GW Services\GIS\mxd\hammond2019\CCR Reports\AP-4\First Annual\Figure 3_POTMap_April2019_Ap4.mxd 7/1/2019 12:04:54 PM



- LEGEND**
- Compliance Monitoring Well
 - Groundwater Level Monitoring Piezometer
 - Groundwater Elevation Iso-Contour
 - Approximate Groundwater Flow Direction



- Notes:**
1. Water level elevation recorded on April 1, 2019. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.
 2. Aerial photograph source: Google Earth Pro, February 2018.



SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - APRIL 2019

GEORGIA POWER COMPANY
PLANT HAMMOND AP-4
FLOYD COUNTY, GEORGIA

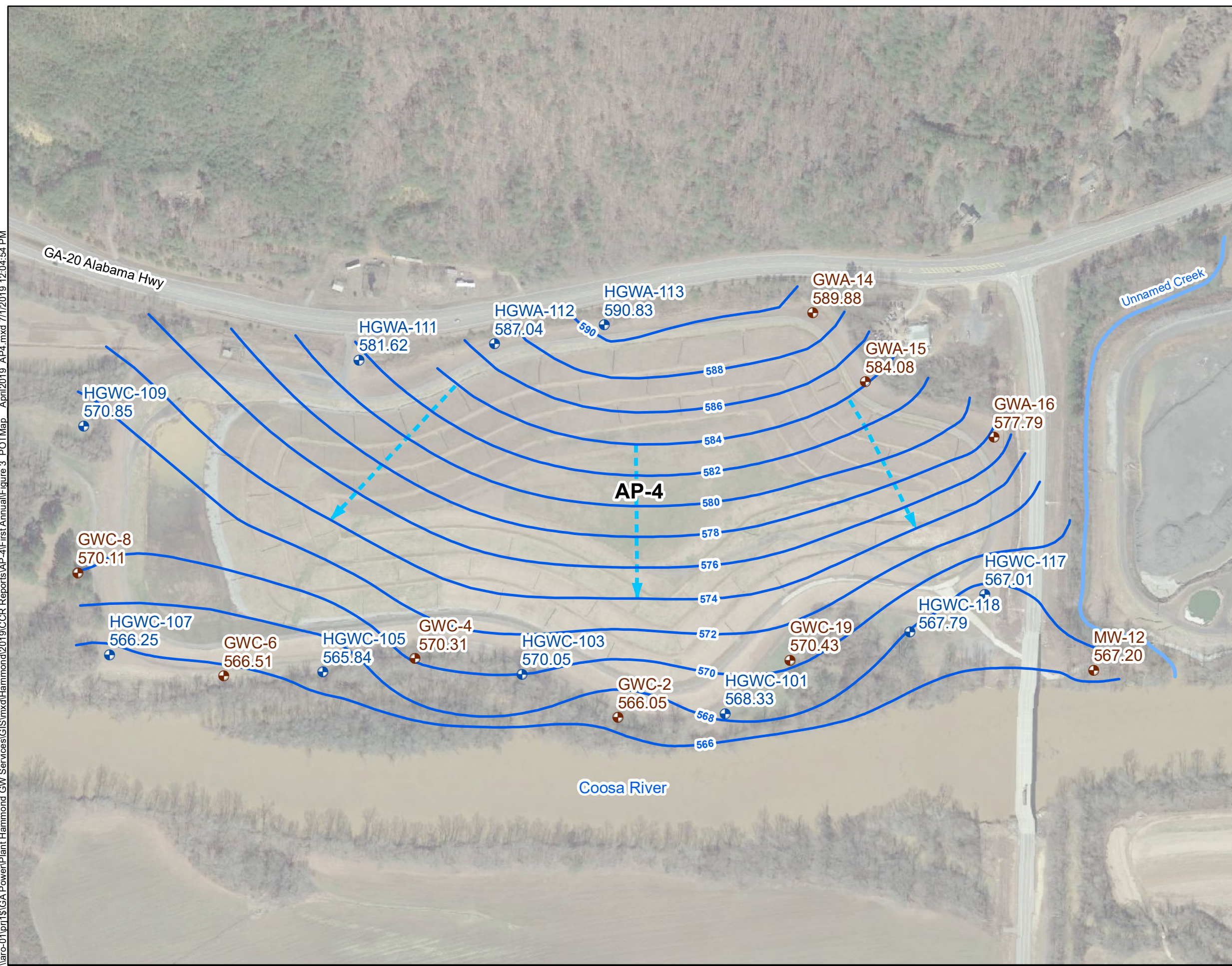
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA

JULY 2019

FIGURE 3



APPENDIX A

Laboratory Analytical and Field Sampling Reports

Appendix A1: Laboratory Analytical Data Packages and Data
Validation Reports

Appendix A2: Field Data Sheets

APPENDIX A1

Laboratory Analytical Data Packages and Data Validation Reports

Laboratory Reports



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: AZH0983

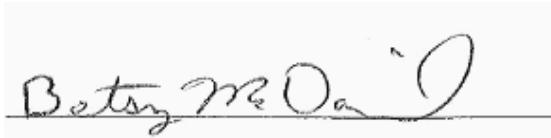
September 08, 2016

Project: CCR Event

Project #:Plant Hammond

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

September 08, 2016

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-111	AZH0983-01	Ground Water	08/30/16 13:16	08/31/16 13:00
HGWA-112	AZH0983-02	Ground Water	08/30/16 14:25	08/31/16 13:00
HGWA-113	AZH0983-03	Ground Water	08/30/16 15:45	08/31/16 13:00
HGWA-122	AZH0983-04	Ground Water	08/30/16 16:20	08/31/16 13:00



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

September 08, 2016

Report No.: AZH0983

Project: CCR Event

Client ID: HGWA-111

Lab Number ID: AZH0983-01

Date/Time Sampled: 8/30/2016 1:16:00PM

Date/Time Received: 8/31/2016 1:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	172	25	10	mg/L	SM 2540 C		1	09/01/16 12:00	09/01/16 12:00	6090007	JPT
Inorganic Anions											
Chloride	3.3	0.25	0.01	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 12:02	6090013	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	09/01/16 10:00	09/02/16 12:02	6090013	RLC
Sulfate	1.6	1.0	0.05	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 12:02	6090013	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:15	6090039	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Barium	0.0275	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:15	6090039	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:15	6090039	CSW
Calcium	40.3	2.50	0.155	mg/L	EPA 6020B		5	09/02/16 10:10	09/03/16 16:16	6090039	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Lead	0.0001	0.0050	0.0001	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Lithium	0.0022	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 19:09	6090039	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	09/02/16 08:45	09/02/16 13:18	6090041	MTC



PACE ANALYTICAL SERVICES, INC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0983

Project: CCR Event

Client ID: HGWA-112

Lab Number ID: AZH0983-02

Date/Time Sampled: 8/30/2016 2:25:00PM

Date/Time Received: 8/31/2016 1:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	76	25	10	mg/L	SM 2540 C		1	09/01/16 12:00	09/01/16 12:00	6090007	JPT
Inorganic Anions											
Chloride	5.4	0.25	0.01	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 12:23	6090013	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	09/01/16 10:00	09/02/16 12:23	6090013	RLC
Sulfate	0.63	1.0	0.05	mg/L	EPA 300.0	J	1	09/01/16 10:00	09/02/16 12:23	6090013	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:33	6090039	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Barium	0.0269	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:33	6090039	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:33	6090039	CSW
Calcium	6.69	2.50	0.155	mg/L	EPA 6020B		5	09/02/16 10:10	09/03/16 16:22	6090039	CSW
Chromium	0.0038	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:15	6090039	CSW
Mercury	0.000041	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	09/02/16 08:45	09/02/16 13:20	6090041	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0983

Project: CCR Event

Client ID: HGWA-113

Lab Number ID: AZH0983-03

Date/Time Sampled: 8/30/2016 3:45:00PM

Date/Time Received: 8/31/2016 1:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	77	25	10	mg/L	SM 2540 C		1	09/02/16 10:45	09/02/16 10:45	6090046	JPT
Inorganic Anions											
Chloride	2.0	0.25	0.01	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 12:45	6090013	RLC
Fluoride	0.20	0.30	0.02	mg/L	EPA 300.0	J	1	09/01/16 10:00	09/02/16 12:45	6090013	RLC
Sulfate	14	1.0	0.05	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 12:45	6090013	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:37	6090039	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Barium	0.0269	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:37	6090039	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:37	6090039	CSW
Calcium	6.72	2.50	0.155	mg/L	EPA 6020B		5	09/02/16 10:10	09/03/16 16:28	6090039	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Selenium	0.0027	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:21	6090039	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	09/02/16 08:45	09/02/16 13:27	6090041	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0983

Project: CCR Event

Client ID: HGWA-122

Lab Number ID: AZH0983-04

Date/Time Sampled: 8/30/2016 4:20:00PM

Date/Time Received: 8/31/2016 1:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	280	25	10	mg/L	SM 2540 C		1	09/02/16 10:45	09/02/16 10:45	6090046	JPT
Inorganic Anions											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 14:52	6090013	RLC
Fluoride	0.19	0.30	0.02	mg/L	EPA 300.0	J	1	09/01/16 10:00	09/02/16 14:52	6090013	RLC
Sulfate	49	1.0	0.05	mg/L	EPA 300.0		1	09/01/16 10:00	09/02/16 14:52	6090013	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:42	6090039	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Barium	0.0463	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:42	6090039	CSW
Boron	0.277	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 13:42	6090039	CSW
Calcium	71.3	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 10:10	09/03/16 16:34	6090039	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Molybdenum	0.0026	0.0100	0.0017	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 19:26	6090039	CSW
Mercury	0.000043	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	09/02/16 08:45	09/02/16 13:30	6090041	MTC



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Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0983

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090007 - SM 2540 C											
Blank (6090007-BLK1)						Prepared & Analyzed: 09/01/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6090007-BS1)						Prepared & Analyzed: 09/01/16					
Total Dissolved Solids	396	25	10	mg/L	400.00		99	84-108			
Duplicate (6090007-DUP1)						Source: AZH0981-01 Prepared & Analyzed: 09/01/16					
Total Dissolved Solids	127	25	10	mg/L		141			10	10	
Duplicate (6090007-DUP2)						Source: AZH0981-05 Prepared & Analyzed: 09/01/16					
Total Dissolved Solids	264	25	10	mg/L		254			4	10	
Batch 6090046 - SM 2540 C											
Blank (6090046-BLK1)						Prepared & Analyzed: 09/02/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6090046-BS1)						Prepared & Analyzed: 09/02/16					
Total Dissolved Solids	390	25	10	mg/L	400.00		98	84-108			
Duplicate (6090046-DUP1)						Source: AZH0947-02 Prepared & Analyzed: 09/02/16					
Total Dissolved Solids	1930	25	10	mg/L		1910			1	10	



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Report No.: AZH0983

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090013 - EPA 300.0											
Blank (6090013-BLK1)						Prepared: 09/01/16 Analyzed: 09/02/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
LCS (6090013-BS1)						Prepared: 09/01/16 Analyzed: 09/02/16					
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	10.2	1.0	0.05	mg/L	10.010		102	90-110			
Matrix Spike (6090013-MS1)						Source: AZH0961-03 Prepared: 09/01/16 Analyzed: 09/02/16					
Chloride	31.1	0.25	0.01	mg/L	10.010	23.0	81	90-110			QM-05
Fluoride	13.8	0.30	0.02	mg/L	10.010	0.14	137	90-110			QM-05
Sulfate	157	1.0	0.05	mg/L	10.010	164	NR	90-110			QM-05
Matrix Spike (6090013-MS2)						Source: AZH0983-03 Prepared: 09/01/16 Analyzed: 09/02/16					
Chloride	12.3	0.25	0.01	mg/L	10.010	1.97	103	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.010	0.20	107	90-110			
Sulfate	22.6	1.0	0.05	mg/L	10.010	13.6	90	90-110			
Matrix Spike Dup (6090013-MSD1)						Source: AZH0961-03 Prepared: 09/01/16 Analyzed: 09/02/16					
Chloride	30.4	0.25	0.01	mg/L	10.010	23.0	74	90-110	2	15	QM-05
Fluoride	12.8	0.30	0.02	mg/L	10.010	0.14	126	90-110	8	15	QM-05
Sulfate	156	1.0	0.05	mg/L	10.010	164	NR	90-110	0.7	15	QM-05



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Report No.: AZH0983

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090039 - EPA 3005A											
Blank (6090039-BLK1)						Prepared: 09/02/16 Analyzed: 09/03/16					
Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0005	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							
LCS (6090039-BS1)						Prepared & Analyzed: 09/02/16					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000		107	80-120			
Arsenic	0.0988	0.0050	0.0016	mg/L	0.10000		99	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.0950	0.0030	0.00008	mg/L	0.10000		95	80-120			
Boron	0.984	0.100	0.0064	mg/L	1.0000		98	80-120			
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000		100	80-120			
Calcium	0.943	0.500	0.0311	mg/L	1.0000		94	80-120			
Chromium	0.102	0.0100	0.0009	mg/L	0.10000		102	80-120			
Cobalt	0.0962	0.0100	0.0005	mg/L	0.10000		96	80-120			
Copper	0.0964	0.0050	0.0005	mg/L	0.10000		96	80-120			
Lead	0.103	0.0050	0.0001	mg/L	0.10000		103	80-120			
Molybdenum	0.100	0.0100	0.0017	mg/L	0.10000		100	80-120			
Nickel	0.0973	0.0050	0.0006	mg/L	0.10000		97	80-120			
Selenium	0.0984	0.0100	0.0010	mg/L	0.10000		98	80-120			
Silver	0.0996	0.0050	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.104	0.0010	0.0002	mg/L	0.10000		104	80-120			
Vanadium	0.0999	0.0100	0.0071	mg/L	0.10000		100	80-120			
Zinc	0.101	0.0100	0.0021	mg/L	0.10000		101	80-120			
Lithium	0.0964	0.0500	0.0021	mg/L	0.10000		96	80-120			



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September 08, 2016

Report No.: AZH0983

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090039 - EPA 3005A											
Matrix Spike (6090039-MS1)			Source: AZI0015-01			Prepared & Analyzed: 09/02/16					
Antimony	0.0992	0.0030	0.0008	mg/L	0.10000	ND	99	75-125			
Arsenic	0.313	0.0050	0.0016	mg/L	0.10000	0.212	101	75-125			
Barium	0.146	0.0100	0.0004	mg/L	0.10000	0.0498	96	75-125			
Beryllium	0.0763	0.0030	0.00008	mg/L	0.10000	ND	76	75-125			
Boron	1.22	0.100	0.0064	mg/L	1.0000	0.632	59	75-125			QM-02
Cadmium	0.0869	0.0010	0.00007	mg/L	0.10000	ND	87	75-125			
Calcium	81.8	5.00	0.311	mg/L	1.0000	82.8	NR	75-125			QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	0.0010	104	75-125			
Cobalt	0.0941	0.0100	0.0005	mg/L	0.10000	ND	94	75-125			
Copper	0.0827	0.0050	0.0005	mg/L	0.10000	ND	83	75-125			
Lead	0.0884	0.0050	0.0001	mg/L	0.10000	ND	88	75-125			
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000	ND	101	75-125			
Nickel	0.0867	0.0050	0.0006	mg/L	0.10000	ND	87	75-125			
Selenium	0.0380	0.0100	0.0010	mg/L	0.10000	0.0015	36	75-125			QM-05
Silver	0.0820	0.0050	0.0005	mg/L	0.10000	ND	82	75-125			
Thallium	0.0908	0.0010	0.0002	mg/L	0.10000	ND	91	75-125			
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125			
Zinc	0.0878	0.0100	0.0021	mg/L	0.10000	ND	88	75-125			
Lithium	0.116	0.0500	0.0021	mg/L	0.10000	0.0389	77	75-125			
Matrix Spike Dup (6090039-MSD1)			Source: AZI0015-01			Prepared & Analyzed: 09/02/16					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125	4	20	
Arsenic	0.314	0.0050	0.0016	mg/L	0.10000	0.212	102	75-125	0.2	20	
Barium	0.154	0.0100	0.0004	mg/L	0.10000	0.0498	104	75-125	5	20	
Beryllium	0.0784	0.0030	0.00008	mg/L	0.10000	ND	78	75-125	3	20	
Boron	1.29	0.100	0.0064	mg/L	1.0000	0.632	66	75-125	6	20	QM-02
Cadmium	0.0882	0.0010	0.00007	mg/L	0.10000	ND	88	75-125	1	20	
Calcium	83.2	5.00	0.311	mg/L	1.0000	82.8	44	75-125	2	20	QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0010	103	75-125	0.3	20	
Cobalt	0.0918	0.0100	0.0005	mg/L	0.10000	ND	92	75-125	2	20	
Copper	0.0829	0.0050	0.0005	mg/L	0.10000	ND	83	75-125	0.3	20	
Lead	0.0885	0.0050	0.0001	mg/L	0.10000	ND	88	75-125	0.1	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	4	20	
Nickel	0.0873	0.0050	0.0006	mg/L	0.10000	ND	87	75-125	0.7	20	
Selenium	0.0394	0.0100	0.0010	mg/L	0.10000	0.0015	38	75-125	4	20	QM-05
Silver	0.0858	0.0050	0.0005	mg/L	0.10000	ND	86	75-125	4	20	
Thallium	0.0923	0.0010	0.0002	mg/L	0.10000	ND	92	75-125	2	20	
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125	0.2	20	
Zinc	0.0872	0.0100	0.0021	mg/L	0.10000	ND	87	75-125	0.7	20	
Lithium	0.122	0.0500	0.0021	mg/L	0.10000	0.0389	83	75-125	5	20	



PACE ANALYTICAL SERVICES, INC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0983

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090039 - EPA 3005A											
Post Spike (6090039-PS1)				Source: AZI0015-01			Prepared & Analyzed: 09/02/16				
Antimony	94.7			ug/L	100.00	0.0900	95	80-120			
Arsenic	300			ug/L	100.00	212	88	80-120			
Barium	148			ug/L	100.00	49.8	98	80-120			
Beryllium	79.2			ug/L	100.00	0.0500	79	80-120			QM-05
Boron	1270			ug/L	1000.0	632	63	80-120			QM-02
Cadmium	85.5			ug/L	100.00	0.0100	85	80-120			
Calcium	78800			ug/L	1000.0	82800	NR	80-120			QM-02
Chromium	96.6			ug/L	100.00	1.04	96	80-120			
Cobalt	90.7			ug/L	100.00	0.402	90	80-120			
Copper	80.9			ug/L	100.00	0.155	81	80-120			
Lead	88.7			ug/L	100.00	0.0713	89	80-120			
Molybdenum	102			ug/L	100.00	0.877	101	80-120			
Nickel	84.7			ug/L	100.00	0.391	84	80-120			
Selenium	92.6			ug/L	100.00	1.51	91	80-120			
Silver	82.9			ug/L	100.00	-0.0178	83	80-120			
Thallium	92.1			ug/L	100.00	-0.0163	92	80-120			
Vanadium	108			ug/L	100.00	4.05	104	80-120			
Zinc	86.1			ug/L	100.00	1.52	85	80-120			
Lithium	120			ug/L	100.00	38.9	81	80-120			

Batch 6090041 - EPA 7470A

Blank (6090041-BLK1)				Prepared & Analyzed: 09/02/16							
Mercury	0.00004	0.00050	0.000041	mg/L							J
LCS (6090041-BS1)				Prepared & Analyzed: 09/02/16							
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3		99	80-120			



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0983

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090041 - EPA 7470A											
Matrix Spike (6090041-MS1)		Source: AZH0981-01				Prepared & Analyzed: 09/02/16					
Mercury	0.00254	0.00050	0.000041	mg/L	2.5000E-3	ND	102	75-125			
Matrix Spike Dup (6090041-MSD1)		Source: AZH0981-01				Prepared & Analyzed: 09/02/16					
Mercury	0.00251	0.00050	0.000041	mg/L	2.5000E-3	ND	101	75-125	1	20	
Post Spike (6090041-PS1)		Source: AZH0981-01				Prepared & Analyzed: 09/02/16					
Mercury	1.68			ug/L	1.6667	0.0265	99	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

September 08, 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-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 : www.asi-lab.com

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239 REPORT TO: Jojo Abraham CC: Maria Padilla Heath McConkie REQUESTED COMPLETION DATE: PO #: laburch@southernco.com PROJECT NAME/STATE: Plant Hammond AP 3&4 PROJECT #: Phase 2 - CCR		ANALYSIS REQUESTED CONTAINER TYPE: P P P PRESERVATION: 3 7 3 # of CONTAINERS: 3 4 3 3 Metals App. III & IV (EPA 6020/7470) Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)		CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION 1 - HCl, $\le 6^{\circ}\text{C}$ 2 - H ₂ SO ₄ , $\le 6^{\circ}\text{C}$ 3 - HNO ₃ 4 - NaOH, $\le 6^{\circ}\text{C}$ 5 - NaOH/ZnAc, $\le 6^{\circ}\text{C}$ 6 - Na ₂ S ₂ O ₃ , $\le 6^{\circ}\text{C}$ 7 - $\le 6^{\circ}\text{C}$ 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 8/30/16 8/30/16 8/30/16 8/30/16	COLLECTION TIME 13:16 14:25 15:45 16:20	MATRIX CODE* GW GW GW GW	SAMPLE IDENTIFICATION HGWA-111 HGWA-112 HGWA-113 HGWA-122	C O M P X X X X	L A B I D N U M B E R 1 2 3 4
SAMPLED BY AND TITLE: RECEIVED BY:		DATE/TIME: 8/30/2016 DATE/TIME:	RELINQUISHED BY: [Signature] RELINQUISHED BY:	DATE/TIME: 8/31/16 DATE/TIME:	LAB #: A 214 00183 Entered into LIMS: ct-y Tracking #:
RECEIVED BY LAB: [Signature] Temperature: 26 Min: 26 Max:		SAMPLE SHIPPED VIA: UPS Custody Seal: Intact Broken # of Coolers:	COURIER:	CLIENT:	OTHER: FS



PACE ANALYTICAL SERVICES, INC.

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

LOG-IN CHECKLIST

Printed: 9/8/2016 2:58:07PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/31/16 13:00

Work Order: AZH0983

Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 4

#Containers: 13

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 27, 2016

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 30194831

Dear Maria Padilla:

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

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

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4
Pace Project No.: 30194831

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 Hammond AP 3&4
Pace Project No.: 30194831

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30194831001	HGWA-111	Water	08/30/16 13:16	09/01/16 10:00
30194831002	HGWA-112	Water	08/30/16 14:25	09/01/16 10:00
30194831003	HGWA-113	Water	08/30/16 15:45	09/01/16 10:00
30194831004	HGWA-122	Water	08/30/16 16:20	09/01/16 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4
 Pace Project No.: 30194831

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30194831001	HGWA-111	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30194831002	HGWA-112	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30194831003	HGWA-113	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30194831004	HGWA-122	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 Hammond AP 3&4
 Pace Project No.: 30194831

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-111 Lab ID: 30194831001 Collected: 08/30/16 13:16 Received: 09/01/16 10:00 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.135 ± 0.181 (0.377) C:92% T:NA	pCi/L	09/10/16 11:05	13982-63-3	
Radium-228	EPA 9320	0.669 ± 0.406 (0.743) C:79% T:70%	pCi/L	09/14/16 02:50	15262-20-1	
Total Radium	Total Radium Calculation	0.804 ± 0.587 (1.12)	pCi/L	09/20/16 10:15	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-112 Lab ID: 30194831002 Collected: 08/30/16 14:25 Received: 09/01/16 10:00 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.261 ± 0.233 (0.425) C:77% T:NA	pCi/L	09/10/16 11:06	13982-63-3	
Radium-228	EPA 9320	1.06 ± 0.568 (1.01) C:75% T:54%	pCi/L	09/16/16 10:56	15262-20-1	
Total Radium	Total Radium Calculation	1.32 ± 0.801 (1.44)	pCi/L	09/20/16 10:15	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-113 Lab ID: 30194831003 Collected: 08/30/16 15:45 Received: 09/01/16 10:00 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	-0.0179 ± 0.162 (0.458) C:80% T:NA	pCi/L	09/10/16 11:06	13982-63-3	
Radium-228	EPA 9320	0.587 ± 0.503 (1.00) C:72% T:62%	pCi/L	09/16/16 10:56	15262-20-1	
Total Radium	Total Radium Calculation	0.587 ± 0.665 (1.46)	pCi/L	09/20/16 10:15	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-122 Lab ID: 30194831004 Collected: 08/30/16 16:20 Received: 09/01/16 10:00 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.0221 ± 0.261 (0.660) C:59% T:NA	pCi/L	09/10/16 11:06	13982-63-3	
Radium-228	EPA 9320	0.950 ± 0.407 (0.631) C:73% T:70%	pCi/L	09/14/16 02:52	15262-20-1	
Total Radium	Total Radium Calculation	0.972 ± 0.668 (1.29)	pCi/L	09/20/16 10:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
Pace Project No.: 30194831

QC Batch: 232325 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 30194831001, 30194831002, 30194831003, 30194831004

METHOD BLANK: 1138696 Matrix: Water
Associated Lab Samples: 30194831001, 30194831002, 30194831003, 30194831004

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
Pace Project No.: 30194831

QC Batch: 232397 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 30194831001, 30194831002, 30194831003, 30194831004

METHOD BLANK: 1138978 Matrix: Water
Associated Lab Samples: 30194831001, 30194831002, 30194831003, 30194831004

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 Hammond AP 3&4
Pace Project No.: 30194831

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: 30194831001

[1] The sampler's name and signature were not listed on the COC.

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 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Jolu Abrahams CC: Maria Padilla Heath McCorkle PO #: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond AP 384 PROJECT #: Phase 2 - CCR	
CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	PRESERVATION 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/H ₂ Ac, ≤6°C 6 - Na ₂ S ₂ O ₈ , ≤6°C 7 - ≤6°C not frozen	ANALYSIS REQUESTED P 3 P 7 P 3 Metals App. III & IV (EPA 6020/7470) Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)			
CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		PRESERVATION 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/H ₂ Ac, ≤6°C 6 - Na ₂ S ₂ O ₈ , ≤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		LABORATORY USE ONLY LAB #: <u>1300</u> DATE/TIME: <u>8/31/16</u> DATE/TIME: _____ RELINQUISHED BY: _____ RELINQUISHED BY: _____ SAMPLE SHIPPED VIA: _____ UPS FED-EX USPS COURIER CLIENT OTHER FS # of Coolers _____ Custody Seal: _____ Intact Broken			

WO#: 30194831

Received date/time
9-1-16 1000
Morgan

Sample Condition Upon Receipt Pittsburgh



Client Name: Georgia Power Project # 30194831

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

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

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

Temp should be above freezing to 6°C

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

Comments:	Yes	No	N/A	
Chain of Custody Present:	/	/		1.
Chain of Custody Filled Out:	/	/		2.
Chain of Custody Relinquished:	/	/		3.
Sampler Name & Signature on COC:	/	/		4. <u>not signed or printed printed</u>
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.
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>below 2 pH</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>9-1-16</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JLW
Date: 9/14/2016
Worklist: 31282
Matrix: DW

Method Blank Assessment	
MB Sample ID	1138978
MB Concentration:	0.619
MB 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
Count Date:	9/16/2016	LCS31282		LCS31282
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):	0.667			
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	30194831002	DUP
Duplicate Sample I.D.:	30194831002DUP	30194831002DUP	DUP
Sample Result (pCi/L, g, F):	1.068		
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:

Amprapad

Quality Control Sample Performance Assessment



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

Test: Ra-226
Analyst: WRR
Date: 9/9/2016
Worklist: 31262
Matrix: DW

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
LCSD/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

Duplicate Sample Assessment	
Sample I.D.:	30194831002
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
Ave sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	1.357
Duplicate RPD:	166.19%
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.

F. Miller
Caroline

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



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: AZI0019

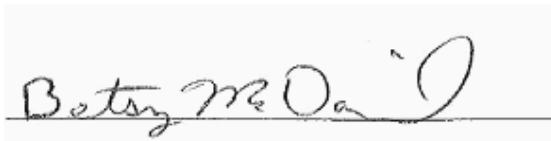
September 09, 2016

Project: CCR Event

Project #:Plant Hammond

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.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWC-117	AZI0019-01	Ground Water	08/31/16 10:40	09/01/16 09:25
HGWC-124	AZI0019-02	Ground Water	08/31/16 10:55	09/01/16 09:25
HGWC-118	AZI0019-03	Ground Water	08/31/16 11:25	09/01/16 09:25
HGWC-101	AZI0019-04	Ground Water	08/31/16 12:23	09/01/16 09:25
HGWC-103	AZI0019-05	Ground Water	08/31/16 12:55	09/01/16 09:25
HGWC-120	AZI0019-06	Ground Water	08/31/16 13:10	09/01/16 09:25
FB-1	AZI0019-07	DI Water	08/31/16 13:40	09/01/16 09:25
HGWC-105	AZI0019-08	Ground Water	08/31/16 14:15	09/01/16 09:25
HGWC-107	AZI0019-09	Ground Water	08/31/16 14:42	09/01/16 09:25
HGWC-121	AZI0019-10	Ground Water	08/31/16 15:10	09/01/16 09:25
HGWC-109	AZI0019-11	Ground Water	08/31/16 15:24	09/01/16 09:25
FERB-1	AZI0019-12	DI Water	08/31/16 16:15	09/01/16 09:25
Dup-1	AZI0019-13	Ground Water	08/31/16 00:00	09/01/16 09:25



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-117

Lab Number ID: AZI0019-01

Date/Time Sampled: 8/31/2016 10:40:00AM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	381	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
Inorganic Anions											
Chloride	7.1	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/03/16 23:32	6090083	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/03/16 23:32	6090083	RLC
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	09/03/16 09:59	09/05/16 12:27	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:26	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Barium	0.0547	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Boron	0.821	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Cadmium	0.0008	0.0010	0.00007	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Calcium	63.4	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 15:45	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Cobalt	0.0035	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Lithium	0.0024	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:10	6090063	CSW
Mercury	0.00007	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	09/02/16 08:45	09/02/16 14:36	6090042	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-124

Lab Number ID: AZI0019-02

Date/Time Sampled: 8/31/2016 10:55:00AM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	379	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
Inorganic Anions											
Chloride	3.0	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/03/16 23:52	6090083	RLC
Fluoride	0.15	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/03/16 23:52	6090083	RLC
Sulfate	72	5.0	0.26	mg/L	EPA 300.0		5	09/03/16 09:59	09/05/16 12:47	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:32	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Barium	0.0744	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Boron	0.494	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Calcium	90.4	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 15:51	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:16	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:43	6090042	MTC



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 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-118

Lab Number ID: AZI0019-03

Date/Time Sampled: 8/31/2016 11:25:00AM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	373	25	10	mg/L	SM 2540 C		1	09/07/16 14:20	09/07/16 14:20	6090156	JPT
Inorganic Anions											
Chloride	4.5	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 00:13	6090083	RLC
Fluoride	0.18	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 00:13	6090083	RLC
Sulfate	88	5.0	0.26	mg/L	EPA 300.0		5	09/03/16 09:59	09/05/16 13:08	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:37	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Barium	0.0595	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Boron	0.681	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Calcium	79.3	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 16:10	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:22	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:46	6090042	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-101

Lab Number ID: AZI0019-04

Date/Time Sampled: 8/31/2016 12:23:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	278	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	5.7	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 00:33	6090083	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 00:33	6090083	RLC
Sulfate	110	10	0.51	mg/L	EPA 300.0		10	09/03/16 09:59	09/05/16 13:29	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:42	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Barium	0.0527	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Boron	0.0724	0.100	0.0064	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Calcium	19.4	2.50	0.155	mg/L	EPA 6020B		5	09/02/16 12:40	09/06/16 16:16	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Cobalt	0.0033	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:27	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:48	6090042	MTC



PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-103

Lab Number ID: AZI0019-05

Date/Time Sampled: 8/31/2016 12:55:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	483	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	5.2	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 00:54	6090083	RLC
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 00:54	6090083	RLC
Sulfate	280	20	1.0	mg/L	EPA 300.0		20	09/03/16 09:59	09/05/16 13:49	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:48	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Barium	0.0450	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Boron	2.22	1.00	0.0642	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 16:22	6090063	CSW
Cadmium	0.0006	0.0010	0.00007	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Calcium	70.4	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 16:22	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Cobalt	0.0018	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:33	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:50	6090042	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-120

Lab Number ID: AZI0019-06

Date/Time Sampled: 8/31/2016 1:10:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	700	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	3.5	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 01:15	6090083	RLC
Fluoride	0.65	0.30	0.02	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 01:15	6090083	RLC
Sulfate	290	20	1.0	mg/L	EPA 300.0		20	09/03/16 09:59	09/05/16 14:10	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:53	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Barium	0.0450	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Boron	0.981	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Calcium	152	25.0	1.55	mg/L	EPA 6020B		50	09/02/16 12:40	09/06/16 16:27	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Cobalt	0.0052	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Molybdenum	0.0176	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Lithium	0.0333	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:39	6090063	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	09/02/16 08:45	09/02/16 14:53	6090042	MTC



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 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: FB-1

Lab Number ID: AZI0019-07

Date/Time Sampled: 8/31/2016 1:40:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: DI Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	0.08	0.25	0.01	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 02:17	6090083	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 02:17	6090083	RLC
Sulfate	0.11	1.0	0.05	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 02:17	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 17:58	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Calcium	0.0551	0.500	0.0311	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 23:56	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:18	6090077	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-105

Lab Number ID: AZI0019-08

Date/Time Sampled: 8/31/2016 2:15:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	389	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	3.0	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 02:37	6090083	RLC
Fluoride	0.15	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 02:37	6090083	RLC
Sulfate	190	10	0.51	mg/L	EPA 300.0		10	09/03/16 09:59	09/05/16 14:31	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 18:03	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Barium	0.0670	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Boron	1.14	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Calcium	74.2	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 17:07	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Cobalt	0.0014	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Lithium	0.0034	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/03/16 00:02	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:20	6090077	MTC



PACE ANALYTICAL SERVICES, INC.

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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-107

Lab Number ID: AZI0019-09

Date/Time Sampled: 8/31/2016 2:42:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	235	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	3.2	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 04:23	6090083	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 04:23	6090083	RLC
Sulfate	130	5.0	0.26	mg/L	EPA 300.0		5	09/03/16 09:59	09/05/16 14:51	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 18:09	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Barium	0.0391	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Boron	0.651	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Cadmium	0.0001	0.0010	0.00007	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Calcium	44.7	2.50	0.155	mg/L	EPA 6020B		5	09/02/16 12:40	09/06/16 16:39	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:07	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:23	6090077	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-121

Lab Number ID: AZI0019-10

Date/Time Sampled: 8/31/2016 3:10:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	876	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	64	2.5	0.14	mg/L	EPA 300.0		10	09/03/16 09:59	09/05/16 15:12	6090083	RLC
Fluoride	0.14	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 04:45	6090083	RLC
Sulfate	280	10	0.51	mg/L	EPA 300.0		10	09/03/16 09:59	09/05/16 15:12	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 18:14	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Barium	0.0782	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Boron	3.23	2.00	0.321	mg/L	EPA 6020B		50	09/02/16 12:40	09/06/16 16:44	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Calcium	178	25.0	1.55	mg/L	EPA 6020B		50	09/02/16 12:40	09/06/16 16:44	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Lithium	0.0077	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/03/16 00:13	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:25	6090077	MTC



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

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: HGWC-109

Lab Number ID: AZI0019-11

Date/Time Sampled: 8/31/2016 3:24:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	182	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	5.0	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 05:06	6090083	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 05:06	6090083	RLC
Sulfate	36	1.0	0.05	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 05:06	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 18:30	6090063	CSW
Arsenic	0.0045	0.0050	0.0016	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Barium	0.0883	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Boron	0.402	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Calcium	35.1	2.50	0.155	mg/L	EPA 6020B		5	09/02/16 12:40	09/06/16 16:50	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Cobalt	0.0023	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 00:19	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:27	6090077	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AZI0019-12

Date/Time Sampled: 8/31/2016 4:15:00PM

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: DI Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	0.06	0.25	0.01	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 05:27	6090083	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 05:27	6090083	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 05:27	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Boron	0.105	0.100	0.0064	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Calcium	0.0523	0.500	0.0311	mg/L	EPA 6020B	J	1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:15	6090081	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:34	6090077	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AZI0019-13

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

Date/Time Received: 9/1/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	476	25	10	mg/L	SM 2540 C		1	09/06/16 19:00	09/06/16 19:00	6090102	JPT
Inorganic Anions											
Chloride	5.3	0.25	0.01	mg/L	EPA 300.0		1	09/03/16 09:59	09/04/16 10:45	6090083	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	09/03/16 09:59	09/04/16 10:45	6090083	RLC
Sulfate	280	10	0.51	mg/L	EPA 300.0		10	09/03/16 09:59	09/05/16 16:55	6090083	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Barium	0.0441	0.0100	0.0004	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/06/16 09:45	09/07/16 17:42	6090081	CSW
Boron	2.12	0.500	0.0321	mg/L	EPA 6020B		5	09/06/16 09:45	09/08/16 13:21	6090081	CSW
Cadmium	0.0006	0.0010	0.00007	mg/L	EPA 6020B	J	1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Calcium	65.2	5.00	0.311	mg/L	EPA 6020B		10	09/06/16 09:45	09/08/16 15:43	6090081	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Cobalt	0.0018	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Selenium	0.0011	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/06/16 09:45	09/06/16 18:21	6090081	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	09/06/16 09:45	09/08/16 13:21	6090081	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/06/16 09:10	09/06/16 14:37	6090077	MTC



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Report No.: AZI0019

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090101 - SM 2540 C											
Blank (6090101-BLK1)						Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6090101-BS1)						Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	393	25	10	mg/L	400.00		98	84-108			
Duplicate (6090101-DUP1)						Source: AZI0015-02 Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	3870	25	10	mg/L		3860			0.2	10	
Duplicate (6090101-DUP2)						Source: AZI0018-04 Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	80	25	10	mg/L		122			42	10	QR-03
Batch 6090102 - SM 2540 C											
Blank (6090102-BLK1)						Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6090102-BS1)						Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	398	25	10	mg/L	400.00		100	84-108			
Duplicate (6090102-DUP1)						Source: AZI0019-08 Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	366	25	10	mg/L		389			6	10	
Duplicate (6090102-DUP2)						Source: AZI0022-01 Prepared & Analyzed: 09/06/16					
Total Dissolved Solids	3490	25	10	mg/L		3460			0.9	10	
Batch 6090156 - SM 2540 C											
Blank (6090156-BLK1)						Prepared & Analyzed: 09/07/16					
Total Dissolved Solids	ND	25	10	mg/L							



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September 09, 2016

Report No.: AZI0019

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090156 - SM 2540 C											
LCS (6090156-BS1)						Prepared & Analyzed: 09/07/16					
Total Dissolved Solids	398	25	10	mg/L	400.00		100	84-108			
Duplicate (6090156-DUP1)						Source: AZI0050-01 Prepared & Analyzed: 09/07/16					
Total Dissolved Solids	4530	25	10	mg/L		4540			0.3	10	



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September 09, 2016

Report No.: AZI0019

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090083 - EPA 300.0											
Blank (6090083-BLK1)						Prepared & Analyzed: 09/03/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
LCS (6090083-BS1)						Prepared & Analyzed: 09/03/16					
Chloride	10.1	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	10.2	1.0	0.05	mg/L	10.010		101	90-110			
Matrix Spike (6090083-MS1)						Source: AZI0019-06			Prepared: 09/03/16 Analyzed: 09/04/16		
Chloride	13.6	0.25	0.01	mg/L	10.010	3.52	100	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.010	0.65	103	90-110			
Sulfate	207	1.0	0.05	mg/L	10.010	217	NR	90-110			QM-02
Matrix Spike (6090083-MS2)						Source: AZI0020-02			Prepared: 09/03/16 Analyzed: 09/04/16		
Chloride	17.1	0.25	0.01	mg/L	10.010	6.74	103	90-110			
Fluoride	11.1	0.30	0.02	mg/L	10.010	0.07	110	90-110			
Sulfate	85.3	1.0	0.05	mg/L	10.010	84.2	11	90-110			QM-05
Matrix Spike Dup (6090083-MSD1)						Source: AZI0019-06			Prepared: 09/03/16 Analyzed: 09/04/16		
Chloride	13.7	0.25	0.01	mg/L	10.010	3.52	101	90-110	0.6	15	
Fluoride	11.0	0.30	0.02	mg/L	10.010	0.65	103	90-110	0.8	15	
Sulfate	207	1.0	0.05	mg/L	10.010	217	NR	90-110	0.09	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
Batch 6090042 - EPA 7470A											
Blank (6090042-BLK1)						Prepared & Analyzed: 09/02/16					
Mercury	0.00004	0.00050	0.000041	mg/L							J
LCS (6090042-BS1)						Prepared & Analyzed: 09/02/16					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
Matrix Spike (6090042-MS1)						Source: AZI0015-02			Prepared & Analyzed: 09/02/16		
Mercury	0.00218	0.00050	0.000041	mg/L	2.5000E-3	ND	87	75-125			
Matrix Spike Dup (6090042-MSD1)						Source: AZI0015-02			Prepared & Analyzed: 09/02/16		
Mercury	0.00215	0.00050	0.000041	mg/L	2.5000E-3	ND	86	75-125	1	20	
Post Spike (6090042-PS1)						Source: AZI0015-02			Prepared & Analyzed: 09/02/16		
Mercury	1.58			ug/L	1.6667	0.0259	93	80-120			
Batch 6090063 - EPA 3005A											
Blank (6090063-BLK1)						Prepared: 09/02/16 Analyzed: 09/03/16					
Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							



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Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090063 - EPA 3005A											
LCS (6090063-BS1)						Prepared & Analyzed: 09/02/16					
Antimony	0.106	0.0030	0.0008	mg/L	0.10000		106	80-120			
Arsenic	0.0977	0.0050	0.0016	mg/L	0.10000		98	80-120			
Barium	0.0953	0.0100	0.0004	mg/L	0.10000		95	80-120			
Beryllium	0.0878	0.0030	0.00008	mg/L	0.10000		88	80-120			
Boron	0.901	0.100	0.0064	mg/L	1.0000		90	80-120			
Cadmium	0.0994	0.0010	0.00007	mg/L	0.10000		99	80-120			
Calcium	0.963	0.500	0.0311	mg/L	1.0000		96	80-120			
Chromium	0.0995	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.0958	0.0100	0.0005	mg/L	0.10000		96	80-120			
Copper	0.0944	0.0050	0.0005	mg/L	0.10000		94	80-120			
Lead	0.0976	0.0050	0.0001	mg/L	0.10000		98	80-120			
Molybdenum	0.0993	0.0100	0.0017	mg/L	0.10000		99	80-120			
Nickel	0.0949	0.0050	0.0006	mg/L	0.10000		95	80-120			
Selenium	0.101	0.0100	0.0010	mg/L	0.10000		101	80-120			
Silver	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.0979	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.0982	0.0100	0.0071	mg/L	0.10000		98	80-120			
Zinc	0.0982	0.0100	0.0021	mg/L	0.10000		98	80-120			
Lithium	0.0890	0.0500	0.0021	mg/L	0.10000		89	80-120			
Matrix Spike (6090063-MS1)											
Source: AZI0015-03						Prepared & Analyzed: 09/02/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125			
Barium	0.130	0.0100	0.0004	mg/L	0.10000	0.0289	101	75-125			
Beryllium	0.0763	0.0030	0.00008	mg/L	0.10000	ND	76	75-125			
Boron	1.20	0.100	0.0064	mg/L	1.0000	0.560	64	75-125			QM-02
Cadmium	0.0936	0.0010	0.00007	mg/L	0.10000	ND	94	75-125			
Calcium	64.9	5.00	0.311	mg/L	1.0000	65.0	NR	75-125			QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	0.0013	107	75-125			
Cobalt	0.0979	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Copper	0.0877	0.0050	0.0005	mg/L	0.10000	ND	88	75-125			
Lead	0.0905	0.0050	0.0001	mg/L	0.10000	ND	90	75-125			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	ND	109	75-125			
Nickel	0.0920	0.0050	0.0006	mg/L	0.10000	ND	92	75-125			
Selenium	0.0440	0.0100	0.0010	mg/L	0.10000	0.0020	42	75-125			QM-05
Silver	0.0878	0.0050	0.0005	mg/L	0.10000	ND	88	75-125			
Thallium	0.0940	0.0010	0.0002	mg/L	0.10000	ND	94	75-125			
Vanadium	0.122	0.0100	0.0071	mg/L	0.10000	ND	122	75-125			
Zinc	0.0911	0.0100	0.0021	mg/L	0.10000	ND	91	75-125			
Lithium	0.103	0.0500	0.0021	mg/L	0.10000	0.0219	81	75-125			



PACE ANALYTICAL SERVICES, INC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090063 - EPA 3005A											
Matrix Spike Dup (6090063-MSD1)			Source: AZI0015-03			Prepared & Analyzed: 09/02/16					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	2	20	
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125	0.5	20	
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0289	98	75-125	2	20	
Beryllium	0.0745	0.0030	0.00008	mg/L	0.10000	ND	74	75-125	2	20	QM-05
Boron	1.15	0.100	0.0064	mg/L	1.0000	0.560	59	75-125	5	20	QM-02
Cadmium	0.0896	0.0010	0.00007	mg/L	0.10000	ND	90	75-125	4	20	
Calcium	58.7	5.00	0.311	mg/L	1.0000	65.0	NR	75-125	10	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	0.0013	106	75-125	0.2	20	
Cobalt	0.0961	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Copper	0.0884	0.0050	0.0005	mg/L	0.10000	ND	88	75-125	0.8	20	
Lead	0.0869	0.0050	0.0001	mg/L	0.10000	ND	87	75-125	4	20	
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125	4	20	
Nickel	0.0900	0.0050	0.0006	mg/L	0.10000	ND	90	75-125	2	20	
Selenium	0.0527	0.0100	0.0010	mg/L	0.10000	0.0020	51	75-125	18	20	QM-05
Silver	0.0855	0.0050	0.0005	mg/L	0.10000	ND	85	75-125	3	20	
Thallium	0.0894	0.0010	0.0002	mg/L	0.10000	ND	89	75-125	5	20	
Vanadium	0.118	0.0100	0.0071	mg/L	0.10000	ND	118	75-125	3	20	
Zinc	0.0920	0.0100	0.0021	mg/L	0.10000	ND	92	75-125	1	20	
Lithium	0.0984	0.0500	0.0021	mg/L	0.10000	0.0219	77	75-125	4	20	
Post Spike (6090063-PS1)			Source: AZI0015-03			Prepared & Analyzed: 09/02/16					
Antimony	98.9			ug/L	100.00	0.0800	99	80-120			
Arsenic	101			ug/L	100.00	1.53	99	80-120			
Barium	127			ug/L	100.00	28.9	98	80-120			
Beryllium	74.5			ug/L	100.00	0.0207	74	80-120			QM-05
Boron	1160			ug/L	1000.0	560	60	80-120			QM-02
Cadmium	92.6			ug/L	100.00	0.0183	93	80-120			
Calcium	61300			ug/L	1000.0	65000	NR	80-120			QM-02
Chromium	104			ug/L	100.00	1.25	102	80-120			
Cobalt	95.2			ug/L	100.00	0.401	95	80-120			
Copper	85.0			ug/L	100.00	0.195	85	80-120			
Lead	87.6			ug/L	100.00	0.0431	88	80-120			
Molybdenum	108			ug/L	100.00	0.480	108	80-120			
Nickel	92.6			ug/L	100.00	0.329	92	80-120			
Selenium	99.2			ug/L	100.00	2.03	97	80-120			
Silver	87.8			ug/L	100.00	0.0021	88	80-120			
Thallium	91.5			ug/L	100.00	0.0702	91	80-120			
Vanadium	115			ug/L	100.00	6.20	109	80-120			
Zinc	91.9			ug/L	100.00	1.01	91	80-120			
Lithium	102			ug/L	100.00	21.9	80	80-120			



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090077 - EPA 7470A											
Blank (6090077-BLK1)						Prepared & Analyzed: 09/06/16					
Mercury	ND	0.00050	0.000041	mg/L							
LCS (6090077-BS1)						Prepared & Analyzed: 09/06/16					
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
Matrix Spike (6090077-MS1)						Source: AZI0021-02 Prepared & Analyzed: 09/06/16					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
Matrix Spike Dup (6090077-MSD1)						Source: AZI0021-02 Prepared & Analyzed: 09/06/16					
Mercury	0.00234	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	0.5	20	
Post Spike (6090077-PS1)						Source: AZI0021-02 Prepared & Analyzed: 09/06/16					
Mercury	1.67			ug/L	1.6667	0.00498	100	80-120			
Batch 6090081 - EPA 3005A											
Blank (6090081-BLK1)						Prepared & Analyzed: 09/06/16					
Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							



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September 09, 2016

Report No.: AZI0019

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090081 - EPA 3005A											
LCS (6090081-BS1)						Prepared & Analyzed: 09/06/16					
Antimony	0.0970	0.0030	0.0008	mg/L	0.10000		97	80-120			
Arsenic	0.0990	0.0050	0.0016	mg/L	0.10000		99	80-120			
Barium	0.0955	0.0100	0.0004	mg/L	0.10000		96	80-120			
Beryllium	0.0976	0.0030	0.00008	mg/L	0.10000		98	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.0949	0.0010	0.00007	mg/L	0.10000		95	80-120			
Calcium	0.972	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.0993	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.0967	0.0050	0.0001	mg/L	0.10000		97	80-120			
Molybdenum	0.0997	0.0100	0.0017	mg/L	0.10000		100	80-120			
Nickel	0.0986	0.0050	0.0006	mg/L	0.10000		99	80-120			
Selenium	0.0997	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.0965	0.0050	0.0005	mg/L	0.10000		96	80-120			
Thallium	0.0975	0.0010	0.0002	mg/L	0.10000		97	80-120			
Vanadium	0.112	0.0100	0.0071	mg/L	0.10000		112	80-120			
Zinc	0.112	0.0100	0.0021	mg/L	0.10000		112	80-120			
Lithium	0.0988	0.0500	0.0021	mg/L	0.10000		99	80-120			
Matrix Spike (6090081-MS1)											
				Source: AZI0022-01		Prepared & Analyzed: 09/06/16					
Antimony	0.0998	0.0030	0.0008	mg/L	0.10000	0.0014	98	75-125			
Arsenic	0.116	0.0050	0.0016	mg/L	0.10000	0.0144	102	75-125			
Barium	0.161	0.0100	0.0004	mg/L	0.10000	0.0627	98	75-125			
Beryllium	0.0842	0.0030	0.00008	mg/L	0.10000	0.0004	84	75-125			
Boron	25.9	5.00	0.321	mg/L	1.0000	24.1	179	75-125			QM-02
Cadmium	0.0937	0.0010	0.00007	mg/L	0.10000	ND	94	75-125			
Calcium	261	25.0	1.55	mg/L	1.0000	250	NR	75-125			QM-02
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0021	108	75-125			
Cobalt	0.109	0.0100	0.0005	mg/L	0.10000	0.0089	100	75-125			
Copper	0.0954	0.0050	0.0005	mg/L	0.10000	0.0006	95	75-125			
Lead	0.0996	0.0050	0.0001	mg/L	0.10000	0.0113	88	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.0995	0.0050	0.0006	mg/L	0.10000	0.0037	96	75-125			
Selenium	0.109	0.0100	0.0010	mg/L	0.10000	0.0023	106	75-125			
Silver	0.0892	0.0050	0.0005	mg/L	0.10000	ND	89	75-125			
Thallium	0.0921	0.0010	0.0002	mg/L	0.10000	ND	92	75-125			
Vanadium	0.121	0.0100	0.0071	mg/L	0.10000	ND	121	75-125			
Zinc	5.05	0.0100	0.0021	mg/L	0.10000	4.92	131	75-125			
Lithium	0.0898	0.0500	0.0021	mg/L	0.10000	ND	90	75-125			



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0019

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090081 - EPA 3005A											
Matrix Spike Dup (6090081-MSD1)			Source: AZI0022-01			Prepared & Analyzed: 09/06/16					
Antimony	0.0987	0.0030	0.0008	mg/L	0.10000	0.0014	97	75-125	1	20	
Arsenic	0.118	0.0050	0.0016	mg/L	0.10000	0.0144	104	75-125	2	20	
Barium	0.159	0.0100	0.0004	mg/L	0.10000	0.0627	96	75-125	1	20	
Beryllium	0.0882	0.0030	0.00008	mg/L	0.10000	0.0004	88	75-125	5	20	
Boron	24.3	5.00	0.321	mg/L	1.0000	24.1	13	75-125	7	20	QM-02
Cadmium	0.0909	0.0010	0.00007	mg/L	0.10000	ND	91	75-125	3	20	
Calcium	249	25.0	1.55	mg/L	1.0000	250	NR	75-125	5	20	QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0021	102	75-125	6	20	
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	0.0089	97	75-125	4	20	
Copper	0.0890	0.0050	0.0005	mg/L	0.10000	0.0006	88	75-125	7	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	0.0113	90	75-125	1	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0967	0.0050	0.0006	mg/L	0.10000	0.0037	93	75-125	3	20	
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	0.0023	102	75-125	4	20	
Silver	0.0874	0.0050	0.0005	mg/L	0.10000	ND	87	75-125	2	20	
Thallium	0.0943	0.0010	0.0002	mg/L	0.10000	ND	94	75-125	2	20	
Vanadium	0.118	0.0100	0.0071	mg/L	0.10000	ND	118	75-125	3	20	
Zinc	4.91	0.0100	0.0021	mg/L	0.10000	4.92	NR	75-125	3	20	
Lithium	0.0956	0.0500	0.0021	mg/L	0.10000	ND	96	75-125	6	20	
Post Spike (6090081-PS1)											
Source: AZI0022-01			Prepared & Analyzed: 09/06/16								
Antimony	99.1			ug/L	100.00	1.42	98	80-120			
Arsenic	115			ug/L	100.00	14.4	101	80-120			
Barium	158			ug/L	100.00	62.7	95	80-120			
Beryllium	85.8			ug/L	100.00	0.382	85	80-120			
Boron	24500			ug/L	1000.0	24100	36	80-120			QM-02
Cadmium	89.6			ug/L	100.00	0.0388	90	80-120			
Calcium	243000			ug/L	1000.0	250000	NR	80-120			QM-02
Chromium	105			ug/L	100.00	2.07	103	80-120			
Cobalt	106			ug/L	100.00	8.86	97	80-120			
Copper	89.8			ug/L	100.00	0.564	89	80-120			
Lead	100			ug/L	100.00	11.3	89	80-120			
Molybdenum	104			ug/L	100.00	0.165	103	80-120			
Nickel	96.1			ug/L	100.00	3.70	92	80-120			
Selenium	104			ug/L	100.00	2.29	102	80-120			
Silver	86.3			ug/L	100.00	0.0004	86	80-120			
Thallium	91.4			ug/L	100.00	0.141	91	80-120			
Vanadium	118			ug/L	100.00	4.37	114	80-120			
Zinc	4920			ug/L	100.00	4920	NR	80-120			
Lithium	99.7			ug/L	100.00	1.36	98	80-120			



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Georgia Power
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Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 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

- 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.



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

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power		CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-508-7239	
REPORT TO: Joju Abraham	CC: Maria Padilla Heath McCorkle	PO #:	laburch@southernco.com
REQUESTED COMPLETION DATE:		PROJECT NAME/STATE: Plant Hammond AP 3&4	
PROJECT #: Phase 2 - CCR			
Collection DATE	Collection TIME	MATRIX CODE*	SAMPLE IDENTIFICATION
8/31/16	10:40	GW	X HGWC-117
8/31/16	10:55	GW	X HGWC-124
8/31/16	11:25	GW	X HGWC-118
8/31/16	12:23	GW	X HGWC-101
8/31/16	12:55	GW	X HGWC-103
8/31/16	13:10	GW	X HGWC-120
8/31/16	13:40	W	X FRB-1
8/31/16	14:15	GW	X HGWC-105
8/31/16	14:42	GW	X HGWC-107
8/31/16	15:10	GW	X HGWC-121
8/31/16	15:24	GW	X HGWC-109
8/31/16	16:15	W	X FRB-1
SAMPLED BY AND TITLE: EGAL-N.R. / M.T. / EPL SERVICES - T.W.			
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 17:00			
RECEIVED BY LAB: [Signature] DATE/TIME: 9/1/16 7:11			
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 0925			
Lab #	NA	Yes	No
Lab #	NA	Yes	No
DATE/TIME: 8/31/16 17:00			
DATE/TIME: 9/1/16 7:11			
DATE/TIME: 8/31/16 0925			
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 0925			
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 0925			
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 0925			
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 0925			

CHAIN OF CUSTODY RECORD



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

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239 REPORT TO: Jolu Abraham REQUESTED COMPLETION DATE: laburch@southerncco.com PROJECT NAME/STATE: Plant Hammond AP 3&4 PROJECT #: Phase 2 - CCR		ANALYSIS REQUESTED P 3 P 7 P 3 Radium 226 & 228 (SW-846 9315/9320) Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Metals App. III & IV (EPA 6020/7470)		CONTAINER TYPE PRESERVATION # of CONTAINERS → 3		CONTAINER TYPE PRESERVATION P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		*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	
RECEIVED BY LAB: [Signature] DATE/TIME: 8/31/16 17:00		RELINQUISHED BY: [Signature] DATE/TIME: 9/1/2016 07:11		LAB #: A210019		FOR LAB USE ONLY		Entered into LIMS: [Signature]		Tracking #:	
RECEIVED BY: [Signature] DATE/TIME: 9/1/16 7:11		RELINQUISHED BY: [Signature]		DATE/TIME: 9/1/2016 07:11		DATE/TIME: 9/1/2016 07:11		CLIENT: Courier		OTHER: FS	
RECEIVED BY: [Signature] DATE/TIME: 8/31/16 09:25		RELINQUISHED BY: [Signature]		DATE/TIME: 8/31/16 17:00		DATE/TIME: 9/1/16 7:11		CLIENT: Courier		OTHER: FS	
TEMPERATURE: 20°C (Yes No NA) (Min Max)		TEMPERATURE: 20°C (Yes No NA) (Min Max)		TEMPERATURE: 20°C (Yes No NA) (Min Max)		TEMPERATURE: 20°C (Yes No NA) (Min Max)		TEMPERATURE: 20°C (Yes No NA) (Min Max)		TEMPERATURE: 20°C (Yes No NA) (Min Max)	



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LOG-IN CHECKLIST

Printed: 9/9/2016 5:55:12PM

Attn: Mr. Joju Abraham

Client: Georgia Power
Project: CCR Event
Date Received: 09/01/16 09:25

Work Order: AZI0019
Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 13 #Containers: 39
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:



October 04, 2016

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 30195007

Dear Maria Padilla:

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

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

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4
Pace Project No.: 30195007

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 Hammond AP 3&4
Pace Project No.: 30195007

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30195007001	HGWC-117	Water	08/31/16 10:40	09/02/16 10:20
30195007002	HGWC-124	Water	08/31/16 10:55	09/02/16 10:20
30195007004	HGWC-101	Water	08/31/16 12:23	09/02/16 10:20
30195007005	HGWC-120	Water	08/31/16 13:10	09/02/16 10:20
30195007006	FB-1	Water	08/31/16 13:40	09/02/16 10:20
30195007007	HGWC-105	Water	08/31/16 14:15	09/02/16 10:20
30195007008	HGWC-107	Water	08/31/16 14:42	09/02/16 10:20
30195007009	HGWC-121	Water	08/31/16 15:10	09/02/16 10:20
30195007010	HGWC-109	Water	08/31/16 15:24	09/02/16 10:20
30195007011	FERB-1	Water	08/31/16 16:15	09/02/16 10:20
30195007012	DUP-1	Water	08/31/16 00:01	09/02/16 10:20
30195007013	HGWC-103	Water	08/31/16 12:55	09/02/16 10:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30195007001	HGWC-117	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007002	HGWC-124	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007004	HGWC-101	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007005	HGWC-120	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007006	FB-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007007	HGWC-105	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007008	HGWC-107	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007009	HGWC-121	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007010	HGWC-109	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007011	FERB-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007012	DUP-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195007013	HGWC-103	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Plant Hammond AP 3&4
Pace Project No.: 30195007

Date: October 04, 2016

Sample 30195007003 could not be analyzed due to the low volume received.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Plant Hammond AP 3&4
Pace Project No.: 30195007

Method: EPA 9315
Description: 9315 Total Radium
Client: Pace Analytical Services, Inc. Atlanta
Date: October 04, 2016

General Information:

12 samples were analyzed for EPA 9315. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Plant Hammond AP 3&4

Pace Project No.: 30195007

Method: EPA 9320

Description: 9320 Radium 228

Client: Pace Analytical Services, Inc. Atlanta

Date: October 04, 2016

General Information:

12 samples were analyzed for EPA 9320. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Plant Hammond AP 3&4

Pace Project No.: 30195007

Method: Total Radium Calculation

Description: Total Radium 228+226

Client: Pace Analytical Services, Inc. Atlanta

Date: October 04, 2016

General Information:

12 samples were analyzed for Total Radium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

Sample: HGWC-117		Lab ID: 30195007001	Collected: 08/31/16 10:40	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.123 ± 0.160 (0.336)		pCi/L	09/14/16 11:31	13982-63-3	
		C:91% T:NA					
Radium-228	EPA 9320	0.996 ± 0.441 (0.732)		pCi/L	09/23/16 01:43	15262-20-1	
		C:75% T:77%					
Total Radium	Total Radium Calculation	1.12 ± 0.601 (1.07)		pCi/L	09/23/16 13:04	7440-14-4	

Sample: HGWC-124		Lab ID: 30195007002	Collected: 08/31/16 10:55	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0330 ± 0.112 (0.265)		pCi/L	09/14/16 11:31	13982-63-3	
		C:87% T:NA					
Radium-228	EPA 9320	1.19 ± 0.502 (0.814)		pCi/L	09/23/16 01:43	15262-20-1	
		C:70% T:73%					
Total Radium	Total Radium Calculation	1.22 ± 0.614 (1.08)		pCi/L	09/23/16 13:04	7440-14-4	

Sample: HGWC-101		Lab ID: 30195007004	Collected: 08/31/16 12:23	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.233 ± 0.169 (0.299)		pCi/L	09/14/16 11:32	13982-63-3	
		C:86% T:NA					
Radium-228	EPA 9320	0.388 ± 0.392 (0.791)		pCi/L	09/23/16 01:43	15262-20-1	
		C:69% T:80%					
Total Radium	Total Radium Calculation	0.621 ± 0.561 (1.09)		pCi/L	09/23/16 13:04	7440-14-4	

Sample: HGWC-120		Lab ID: 30195007005	Collected: 08/31/16 13:10	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.274 ± 0.161 (0.252)		pCi/L	09/14/16 11:32	13982-63-3	
		C:82% T:NA					
Radium-228	EPA 9320	1.20 ± 0.453 (0.693)		pCi/L	09/23/16 01:43	15262-20-1	
		C:80% T:76%					
Total Radium	Total Radium Calculation	1.47 ± 0.614 (0.945)		pCi/L	09/23/16 13:04	7440-14-4	

Sample: FB-1		Lab ID: 30195007006	Collected: 08/31/16 13:40	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0276 ± 0.158 (0.381)		pCi/L	09/14/16 11:32	13982-63-3	
		C:62% T:NA					
Radium-228	EPA 9320	0.774 ± 0.452 (0.823)		pCi/L	09/23/16 01:56	15262-20-1	
		C:70% T:72%					

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

Sample: FB-1 Lab ID: 30195007006 Collected: 08/31/16 13:40 Received: 09/02/16 10:20 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.802 ± 0.610 (1.20)	pCi/L	09/23/16 13:04	7440-14-4	

Sample: HGWC-105 Lab ID: 30195007007 Collected: 08/31/16 14:15 Received: 09/02/16 10:20 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.108 ± 0.114 (0.223) C:91% T:NA	pCi/L	09/14/16 11:32	13982-63-3	
Radium-228	EPA 9320	0.798 ± 0.421 (0.749) C:71% T:82%	pCi/L	09/23/16 01:43	15262-20-1	
Total Radium	Total Radium Calculation	0.906 ± 0.535 (0.972)	pCi/L	09/23/16 13:04	7440-14-4	

Sample: HGWC-107 Lab ID: 30195007008 Collected: 08/31/16 14:42 Received: 09/02/16 10:20 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.106 ± 0.147 (0.313) C:86% T:NA	pCi/L	09/16/16 08:18	13982-63-3	
Radium-228	EPA 9320	1.09 ± 0.506 (0.874) C:79% T:70%	pCi/L	09/23/16 01:43	15262-20-1	
Total Radium	Total Radium Calculation	1.20 ± 0.653 (1.19)	pCi/L	10/04/16 11:22	7440-14-4	

Sample: HGWC-121 Lab ID: 30195007009 Collected: 08/31/16 15:10 Received: 09/02/16 10:20 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.252 ± 0.138 (0.215) C:91% T:NA	pCi/L	09/16/16 08:18	13982-63-3	
Radium-228	EPA 9320	1.32 ± 0.447 (0.634) C:79% T:85%	pCi/L	09/23/16 01:43	15262-20-1	
Total Radium	Total Radium Calculation	1.57 ± 0.585 (0.849)	pCi/L	10/04/16 11:22	7440-14-4	

Sample: HGWC-109 Lab ID: 30195007010 Collected: 08/31/16 15:24 Received: 09/02/16 10:20 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.146 ± 0.120 (0.223) C:90% T:NA	pCi/L	09/16/16 08:18	13982-63-3	
Radium-228	EPA 9320	0.880 ± 0.389 (0.638) C:77% T:82%	pCi/L	09/23/16 01:56	15262-20-1	
Total Radium	Total Radium Calculation	1.03 ± 0.509 (0.861)	pCi/L	10/04/16 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FERB-1		Lab ID: 30195007011	Collected: 08/31/16 16:15	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	0.0663 ± 0.118 (0.259)	pCi/L	09/16/16 08:18	13982-63-3		
Radium-228	EPA 9320	0.956 ± 0.426 (0.704) C:86% T:NA	pCi/L	09/23/16 01:44	15262-20-1		
Total Radium	Total Radium Calculation	1.02 ± 0.544 (0.963) C:78% T:74%	pCi/L	10/04/16 11:22	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DUP-1		Lab ID: 30195007012	Collected: 08/31/16 00:01	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	0.185 ± 0.117 (0.188)	pCi/L	09/16/16 08:18	13982-63-3		
Radium-228	EPA 9320	1.42 ± 0.459 (0.593) C:89% T:NA	pCi/L	09/23/16 01:57	15262-20-1		
Total Radium	Total Radium Calculation	1.61 ± 0.576 (0.781) C:77% T:76%	pCi/L	10/04/16 11:22	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-103		Lab ID: 30195007013	Collected: 08/31/16 12:55	Received: 09/02/16 10:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	0.0844 ± 0.105 (0.216)	pCi/L	09/16/16 08:19	13982-63-3		
Radium-228	EPA 9320	1.54 ± 0.475 (0.584) C:88% T:NA	pCi/L	09/23/16 01:45	15262-20-1		
Total Radium	Total Radium Calculation	1.62 ± 0.580 (0.800) C:75% T:77%	pCi/L	10/03/16 15:46	7440-14-4		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

QC Batch: 232409 Analysis Method: EPA 9320
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
 Associated Lab Samples: 30195007001, 30195007002, 30195007004, 30195007005, 30195007006, 30195007007

METHOD BLANK: 1138994 Matrix: Water
 Associated Lab Samples: 30195007001, 30195007002, 30195007004, 30195007005, 30195007006, 30195007007

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

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

QC Batch: 232977 Analysis Method: EPA 9315
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
 Associated Lab Samples: 30195007008, 30195007009, 30195007010, 30195007011, 30195007012, 30195007013

METHOD BLANK: 1141794 Matrix: Water
 Associated Lab Samples: 30195007008, 30195007009, 30195007010, 30195007011, 30195007012, 30195007013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.177 ± 0.109 (0.163) C:88% T:NA	pCi/L	09/16/16 08:18	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
Pace Project No.: 30195007

QC Batch: 232983 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 30195007008, 30195007009, 30195007010, 30195007011, 30195007012, 30195007013

METHOD BLANK: 1141811 Matrix: Water
Associated Lab Samples: 30195007008, 30195007009, 30195007010, 30195007011, 30195007012, 30195007013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.562 ± 0.343 (0.628) C:77% T:84%	pCi/L	09/23/16 01:56	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4
 Pace Project No.: 30195007

QC Batch: 232408 Analysis Method: EPA 9315
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
 Associated Lab Samples: 30195007001, 30195007002, 30195007004, 30195007005, 30195007006, 30195007007

METHOD BLANK: 1138993 Matrix: Water
 Associated Lab Samples: 30195007001, 30195007002, 30195007004, 30195007005, 30195007006, 30195007007

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

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QUALIFIERS

Project: Plant Hammond AP 3&4
Pace Project No.: 30195007

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#: 30195007



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



CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power		CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Joju Abraham		CC: Maria Pedilla Heath McCorkle		REQUESTED COMPLETION DATE: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond AP 3&4		PROJECT #: Phase 2 - CCR	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	CONTAINER TYPE: PRESERVATION	ANALYSIS REQUESTED	CONTAINER TYPE: PRESERVATION	LAB #	DATE/TIME	DATE/TIME	DATE/TIME	
8/31/16	10:40	GW	X	X	HAWC-117	3 P - PLASTIC A - AMBER GLASS B - CLEAR GLASS I - VOA VIAL D - NaOH, ≤6°C N - NaOH/ZnAc, ≤6°C U - Na ₂ S ₂ O ₃ , ≤6°C M - 56°C not frozen	Metals App. III & IV (EPA 6020/7470) C, P, SO ₄ & TDS (EPA 300.0 & SM 2540G) Radium 226 & 228 (GW-846 9315/9320)	1- HCl, ≤6°C 2- H ₂ SO ₄ , ≤6°C 3- HNO ₃ 4- NaOH, ≤6°C 5- NaOH/ZnAc, ≤6°C 6- Na ₂ S ₂ O ₃ , ≤6°C 7- 56°C not frozen	001	8/31/16 17:00	8/31/16 17:00	8/31/16 17:00	
8/31/16	10:55	GW	X	X	HAWC-124	3			002				
8/31/16	11:25	GW	X	X	HAWC-118	3			003				
8/31/16	12:23	GW	X	X	HAWC-101	3			004				
8/31/16	12:55	GW	X	X	HAWC-103	3			005 013				
8/31/16	13:10	GW	X	X	HAWC-120	3			006 005				
8/31/16	13:40	W	X	X	FB-1	3			007 006				
8/31/16	14:15	GW	X	X	HAWC-105	3			008 007				
8/31/16	14:42	GW	X	X	HAWC-107	3			009 008				
8/31/16	15:10	GW	X	X	HAWC-121	3			010 009				
8/31/16	15:24	GW	X	X	HAWC-109	3			011 010				
8/31/16	16:15	W	X	X	FERB-1	3			012 011				
RELINQUISHED BY: [Signature]													
RELINQUISHED BY: [Signature]													
SAMPLE SHIPPED VIA: [Signature]													
Custody Seal: Intact <input checked="" type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/>													
Temperature: Min: NA Max: NA													
pH checked: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>													
RECEIVED BY LAB: [Signature]													
RECEIVED BY: [Signature]													
ENTERED INTO LIMS: [Signature]													
Tracking #: [Signature]													

30195007

CHAIN OF CUSTODY RECORD

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

PAGE: 2 OF 2

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239 REPORT TO: Joju Abraham REQUESTED COMPLETION DATE: PROJECT NAME/STATE: Plant Hammond AP 384		ANALYSIS REQUESTED CONTAINER TYPE: P P P PRESERVATION: 3 7 3 # of CONTAINERS: 3 Metals App. III & IV (EPA 6020/7470) Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)		CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION: 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NeOHIZnAc, ≤6°C 6 - Ne ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen	
PROJECT #: Phase 2 - CCR Collection DATE: 8/31/16 Collection TIME: - MATRIX CODE: GW SAMPLE IDENTIFICATION: X DUP-1 C O M P G R A B		MATRIX CODES: DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORM WATER W - WATER S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT		REMARKS/ADDITIONAL INFORMATION: OB 9/2/16 012	
RECEIVED BY AND TITLE: ERM-M.R. DATE/TIME: 8/31/16 17:00 RECEIVED BY: [Signature]		RELINQUISHED BY: [Signature] DATE/TIME: 9/1/2016 07:11		LAB #: FOR LAB USE ONLY	
RECEIVED BY LAB: [Signature] DATE/TIME: 9/1/16 10:23 Temperature: Min: NA Max: NA Ice: Yes (N) No (NA)		SAMPLE SHIPPED VIA: UPS FED-EX USPS COLRIER CLIENT OTHER FS Intact Broken Not Present # of Coolers: 4		Entered into LIMS: Tracking #:	

Sample Condition Upon Receipt Pittsburgh

30195007



Client Name: Georgia Power Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 6812 5098 8161

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 9-2-16

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4. <u>no signature</u>
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>GW, W, LW</u>	/			5.
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 HGWC-118</u>
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>all below 2 PH</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):	/			14.
Trip Blank Present:	/			15.
Trip Blank Custody Seals Present	/			Initial when completed: <u>ML</u> Date: <u>9-2-16</u>
Rad Aqueous Samples Screened > 0.5 mrem/hr	/			

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: WRR
Date: 9/21/2016
Worklist: 31292
Matrix: DW

Method Blank Assessment

MB Sample ID: 1138993
MB concentration: 0.040
MB Counting Uncertainty: 0.084
MB MDC: 0.189
MB Numerical Performance Indicator: 0.94
MB Status vs Numerical Indicator: N/A
MB Status vs MDC: Pass

Laboratory Control Sample Assessment

LCS# 31292 N
LCS# 31292
Count Date: 9/14/2016
Spike I.D.: 16-026
Spike Concentration (pCi/mL): 44.678
Volume Used (mL): 0.10
Aliquot Volume (L, g, F): 0.514
Target Conc. (pCi/L, g, F): 8.685
Uncertainty (Calculated): 0.408
Result (pCi/L, g, F): 7.435
LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.631
Numerical Performance Indicator: -3.26
Percent Recovery: 85.61%
Status vs Numerical Indicator: N/A
Status vs Recovery: Pass

Duplicate Sample Assessment

Sample I.D.: 30195006001
Duplicate Sample I.D.: 30195006001Dup
Sample Result (pCi/L, g, F): 1.011
Sample Result Counting Uncertainty (pCi/L, g, F): 0.292
Sample Duplicate Result (pCi/L, g, F): 0.838
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.295
Are sample and/or duplicate results below MDC? See Below ##
Duplicate Numerical Performance Indicator: 0.819
Duplicate RPD: 18.76%
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.
30195006001
30195006001Dup

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

Comments:

Ok 10/1/16

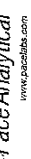
Sample Matrix Spike Control Assessment

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):
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 Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample 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:
Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
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: WRR
Date: 9/21/2016
Worklist: 31359
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment

MB Sample ID: 1141794
MB concentration: 0.177
MB Counting Uncertainty: 0.106
MB MDC: 0.163
MB Numerical Performance Indicator: 3.28
MB Status vs Numerical Indicator: N/A
MB Status vs. MDC: See Comment*

Laboratory Control Sample Assessment

LCSD (Y or NJ)?	N
LCSD31359	LCSD31359
Count Date:	9/16/2016
Spike I.D.:	16-026
Spike Concentration (pCi/mL):	44.677
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.498
Target Conc. (pCi/L, g, F):	8.971
Uncertainty (Calculated):	0.422
Result (pCi/L, g, F):	8.159
LCSLCSD Counting Uncertainty (pCi/L, g, F):	0.569
Numerical Performance Indicator:	-2.19
Percent Recovery:	90.96%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment

Sample I.D.:	30195125002
Duplicate Sample I.D.:	30195125002DUP
Sample Result (pCi/L, g, F):	0.276
Sample Result Counting Uncertainty (pCi/L, g, F):	0.203
Sample Duplicate Result (pCi/L, g, F):	0.108
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.241
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	1.049
Duplicate RPD:	87.95%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail**

Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
30195125002
30195125002DUP

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):
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:
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
MS Numerical Performance Indicator:
MS Numerical Performance Indicator:
MS Percent Recovery:
MSD Percent Recovery:
MS Status vs Numerical Indicator:
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.:
Spike I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Sample 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.

Handwritten signature/initials

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JLW
Date: 9/12/2016
Worklist: 31293
Matrix: DW

Method Blank Assessment

MB Sample ID: 1138894
MB Concentration: 0.716
M/B Counting Uncertainty: 0.332
MB MDC: 0.609
MB Numerical Performance Indicator: 4.22
MB Status vs Numerical Indicator: N/A
MB Status vs MDC: See Comment*

Laboratory Control Sample Assessment

LCS# 31293 N LCS# 31293

Count Date: 9/22/2016
Spike I.D.: 16-025
Spike Concentration (pCi/mL): 25.604
Volume Used (mL): 0.20
Aliquot Volume (L, g, F): 0.811
Target Conc. (pCi/L, g, F): 6.316
Uncertainty (Calculated): 0.455
Result (pCi/L, g, F): 6.066
LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.768
Numerical Performance Indicator: -0.55
Percent Recovery: 96.04%
Status vs Numerical Indicator: N/A
Status vs Recovery: Pass

Duplicate Sample Assessment

Sample I.D.: 30195006001
Duplicate Sample I.D.: 30195006001DUP
Sample Result Counting Uncertainty (pCi/L, g, F): 1.460
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.455
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 2.259
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.522
Are sample and/or duplicate results below MDC? See Below ##
Duplicate Numerical Performance Indicator: -2.261
Duplicate RPD: 42.96%
Duplicate Status vs Numerical Indicator: N/A
Duplicate Status vs RPD: Fail**

Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
30195006001
30195006001DUP

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:
Sample Matrix Spike Duplicate 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 Spiker/Matrix Spike Duplicate Sample Assessment

Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate 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.

10/12/16

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: JLW
Date: 9/15/2016
Worklist: 31364
Matrix: DW

Method Blank Assessment	
MB Sample ID	1141811
MB concentration:	0.562
M/B Counting Uncertainty:	0.328
MB MDC:	0.628
MB Numerical Performance Indicator:	3.36
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	N
Count Date:	LCS31364		LCS31364
Spike I.D.:	9/23/2016		
Spike Concentration (pCi/mL):	16.025		
Volume Used (mL):	25.603		
Aliquot Volume (L, g, F):	0.20		
Target Conc. (pCi/L, g, F):	0.802		
Uncertainty (Calculated):	6.385		
Result (pCi/L, g, F):	7.456		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.639		
Numerical Performance Indicator:	2.67		
Percent Recovery:	116.77%		
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.:	30195125002	30195125002
Duplicate Sample I.D.:	30195125002DUP	30195125002DUP
Sample Result (pCi/L, g, F):	1.548	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.474	
Sample Duplicate Result (pCi/L, g, F):	2.200	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.545	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.767	
Duplicate RPD:	34.76%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

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

Comments:

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
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 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, 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: AZJ0623

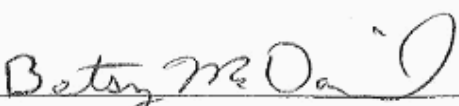
October 28, 2016

Project: CCR Event

Project #:Plant Hammond

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.

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 28, 2016

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-111	AZJ0623-01	Ground Water	10/20/16 14:32	10/21/16 11:48
HGWA-122	AZJ0623-02	Ground Water	10/20/16 10:50	10/21/16 11:48
HGWC-117	AZJ0623-03	Ground Water	10/20/16 10:50	10/21/16 11:48
HGWC-118	AZJ0623-04	Ground Water	10/20/16 12:30	10/21/16 11:48
HGWC-101	AZJ0623-05	Ground Water	10/20/16 14:40	10/21/16 11:48
FB-1	AZJ0623-06	Water	10/20/16 12:40	10/21/16 11:48
FERB-1	AZJ0623-07	Water	10/20/16 12:45	10/21/16 11:48
Dup-1	AZJ0623-08	Ground Water	10/20/16 00:00	10/21/16 11:48



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 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: HGWA-111

Lab Number ID: AZJ0623-01

Date/Time Sampled: 10/20/2016 2:32:00PM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	108	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	3.2	0.25	0.01	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 15:27	6100589	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 15:27	6100589	RLC
Sulfate	1.6	1.0	0.05	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 15:27	6100589	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Barium	0.0255	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Boron	0.0160	0.100	0.0064	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Calcium	38.7	2.50	0.155	mg/L	EPA 6020B		5	10/26/16 09:00	10/27/16 14:06	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:51	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 10:35	10/24/16 15:55	6100579	MTC



PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: HGWA-122

Lab Number ID: AZJ0623-02

Date/Time Sampled: 10/20/2016 10:50:00AM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	265	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 17:10	6100589	RLC
Fluoride	0.13	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 17:10	6100589	RLC
Sulfate	49	1.0	0.05	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 17:10	6100589	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Barium	0.0431	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Boron	0.336	0.100	0.0064	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Calcium	90.3	5.00	0.311	mg/L	EPA 6020B		10	10/26/16 09:00	10/27/16 14:12	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Molybdenum	0.0050	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 13:57	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 10:35	10/24/16 15:58	6100579	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: HGWC-117

Lab Number ID: AZJ0623-03

Date/Time Sampled: 10/20/2016 10:50:00AM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	319	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	7.7	0.25	0.01	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 18:12	6100589	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 18:12	6100589	RLC
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	10/23/16 09:34	10/27/16 16:35	6100589	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Barium	0.0529	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Boron	0.956	0.100	0.0064	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Cadmium	0.0008	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Calcium	64.4	5.00	0.311	mg/L	EPA 6020B		10	10/26/16 09:00	10/27/16 14:18	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Cobalt	0.0045	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Lithium	0.0027	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:03	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 10:35	10/24/16 16:00	6100579	MTC



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Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: HGWC-118

Lab Number ID: AZJ0623-04

Date/Time Sampled: 10/20/2016 12:30:00PM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	305	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	4.4	0.25	0.01	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 18:33	6100589	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 18:33	6100589	RLC
Sulfate	81	5.0	0.26	mg/L	EPA 300.0		5	10/23/16 09:34	10/27/16 16:56	6100589	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Barium	0.0550	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Boron	0.697	0.100	0.0064	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Calcium	83.7	5.00	0.311	mg/L	EPA 6020B		10	10/26/16 09:00	10/27/16 14:24	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:09	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 10:35	10/24/16 16:02	6100579	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: HGWC-101

Lab Number ID: AZJ0623-05

Date/Time Sampled: 10/20/2016 2:40:00PM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	165	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	5.7	0.25	0.01	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 18:54	6100589	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 18:54	6100589	RLC
Sulfate	110	10	0.51	mg/L	EPA 300.0		10	10/23/16 09:34	10/27/16 18:39	6100589	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Barium	0.0477	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Boron	0.0877	0.100	0.0064	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Cadmium	0.0003	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Calcium	19.3	2.50	0.155	mg/L	EPA 6020B		5	10/26/16 09:00	10/26/16 16:05	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Cobalt	0.0025	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:14	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 10:35	10/24/16 16:05	6100579	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: FB-1

Lab Number ID: AZJ0623-06

Date/Time Sampled: 10/20/2016 12:40:00PM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 19:35	6100589	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 19:35	6100589	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 19:35	6100589	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:20	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 11:15	10/24/16 17:16	6100580	MTC



PACE ANALYTICAL SERVICES, INC.

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Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AZJ0623-07

Date/Time Sampled: 10/20/2016 12:45:00PM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 19:56	6100589	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 19:56	6100589	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 19:56	6100589	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Calcium	0.0666	0.500	0.0311	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:26	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 11:15	10/24/16 17:18	6100580	MTC



PACE ANALYTICAL SERVICES, INC.

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Attention: Mr. Joju Abraham

October 28, 2016

Report No.: AZJ0623

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AZJ0623-08

Date/Time Sampled: 10/20/2016 12:00:00AM

Date/Time Received: 10/21/2016 11:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	318	25	10	mg/L	SM 2540 C		1	10/25/16 12:55	10/25/16 12:55	6100642	JPT
Inorganic Anions											
Chloride	7.1	0.25	0.01	mg/L	EPA 300.0		1	10/23/16 09:34	10/23/16 20:16	6100589	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	10/23/16 09:34	10/23/16 20:16	6100589	RLC
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	10/23/16 09:34	10/27/16 19:00	6100589	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Barium	0.0532	0.0100	0.0004	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Boron	0.915	0.100	0.0064	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Cadmium	0.0008	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Calcium	61.7	5.00	0.311	mg/L	EPA 6020B		10	10/26/16 09:00	10/27/16 14:41	6100671	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Cobalt	0.0046	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Lithium	0.0026	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/26/16 09:00	10/26/16 14:32	6100671	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/24/16 11:15	10/24/16 17:21	6100580	MTC



PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 28, 2016

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General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100642 - SM 2540 C											
Blank (6100642-BLK1)						Prepared & Analyzed: 10/25/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6100642-BS1)						Prepared & Analyzed: 10/25/16					
Total Dissolved Solids	388	25	10	mg/L	400.00		97	84-108			
Duplicate (6100642-DUP1)						Source: AZJ0621-05 Prepared & Analyzed: 10/25/16					
Total Dissolved Solids	646	25	10	mg/L		642			0.6	10	
Duplicate (6100642-DUP2)						Source: AZJ0623-04 Prepared & Analyzed: 10/25/16					
Total Dissolved Solids	323	25	10	mg/L		305			6	10	



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Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100589 - EPA 300.0											
Blank (6100589-BLK1)						Prepared & Analyzed: 10/23/16					
Chloride	ND	1.0	0.01	mg/L							
Fluoride	ND	0.10	0.02	mg/L							
Sulfate	ND	5.0	0.05	mg/L							
LCS (6100589-BS1)						Prepared & Analyzed: 10/23/16					
Chloride	10.1	1.0	0.01	mg/L	10.010		101	90-110			
Fluoride	9.97	0.10	0.02	mg/L	10.020		99	90-110			
Sulfate	10.0	5.0	0.05	mg/L	10.020		100	90-110			
Matrix Spike (6100589-MS1)						Source: AZJ0623-02 Prepared & Analyzed: 10/23/16					
Chloride	12.9	1.0	0.01	mg/L	10.010	2.83	101	90-110			
Fluoride	10.6	0.10	0.02	mg/L	10.020	0.13	105	90-110			
Sulfate	54.3	5.0	0.05	mg/L	10.020	49.3	50	90-110			QM-02
Matrix Spike (6100589-MS2)						Source: AZJ0623-05 Prepared & Analyzed: 10/23/16					
Chloride	15.6	1.0	0.01	mg/L	10.010	5.70	99	90-110			
Fluoride	10.6	0.10	0.02	mg/L	10.020	0.03	106	90-110			
Sulfate	99.7	5.0	0.05	mg/L	10.020	100	NR	90-110			QM-02
Matrix Spike Dup (6100589-MSD1)						Source: AZJ0623-02 Prepared & Analyzed: 10/23/16					
Chloride	12.9	1.0	0.01	mg/L	10.010	2.83	100	90-110	0.2	15	
Fluoride	10.6	0.10	0.02	mg/L	10.020	0.13	105	90-110	0.2	15	
Sulfate	54.2	5.0	0.05	mg/L	10.020	49.3	49	90-110	0.08	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
Batch 6100579 - EPA 7470A											
Blank (6100579-BLK1)						Prepared & Analyzed: 10/24/16					
Mercury	ND	0.00050	0.000041	mg/L							
LCS (6100579-BS1)						Prepared & Analyzed: 10/24/16					
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3		97	80-120			
Matrix Spike (6100579-MS1)						Source: AZJ0582-01 Prepared & Analyzed: 10/24/16					
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
Matrix Spike Dup (6100579-MSD1)						Source: AZJ0582-01 Prepared & Analyzed: 10/24/16					
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125	0.6	20	
Post Spike (6100579-PS1)						Source: AZJ0582-01 Prepared & Analyzed: 10/24/16					
Mercury	1.80			ug/L	1.6667	-0.0129	109	80-120			
Batch 6100580 - EPA 7470A											
Blank (6100580-BLK1)						Prepared & Analyzed: 10/24/16					
Mercury	ND	0.00020	0.000041	mg/L							
LCS (6100580-BS1)						Prepared & Analyzed: 10/24/16					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
Matrix Spike (6100580-MS1)						Source: AZJ0623-08 Prepared & Analyzed: 10/24/16					
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125			
Matrix Spike Dup (6100580-MSD1)						Source: AZJ0623-08 Prepared & Analyzed: 10/24/16					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	4	20	



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Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100580 - EPA 7470A											
Post Spike (6100580-PS1)			Source: AZJ0623-08			Prepared & Analyzed: 10/24/16					
Mercury	1.70			ug/L	1.6667	0.00436	102	80-120			
Batch 6100671 - EPA 3005A											
Blank (6100671-BLK1)			Prepared & Analyzed: 10/26/16								
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							
LCS (6100671-BS1)			Prepared & Analyzed: 10/26/16								
Antimony	0.107	0.0030	0.0008	mg/L	0.10000		107	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.0971	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	1.05	0.100	0.0064	mg/L	1.0000		105	80-120			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000		103	80-120			
Calcium	1.05	0.500	0.0311	mg/L	1.0000		105	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Copper	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Lead	0.102	0.0050	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000		104	80-120			
Nickel	0.102	0.0050	0.0006	mg/L	0.10000		102	80-120			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.102	0.0050	0.0005	mg/L	0.10000		102	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
Batch 6100671 - EPA 3005A											
LCS (6100671-BS1)						Prepared & Analyzed: 10/26/16					
Thallium	0.102	0.0010	0.0002	mg/L	0.10000		102	80-120			
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000		102	80-120			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000		108	80-120			
Lithium	0.107	0.0500	0.0021	mg/L	0.10000		107	80-120			
Matrix Spike (6100671-MS1)						Source: AZJ0696-04 Prepared & Analyzed: 10/26/16					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	ND	107	75-125			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125			
Barium	0.0982	0.0100	0.0004	mg/L	0.10000	ND	98	75-125			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	ND	101	75-125			
Boron	1.06	0.100	0.0064	mg/L	1.0000	ND	106	75-125			
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125			
Calcium	1.02	0.500	0.0311	mg/L	1.0000	ND	102	75-125			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.101	0.0050	0.0005	mg/L	0.10000	ND	101	75-125			
Lead	0.0990	0.0050	0.0001	mg/L	0.10000	ND	99	75-125			
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000	ND	101	75-125			
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	ND	102	75-125			
Selenium	0.0992	0.0100	0.0010	mg/L	0.10000	ND	99	75-125			
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Thallium	0.0994	0.0010	0.0002	mg/L	0.10000	ND	99	75-125			
Vanadium	0.103	0.0100	0.0071	mg/L	0.10000	ND	103	75-125			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125			
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125			
Matrix Spike Dup (6100671-MSD1)						Source: AZJ0696-04 Prepared & Analyzed: 10/26/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000	ND	105	75-125	3	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	2	20	
Barium	0.0959	0.0100	0.0004	mg/L	0.10000	ND	96	75-125	2	20	
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	ND	101	75-125	0.02	20	
Boron	1.04	0.100	0.0064	mg/L	1.0000	ND	104	75-125	2	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	0.5	20	
Calcium	0.998	0.500	0.0311	mg/L	1.0000	ND	100	75-125	2	20	
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	0.6	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	0.9	20	
Copper	0.0985	0.0050	0.0005	mg/L	0.10000	ND	98	75-125	2	20	
Lead	0.0995	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	0.5	20	
Molybdenum	0.0977	0.0100	0.0017	mg/L	0.10000	ND	98	75-125	3	20	
Nickel	0.0994	0.0050	0.0006	mg/L	0.10000	ND	99	75-125	2	20	



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Attention: Mr. Joju Abraham

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Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100671 - EPA 3005A											
Matrix Spike Dup (6100671-MSD1)			Source: AZJ0696-04			Prepared & Analyzed: 10/26/16					
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.0997	0.0050	0.0005	mg/L	0.10000	ND	100	75-125	2	20	
Thallium	0.100	0.0010	0.0002	mg/L	0.10000	ND	100	75-125	1	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	2	20	
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125	1	20	
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125	3	20	
Post Spike (6100671-PS1)			Source: AZJ0696-04			Prepared & Analyzed: 10/26/16					
Antimony	96.0			ug/L	100.00	0.176	96	80-120			
Arsenic	103			ug/L	100.00	-0.164	104	80-120			
Barium	98.0			ug/L	100.00	-0.0089	98	80-120			
Beryllium	99.2			ug/L	100.00	0.0006	99	80-120			
Boron	1060			ug/L	1000.0	1.09	106	80-120			
Cadmium	103			ug/L	100.00	-0.0453	103	80-120			
Calcium	1050			ug/L	1000.0	10.9	103	80-120			
Chromium	105			ug/L	100.00	-0.0552	105	80-120			
Cobalt	101			ug/L	100.00	0.0039	101	80-120			
Copper	99.3			ug/L	100.00	0.0665	99	80-120			
Lead	99.0			ug/L	100.00	-0.0007	99	80-120			
Molybdenum	105			ug/L	100.00	0.0174	105	80-120			
Nickel	101			ug/L	100.00	0.0775	100	80-120			
Selenium	102			ug/L	100.00	-1.57	103	80-120			
Silver	102			ug/L	100.00	0.0072	102	80-120			
Thallium	99.9			ug/L	100.00	0.0064	100	80-120			
Vanadium	103			ug/L	100.00	-0.163	103	80-120			
Zinc	108			ug/L	100.00	0.823	107	80-120			
Lithium	105			ug/L	100.00	0.0048	105	80-120			



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Attention: Mr. Joju Abraham

October 28, 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).

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 ; www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power
 CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
 241 Ralph McGill Blvd SE B10185
 Atlanta, GA 30308
 404-505-7235
 REPORT TO: Joju Abraham
 CC: Maria Padilla
 Health McCorkle
 REQUESTED COMPLETION DATE: PO #:
 PROJECT NAME/STATE: Plant Hammond - AP 3&4
 PROJECT #: CCR

CONTAINER TYPE PRESERVATION	ANALYSIS REQUESTED	CONTAINER TYPE PRESERVATION	RELINQUISHED BY:		RELINQUISHED BY:		DATE/TIME	DATE/TIME
			Signature	Print	Signature	Print		
3	Metals Part 257 App. III & IV (EPA 6020/7470)	3	7	3	3	10/20/16	14:40	
7	Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C)	7	3	3	3	10/20/16	14:40	
3	Radium 226 & 228 (SW-846 9315/9320)	3	3	3	3	10/20/16	14:40	
4	HGWA-111	4	1	1	1	10/20/16	14:40	
3	HGWA-122	3	1	1	1	10/20/16	14:40	
3	HGWC-117	3	1	1	1	10/20/16	14:40	
3	HGWC-118	3	1	1	1	10/20/16	14:40	
3	HGWC-101	3	1	1	1	10/20/16	14:40	
3	FB-1	3	1	1	1	10/20/16	14:40	
3	FERB-1	3	1	1	1	10/20/16	14:40	
3	DUP-1	3	1	1	1	10/20/16	14:40	

LAB #:
 Entered into LIMS:
 Tracking #:

FOR LAB USE ONLY
 AZJ0623
 084



PACE ANALYTICAL SERVICES, INC.

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LOG-IN CHECKLIST

Printed: 10/28/2016 4:40:59PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/21/16 11:48

Work Order: AZJ0623

Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 8

#Containers: 25

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 23, 2016

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 30200226

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 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 Hammond
Pace Project No.: 30200226

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 Hammond

Pace Project No.: 30200226

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30200226001	HGWA-111	Water	10/20/16 14:32	10/24/16 09:00
30200226002	HGWA-122	Water	10/20/16 10:50	10/24/16 09:00
30200226003	HGWC-117	Water	10/20/16 10:50	10/24/16 09:00
30200226004	HGWC-118	Water	10/20/16 12:30	10/24/16 09:00
30200226005	HGWC-101	Water	10/20/16 14:40	10/24/16 09:00
30200226006	FB-1	Water	10/20/16 12:40	10/24/16 09:00
30200226007	FERB-1	Water	10/20/16 12:45	10/24/16 09:00
30200226008	DUP-1	Water	10/20/16 00:00	10/24/16 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 30200226

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30200226001	HGWA-111	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226002	HGWA-122	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226003	HGWC-117	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226004	HGWC-118	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226005	HGWC-101	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226006	FB-1	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226007	FERB-1	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30200226008	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: Plant Hammond

Pace Project No.: 30200226

Sample: HGWA-111		Lab ID: 30200226001	Collected: 10/20/16 14:32	Received: 10/24/16 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	0.116 ± 0.125 (0.242)		pCi/L	11/05/16 18:42	13982-63-3	
		C:91% T:NA					
Radium-228	EPA 9320	1.01 ± 0.573 (1.05)		pCi/L	11/19/16 19:47	15262-20-1	
		C:70% T:83%					
Total Radium	Total Radium Calculation	1.13 ± 0.698 (1.29)		pCi/L	11/21/16 16:24	7440-14-4	

Sample: HGWA-122		Lab ID: 30200226002	Collected: 10/20/16 10:50	Received: 10/24/16 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	0.138 ± 0.136 (0.251)		pCi/L	11/05/16 18:42	13982-63-3	
		C:87% T:NA					
Radium-228	EPA 9320	0.358 ± 0.399 (0.804)		pCi/L	11/19/16 19:47	15262-20-1	
		C:83% T:83%					
Total Radium	Total Radium Calculation	0.496 ± 0.535 (1.06)		pCi/L	11/21/16 16:24	7440-14-4	

Sample: HGWC-117		Lab ID: 30200226003	Collected: 10/20/16 10:50	Received: 10/24/16 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	0.186 ± 0.153 (0.273)		pCi/L	11/05/16 18:45	13982-63-3	
		C:89% T:NA					
Radium-228	EPA 9320	0.617 ± 0.497 (0.965)		pCi/L	11/19/16 19:47	15262-20-1	
		C:74% T:79%					
Total Radium	Total Radium Calculation	0.803 ± 0.650 (1.24)		pCi/L	11/21/16 16:24	7440-14-4	

Sample: HGWC-118		Lab ID: 30200226004	Collected: 10/20/16 12:30	Received: 10/24/16 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	0.133 ± 0.126 (0.225)		pCi/L	11/05/16 18:45	13982-63-3	
		C:86% T:NA					
Radium-228	EPA 9320	1.84 ± 0.687 (1.05)		pCi/L	11/19/16 19:47	15262-20-1	
		C:66% T:79%					
Total Radium	Total Radium Calculation	1.97 ± 0.813 (1.28)		pCi/L	11/21/16 16:24	7440-14-4	

Sample: HGWC-101		Lab ID: 30200226005	Collected: 10/20/16 14:40	Received: 10/24/16 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	0.288 ± 0.201 (0.351)		pCi/L	11/05/16 18:45	13982-63-3	
		C:90% T:NA					
Radium-228	EPA 9320	1.11 ± 0.543 (0.945)		pCi/L	11/19/16 19:47	15262-20-1	
		C:75% T:81%					

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200226

Sample: HGWC-101		Lab ID: 30200226005	Collected: 10/20/16 14:40	Received: 10/24/16 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	1.40 ± 0.744 (1.30)	pCi/L	11/21/16 16:24	7440-14-4	

Sample: FB-1		Lab ID: 30200226006	Collected: 10/20/16 12:40	Received: 10/24/16 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	-0.0612 ± 0.0563 (0.243) C:93% T:NA	pCi/L	11/05/16 18:46	13982-63-3	
Radium-228	EPA 9320	0.182 ± 0.408 (0.860) C:77% T:89%	pCi/L	11/19/16 19:47	15262-20-1	
Total Radium	Total Radium Calculation	0.182 ± 0.464 (1.10)	pCi/L	11/21/16 16:24	7440-14-4	

Sample: FERB-1		Lab ID: 30200226007	Collected: 10/20/16 12:45	Received: 10/24/16 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	0.219 ± 0.167 (0.293) C:92% T:NA	pCi/L	11/05/16 18:46	13982-63-3	
Radium-228	EPA 9320	0.759 ± 0.478 (0.886) C:71% T:87%	pCi/L	11/19/16 19:48	15262-20-1	
Total Radium	Total Radium Calculation	0.978 ± 0.645 (1.18)	pCi/L	11/21/16 16:24	7440-14-4	

Sample: DUP-1		Lab ID: 30200226008	Collected: 10/20/16 00:00	Received: 10/24/16 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	-0.111 ± 0.0901 (0.335) C:88% T:NA	pCi/L	11/05/16 18:46	13982-63-3	
Radium-228	EPA 9320	1.76 ± 0.583 (0.812) C:82% T:77%	pCi/L	11/19/16 19:48	15262-20-1	
Total Radium	Total Radium Calculation	1.76 ± 0.673 (1.15)	pCi/L	11/21/16 16:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200226

QC Batch:	238844	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30200226001, 30200226002, 30200226003, 30200226004, 30200226005, 30200226006, 30200226007, 30200226008		

METHOD BLANK:	1173703	Matrix:	Water
Associated Lab Samples:	30200226001, 30200226002, 30200226003, 30200226004, 30200226005, 30200226006, 30200226007, 30200226008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0306 ± 0.0501 (0.101) C:95% T:NA	pCi/L	11/04/16 23:09	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200226

QC Batch:	239880	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30200226001, 30200226002, 30200226003, 30200226004, 30200226005, 30200226006, 30200226007, 30200226008		

METHOD BLANK:	1178547	Matrix:	Water
Associated Lab Samples:	30200226001, 30200226002, 30200226003, 30200226004, 30200226005, 30200226006, 30200226007, 30200226008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.935 ± 0.482 (0.855) C:73% T:95%	pCi/L	11/19/16 19:47	

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 Hammond

Pace Project No.: 30200226

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#: 30200226



30200226

Facility: *[Signature]*

Chain of Custody

Workorder: AZJ0623 Workorder Name: PlantHammond Owner Received Date: Results Requested By: 11/23/2016

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

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY
						3	ON	H	
1	HGWA-111	G	10/20/2016 14:32	AZJ0623-01	GW	2			001
2	HGWA-122	G	10/20/2016 10:50	AZJ0623-02	GW	1			002
3	HGWC-117	G	10/20/2016 10:50	AZJ0623-03	GW	1			003
4	HGWC-118	G	10/20/2016 12:30	AZJ0623-04	GW	1			004
5	HGWC-101	G	10/20/2016 14:40	AZJ0623-05	GW	1			005
6	FB-1	G	10/20/2016 12:40	AZJ0623-06	W	1			006
7	FERB-1	G	10/20/2016 12:45	AZJ0623-07	W	1			007
8	Dup-1	G	10/20/2016 0:00	AZJ0623-08	GW	1			008
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>Charles Fisher</i>	10/21/16 1730	<i>Pace</i>	10/24/16	0900
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 GA

Project # 30200226

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 6812 5099 9949

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 10/24/16

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>PH₂</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>10/24/16 RTB</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>RTB</u> Date: <u>10/24/16</u>

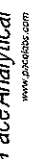
Client Notification/ Resolution:

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: 11/16/2016
Worklist: 32405
Matrix: DW

Method Blank Assessment	MB Sample ID: 1178547
MB concentration:	0.935
MB Counting Uncertainty:	0.452
MB IDC:	0.855
MB Numerical Performance Indicator:	4.05
MB Status vs Numerical Indicator:	N/A
MB Status vs. IDC:	See Comment*

Laboratory Control Sample Assessment	N LCSD32405
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):	0.807
Target Conc. (pCi/L, g, F):	6.450
Uncertainty (Calculated):	0.464
Result (pCi/L, g, F):	7.929
Counting Uncertainty (pCi/L, g, F):	0.807
Numerical Performance Indicator:	3.11
Percent Recovery:	122.93%
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: 30200226001 30200226001DUP
Sample I.D.:	30200226001
Duplicate Sample I.D.:	30200226001DUP
Sample Result (pCi/L, g, F):	1.006
Sample Duplicate Result (pCi/L, g, F):	0.544
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.294
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.439
Are sample and/or duplicate results below MDC?	See Below**
Duplicate Numerical Performance Indicator:	1.996
Duplicate RPD:	409.63%
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 Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample 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:

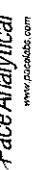
*The method blank result is below the reporting limit for this analysis and is acceptable.

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

numerical duplicate to assess when results = 5 x mdc acceptable when < 2 from all matrices

11/23/16

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JC2
Date: 11/3/2016
Worklist: 32222
Matrix: DW

Method Blank Assessment

MB Sample ID: 1173703
MB concentration: 0.031
M/B Counting Uncertainty: 0.050
MB MDC: 0.101
MB Numerical Performance Indicator: 1.20
MB Status vs Numerical Indicator: N/A
MB Status vs. MDC: Pass

Laboratory Control Sample Assessment

LCS# 32222 N LCS032222

Count Date: 11/5/2016

Spike I.D.: 16-026

Spike Concentration (pCi/mL): 44.675

Volume Used (mL): 0.10

Aliquot Volume (L, g, F): 8.914

Target Conc. (pCi/L, g, F): 0.501

Uncertainty (Calculated): 0.419

Result (pCi/L, g, F): 8.283

LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.789

Numerical Performance Indicator: -1.38

Percent Recovery: 92.92%

Status vs Numerical Indicator: N/A

Status vs Recovery: Pass

Duplicate Sample Assessment

Sample I.D.: 30200041003

Duplicate Sample I.D.: 30200041003DUP

Sample Result (pCi/L, g, F): 0.058

Sample Result Counting Uncertainty (pCi/L, g, F): 0.063

Sample Duplicate Result (pCi/L, g, F): 0.490

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: -3.182

Duplicate RPD: 157.41%

Duplicate Status vs Numerical Indicator: N/A

Duplicate Status vs RPD: Fail***

Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
30200041003
30200041003DUP

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

Comments:

results < MDC - N/A

****Batch must be re-ripped due to unacceptable precision. 11/23/16*

Sample Matrix Spike Control Assessment

Sample Collection Date: [Blank]

Sample I.D.: [Blank]

Sample MS I.D.: [Blank]

Sample MSD I.D.: [Blank]

Spike I.D.: [Blank]

MS/MSD Decay Corrected Spike Concentration (pCi/mL): [Blank]

Spike Volume Used in MS (mL): [Blank]

Spike Volume Used in MSD (mL): [Blank]

MS Aliquot (L, g, F): [Blank]

MS Target Conc. (pCi/L, g, F): [Blank]

MSD Aliquot (L, g, F): [Blank]

MSD Target Conc. (pCi/L, g, F): [Blank]

Spike uncertainty (calculated): [Blank]

Sample Result: [Blank]

Sample Result Counting Uncertainty (pCi/L, g, F): [Blank]

Sample Matrix Spike Result: [Blank]

Matrix Spike Result Counting Uncertainty (pCi/L, g, F): [Blank]

Sample Matrix Spike Duplicate Result: [Blank]

Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): [Blank]

MS Numerical Performance Indicator: [Blank]

MSD Numerical Performance Indicator: [Blank]

MS Percent Recovery: [Blank]

MSD Percent Recovery: [Blank]

MS Status vs Numerical Indicator: [Blank]

MSD Status vs Numerical Indicator: [Blank]

MS Status vs Recovery: [Blank]

MSD Status vs Recovery: [Blank]

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Sample I.D.: [Blank]

Sample MS I.D.: [Blank]

Sample MSD I.D.: [Blank]

Sample Matrix Spike Result: [Blank]

Matrix Spike Result Counting Uncertainty (pCi/L, g, F): [Blank]

Sample Matrix Spike Duplicate Result: [Blank]

Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): [Blank]

Duplicate Numerical Performance Indicator: [Blank]

MS/MSD Duplicate RPD: [Blank]

MS/MSD Duplicate Status vs Numerical Indicator: [Blank]

MS/MSD Duplicate Status vs RPD: [Blank]



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: AZJ0697

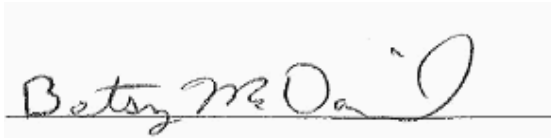
November 02, 2016

Project: CCR Event

Project #:Plant Hammond

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

November 02, 2016

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-112	AZJ0697-01	Ground Water	10/24/16 12:44	10/25/16 14:10
HGWA-113	AZJ0697-02	Ground Water	10/24/16 14:11	10/25/16 14:10
HGWC-103	AZJ0697-03	Ground Water	10/24/16 15:27	10/25/16 14:10



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2016

Report No.: AZJ0697

Project: CCR Event

Client ID: HGWA-112

Lab Number ID: AZJ0697-01

Date/Time Sampled: 10/24/2016 12:44:00PM

Date/Time Received: 10/25/2016 2:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	65	25	10	mg/L	SM 2540 C		1	10/31/16 19:05	10/31/16 19:05	6100829	JPT
Inorganic Anions											
Chloride	5.2	0.25	0.01	mg/L	EPA 300.0		1	10/26/16 15:29	10/27/16 06:25	6100701	RNB
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	10/26/16 15:29	10/27/16 06:25	6100701	RNB
Sulfate	0.62	1.0	0.05	mg/L	EPA 300.0	J	1	10/26/16 15:29	10/27/16 06:25	6100701	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Barium	0.0280	0.0100	0.0004	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:09	6100710	CSW
Boron	0.0367	0.100	0.0064	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Calcium	6.25	2.50	0.155	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:09	6100710	CSW
Chromium	0.0039	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:22	6100710	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:09	6100710	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 13:04	6100740	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2016

Report No.: AZJ0697

Project: CCR Event

Client ID: HGWA-113

Lab Number ID: AZJ0697-02

Date/Time Sampled: 10/24/2016 2:11:00PM

Date/Time Received: 10/25/2016 2:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	111	25	10	mg/L	SM 2540 C		1	10/31/16 19:05	10/31/16 19:05	6100829	JPT
Inorganic Anions											
Chloride	1.9	0.25	0.01	mg/L	EPA 300.0		1	10/26/16 15:29	10/27/16 06:45	6100701	RNB
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	10/26/16 15:29	10/27/16 06:45	6100701	RNB
Sulfate	11	1.0	0.05	mg/L	EPA 300.0		1	10/26/16 15:29	10/27/16 06:45	6100701	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Barium	0.0258	0.0100	0.0004	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Beryllium	0.0019	0.0030	0.0004	mg/L	EPA 6020B	J	5	10/27/16 14:30	11/01/16 14:29	6100710	CSW
Boron	0.0226	0.100	0.0064	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Calcium	6.40	2.50	0.155	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:29	6100710	CSW
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Selenium	0.0034	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:40	6100710	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:29	6100710	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 13:06	6100740	MTC



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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2016

Report No.: AZJ0697

Project: CCR Event

Client ID: HGWC-103

Lab Number ID: AZJ0697-03

Date/Time Sampled: 10/24/2016 3:27:00PM

Date/Time Received: 10/25/2016 2:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	517	25	10	mg/L	SM 2540 C		1	10/31/16 19:05	10/31/16 19:05	6100829	JPT
Inorganic Anions											
Chloride	5.2	0.25	0.01	mg/L	EPA 300.0		1	10/26/16 15:29	10/27/16 07:06	6100701	RNB
Fluoride	0.13	0.30	0.02	mg/L	EPA 300.0	J	1	10/26/16 15:29	10/27/16 07:06	6100701	RNB
Sulfate	280	10	0.51	mg/L	EPA 300.0		10	10/26/16 15:29	11/01/16 12:37	6100701	RNB
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Barium	0.0386	0.0100	0.0004	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:37	6100710	CSW
Boron	1.83	0.100	0.0064	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Cadmium	0.0008	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Calcium	70.9	5.00	0.311	mg/L	EPA 6020B		10	10/27/16 14:30	11/01/16 18:04	6100710	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Cobalt	0.0018	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/27/16 14:30	10/29/16 01:45	6100710	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	10/27/16 14:30	11/01/16 14:37	6100710	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 13:08	6100740	MTC



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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2016

Report No.: AZJ0697

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100829 - SM 2540 C											
Blank (6100829-BLK1)						Prepared & Analyzed: 10/31/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6100829-BS1)						Prepared & Analyzed: 10/31/16					
Total Dissolved Solids	377	25	10	mg/L	400.00		94	84-108			
Duplicate (6100829-DUP1)						Source: AZJ0696-02RE1 Prepared & Analyzed: 10/31/16					
Total Dissolved Solids	674	25	10	mg/L		647			4	10	
Duplicate (6100829-DUP2)						Source: AZJ0700-01RE1 Prepared & Analyzed: 10/31/16					
Total Dissolved Solids	141	25	10	mg/L		136			4	10	



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November 02, 2016

Report No.: AZJ0697

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100701 - EPA 300.0											
Blank (6100701-BLK1)						Prepared: 10/26/16 Analyzed: 10/27/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
LCS (6100701-BS1)						Prepared: 10/26/16 Analyzed: 10/27/16					
Chloride	10.9	0.25	0.01	mg/L	10.010		108	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020		108	90-110			
Sulfate	10.8	1.0	0.05	mg/L	10.020		108	90-110			
Matrix Spike (6100701-MS1)						Source: AZJ0696-01 Prepared: 10/26/16 Analyzed: 10/27/16					
Chloride	84.1	0.25	0.01	mg/L	10.010	83.3	7	90-110			QM-02
Fluoride	8.55	0.30	0.02	mg/L	10.020	0.06	85	90-110			QM-05
Sulfate	147	1.0	0.05	mg/L	10.020	151	NR	90-110			QM-02
Matrix Spike (6100701-MS2)						Source: AZJ0697-03 Prepared: 10/26/16 Analyzed: 10/27/16					
Chloride	14.6	0.25	0.01	mg/L	10.010	5.18	94	90-110			
Fluoride	10.0	0.30	0.02	mg/L	10.020	0.13	99	90-110			
Sulfate	196	1.0	0.05	mg/L	10.020	194	18	90-110			QM-02
Matrix Spike Dup (6100701-MSD1)						Source: AZJ0696-01 Prepared: 10/26/16 Analyzed: 10/27/16					
Chloride	84.2	0.25	0.01	mg/L	10.010	83.3	9	90-110	0.2	15	QM-02
Fluoride	9.63	0.30	0.02	mg/L	10.020	0.06	96	90-110	12	15	
Sulfate	146	1.0	0.05	mg/L	10.020	151	NR	90-110	0.3	15	QM-02



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Report No.: AZJ0697

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100710 - EPA 3005A											
Blank (6100710-BLK1)						Prepared: 10/27/16 Analyzed: 10/29/16					
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	0.0100	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 (6100710-BS1)						Prepared: 10/27/16 Analyzed: 10/29/16					
Antimony	0.110	0.0030	0.0008	mg/L	0.10000		110	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000		101	80-120			
Boron	1.08	0.100	0.0064	mg/L	1.0000		108	80-120			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000		105	80-120			
Calcium	1.08	0.500	0.0311	mg/L	1.0000		108	80-120			
Chromium	0.108	0.0100	0.0009	mg/L	0.10000		108	80-120			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Copper	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.101	0.0050	0.0001	mg/L	0.10000		101	80-120			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000		109	80-120			
Nickel	0.101	0.0050	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.113	0.0100	0.0010	mg/L	0.10000		113	80-120			
Silver	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000		101	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	0.108	0.0500	0.0021	mg/L	0.10000		108	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
Batch 6100710 - EPA 3005A											
Matrix Spike (6100710-MS1)			Source: AZJ0696-05			Prepared: 10/27/16 Analyzed: 10/29/16					
Antimony	0.113	0.0030	0.0008	mg/L	0.10000	ND	113	75-125			
Arsenic	0.118	0.0050	0.0016	mg/L	0.10000	0.0058	112	75-125			
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0208	105	75-125			
Beryllium	0.0942	0.0150	0.0004	mg/L	0.10000	0.0005	94	75-125			
Boron	15.6	0.500	0.0321	mg/L	1.0000	13.7	199	75-125			QM-02
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	0.0002	101	75-125			
Calcium	574	50.0	3.11	mg/L	1.0000	564	953	75-125			QM-02
Chromium	0.109	0.0100	0.0009	mg/L	0.10000	ND	109	75-125			
Cobalt	0.129	0.0100	0.0005	mg/L	0.10000	0.0253	103	75-125			
Copper	0.0950	0.0050	0.0005	mg/L	0.10000	ND	95	75-125			
Lead	0.0922	0.0050	0.0001	mg/L	0.10000	0.0016	91	75-125			
Molybdenum	0.112	0.0100	0.0017	mg/L	0.10000	ND	112	75-125			
Nickel	0.105	0.0050	0.0006	mg/L	0.10000	0.0063	98	75-125			
Selenium	0.130	0.0100	0.0010	mg/L	0.10000	0.0135	116	75-125			
Silver	0.0937	0.0100	0.0005	mg/L	0.10000	ND	94	75-125			
Thallium	0.0937	0.0010	0.0002	mg/L	0.10000	0.0004	93	75-125			
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000	0.0054	103	75-125			
Lithium	0.105	0.250	0.0103	mg/L	0.10000	ND	105	75-125			J
Matrix Spike Dup (6100710-MSD1)			Source: AZJ0696-05			Prepared: 10/27/16 Analyzed: 10/29/16					
Antimony	0.110	0.0030	0.0008	mg/L	0.10000	ND	110	75-125	2	20	
Arsenic	0.114	0.0050	0.0016	mg/L	0.10000	0.0058	108	75-125	3	20	
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0208	105	75-125	0.01	20	
Beryllium	0.0949	0.0150	0.0004	mg/L	0.10000	0.0005	94	75-125	0.7	20	
Boron	15.6	0.500	0.0321	mg/L	1.0000	13.7	192	75-125	0.4	20	QM-02
Cadmium	0.100	0.0010	0.00007	mg/L	0.10000	0.0002	100	75-125	1	20	
Calcium	566	50.0	3.11	mg/L	1.0000	564	146	75-125	1	20	QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125	2	20	
Cobalt	0.127	0.0100	0.0005	mg/L	0.10000	0.0253	102	75-125	1	20	
Copper	0.0927	0.0050	0.0005	mg/L	0.10000	ND	93	75-125	2	20	
Lead	0.0898	0.0050	0.0001	mg/L	0.10000	0.0016	88	75-125	3	20	
Molybdenum	0.110	0.0100	0.0017	mg/L	0.10000	ND	110	75-125	2	20	
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	0.0063	98	75-125	0.8	20	
Selenium	0.124	0.0100	0.0010	mg/L	0.10000	0.0135	110	75-125	5	20	
Silver	0.0921	0.0100	0.0005	mg/L	0.10000	ND	92	75-125	2	20	
Thallium	0.0914	0.0010	0.0002	mg/L	0.10000	0.0004	91	75-125	2	20	
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125	1	20	
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	0.0054	99	75-125	4	20	
Lithium	0.102	0.250	0.0103	mg/L	0.10000	ND	102	75-125	2	20	J



PACE ANALYTICAL SERVICES, INC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2016

Report No.: AZJ0697

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100710 - EPA 3005A											
Post Spike (6100710-PS1)				Source: AZJ0696-05			Prepared: 10/27/16 Analyzed: 10/29/16				
Antimony	109			ug/L	100.00	0.588	108	80-120			
Arsenic	113			ug/L	100.00	5.81	107	80-120			
Barium	124			ug/L	100.00	20.8	103	80-120			
Beryllium	96.2			ug/L	100.00	0.500	96	80-120			
Boron	16000			ug/L	1000.0	13700	233	80-120			QM-02
Cadmium	95.0			ug/L	100.00	0.172	95	80-120			
Calcium	585000			ug/L	1000.0	564000	NR	80-120			QM-02
Chromium	108			ug/L	100.00	0.110	108	80-120			
Cobalt	126			ug/L	100.00	25.3	101	80-120			
Copper	91.0			ug/L	100.00	0.183	91	80-120			
Lead	88.5			ug/L	100.00	1.57	87	80-120			
Molybdenum	109			ug/L	100.00	0.199	109	80-120			
Nickel	104			ug/L	100.00	6.33	98	80-120			
Selenium	128			ug/L	100.00	13.5	115	80-120			
Silver	91.0			ug/L	100.00	0.0447	91	80-120			
Thallium	90.1			ug/L	100.00	0.369	90	80-120			
Vanadium	109			ug/L	100.00	-0.296	110	80-120			
Zinc	103			ug/L	100.00	5.40	97	80-120			
Lithium	106			ug/L	100.00	0.650	105	80-120			

Batch 6100740 - EPA 7470A

Blank (6100740-BLK1)				Prepared & Analyzed: 10/28/16							
Mercury	ND	0.00050	0.000041	mg/L							
LCS (6100740-BS1)				Prepared & Analyzed: 10/28/16							
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

November 02, 2016

Report No.: AZJ0697

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100740 - EPA 7470A											
Matrix Spike (6100740-MS1)			Source: AZJ0702-01			Prepared & Analyzed: 10/28/16					
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125			
Matrix Spike Dup (6100740-MSD1)			Source: AZJ0702-01			Prepared & Analyzed: 10/28/16					
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	2	20	
Post Spike (6100740-PS1)			Source: AZJ0702-01			Prepared & Analyzed: 10/28/16					
Mercury	1.70			ug/L	1.6667	0.00850	101	80-120			



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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 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-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.



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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2016

Report Notes

The metals for HGWA-113 was pH adjusted by the Lab with HNO₃. MMR



PACE ANALYTICAL SERVICES, INC.

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

LOG-IN CHECKLIST

Printed: 11/2/2016 4:33:07PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/25/16 14:10

Work Order: AZJ0697

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 3

#Containers: 9

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:

The metals for HGWA-113 was pH adjusted by the Lab with HNO3. MMR

November 30, 2016

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 30200506

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 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 Hammond
Pace Project No.: 30200506

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 Hammond
Pace Project No.: 30200506

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30200506001	HGWA-112	Water	10/24/16 12:44	10/26/16 10:30
30200506002	HGWA-113	Water	10/24/16 14:11	10/26/16 10:30
30200506003	HGWC-103	Water	10/24/16 15:27	10/26/16 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 30200506

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30200506001	HGWA-112	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30200506002	HGWA-113	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30200506003	HGWC-103	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 Hammond

Pace Project No.: 30200506

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-112		Lab ID: 30200506001	Collected: 10/24/16 12:44	Received: 10/26/16 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	0.134 ± 0.240 (0.546)	pCi/L	11/09/16 07:01	13982-63-3		
Radium-228	EPA 9320	1.17 ± 0.479 (0.778)	pCi/L	11/28/16 15:22	15262-20-1		
Total Radium	Total Radium Calculation	1.30 ± 0.719 (1.32)	pCi/L	11/29/16 16:28	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-113		Lab ID: 30200506002	Collected: 10/24/16 14:11	Received: 10/26/16 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	0.0494 ± 0.193 (0.482)	pCi/L	11/09/16 07:01	13982-63-3		
Radium-228	EPA 9320	0.930 ± 0.438 (0.739)	pCi/L	11/28/16 15:22	15262-20-1		
Total Radium	Total Radium Calculation	0.979 ± 0.631 (1.22)	pCi/L	11/29/16 16:28	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-103		Lab ID: 30200506003	Collected: 10/24/16 15:27	Received: 10/26/16 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	0.124 ± 0.192 (0.422)	pCi/L	11/09/16 07:01	13982-63-3		
Radium-228	EPA 9320	0.890 ± 0.434 (0.748)	pCi/L	11/28/16 15:22	15262-20-1		
Total Radium	Total Radium Calculation	1.01 ± 0.626 (1.17)	pCi/L	11/29/16 16:28	7440-14-4		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200506

QC Batch: 239218

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30200506001, 30200506002, 30200506003

METHOD BLANK: 1175535

Matrix: Water

Associated Lab Samples: 30200506001, 30200506002, 30200506003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0550 ± 0.118 (0.398) C:85% T:NA	pCi/L	11/09/16 06:59	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200506

QC Batch: 239882 Analysis Method: EPA 9320

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

Associated Lab Samples: 30200506001, 30200506002, 30200506003

METHOD BLANK: 1178558 Matrix: Water

Associated Lab Samples: 30200506001, 30200506002, 30200506003

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

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 30200506

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#: 30200506



Chain of Custody



Workorder: AZ10697		Workorder Name: Plant-Hammond		Owner Received Date:		Results Requested By: 11/28/2016	
Report To:		Subcontract To:		Requested Analysis			
Betsy McDaniel		Pace - Pittsburgh					
Pace Analytical Atlanta		1638 Roseytown Road					
110 Technology Parkway		Stes. 2,3,4					
Peachtree Corners, GA 30092		Greensburg, PA 15601					
Phone (770)-734-4200		Phone (724) 850-5600					
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	LAB USE ONLY
1	HGWA-112	G	10/24/2016 12:44	AZ10697-01	GW	1	001
2	HGWA-113	G	10/24/2016 14:11	AZ10697-02	GW	1	002
3	HGWC-103	G	10/24/2016 15:27	AZ10697-03	GW	1	003
4							
5							
6							
7							
8							
9							
10							
Transfers Released By		Date/Time		Received By		Date/Time	
1		10/25/16		M. Dabman		10-26-16 1030	
2							
3							
Comments							

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

30200506

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



CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power
 CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239
 REPORT TO: Joju Abraham CC: Maria Padilla Heath McCorkle
 REQUESTED COMPLETION DATE: laburch@southernco.com
 PROJECT NAME/STATE: Plant Hammond - AP 3&4
 PROJECT #: CCR

Collection DATE	Collection TIME	MATRIX CODE*	SAMPLE IDENTIFICATION			ANALYSIS REQUESTED	CONTAINER TYPE	# of CONTAINERS
			C O M P	G R A B				
10/24/16	12:44	GW	X			(EPA 6020/7470) Metals Part 257 App. III & IV Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)	3	
10/24/16	14:11	GW	X				3	
10/24/16	15:27	GW	X				3	

CONTAINER TYPE: P - PLASTIC, A - AMBER GLASS, G - CLEAR GLASS, V - VOA VIAL, S - STERILE, O - OTHER
 PRESERVATION: 1 - HCl, ≤6°C, 2 - H₂SO₄, ≤6°C, 3 - HNO₃, 4 - NaOH, ≤6°C, 5 - NaOH/ZnAc, ≤6°C, 6 - Na₂S₂O₃, ≤6°C, 7 - ≤6°C not frozen
 MATRIX CODES: DW - DRINKING WATER, WW - WASTEWATER, GW - GROUNDWATER, SW - SURFACE WATER, ST - STORM WATER, W - WATER, S - SOIL, SL - SLUDGE, SD - SOLID, A - AIR, L - LIQUID, P - PRODUCT
 REMARKS/ADDITIONAL INFORMATION

RELINQUISHED BY: T. Wardell, TW
 DATE/TIME: 10/24/2016 17:00
 RELINQUISHED BY: [Signature]
 DATE/TIME: 10/24/16 13:00

SAMPLED BY AND TITLE: [Signature]
 RECEIVED BY: [Signature]
 DATE/TIME: 10/25/16 14:10
 pH checked: Yes
 Temperature: 16 Min, 16 Max

RECEIVED BY LAB: [Signature]
 DATE/TIME: 10/25/16 14:10
 Temperature: 16 Min, 16 Max

RELINQUISHED VIA: UPS, FED-EX, USPS, COURIER, OTHER
 SAMPLE SHIPPED VIA: COURIER, # of Coolers: 1, Cooler ID: FS

LAB #: [Signature] FOR LAB USE ONLY
 Entered into LIMS: [Signature]
 Tracking #: [Signature]

20161024 Hammond COC.xlsx

Sample Condition Upon Receipt Pittsburgh



Client Name: PACE GA Project # 30200506

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: MSTR 60812 5100 0382

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: NA °C Final Temp: NA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10-26-10 TAW

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>NO TIME</u>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" 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 checked="" 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 checked="" 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>PA < 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>TAW</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 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>TAW</u> Date: <u>10-26-10</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: JILW
Date: 11/22/2016
Worklist: 32406
Matrix: DW

Method Blank Assessment	
MB Sample ID	1178558
MB concentration:	0.610
M/B Counting Uncertainty:	0.383
MB MDC:	0.756
MB Numerical Performance Indicator:	3.12
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	11/28/2016
Spike I.D.:	16-027
Spike Concentration (pCi/mL):	25.962
Volume Used (mL):	0.20
Aliquot Volume (L, g, F):	0.813
Target Conc. (pCi/L, g, F):	6.385
Uncertainty (Calculated):	0.460
Result (pCi/L, g, F):	8.119
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.744
Numerical Performance Indicator:	3.89
Percent Recovery:	127.15%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30200749001
Duplicate Sample I.D.:	30200749001DUP
Sample Result (pCi/L, g, F):	1.763
Sample Result Counting Uncertainty (pCi/L, g, F):	0.390
Sample Duplicate Result (pCi/L, g, F):	2.026
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.427
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	-0.892
Duplicate RPD:	13.88%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

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

Comments:

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	Sample I.D.
Sample MS I.D.:	Sample MS I.D.
Sample MSD I.D.:	Sample MSD I.D.
Sample Matrix Spike Result:	Sample Matrix Spike Result
Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result
Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:	MS/MSD Duplicate Status vs RPD:

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Quality Control Sample Performance Assessment

Test: Ra-226

Analyst: JC2
Date: 11/8/2016
Worklist: 32293
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment

MB Sample ID	1175535
MB concentration:	-0.055
M/B Counting Uncertainty:	0.118
MB MDC:	0.398
MB Numerical Performance Indicator:	N/A
MB Status vs Numerical Indicator:	Pass

Laboratory Control Sample Assessment

LCS (Y or N)? N
LCSID 32293

Count Date:	11/9/2016
Spike ID:	16-026
Spike Concentration (pCi/mL):	44.675
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.501
Target Conc. (pCi/L, g, F):	8.926
Uncertainty (Calculated):	0.420
Result (pCi/L, g, F):	7.610
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.866
Numerical Performance Indicator:	-2.88
Percent Recovery:	85.26%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment

Sample ID:	30200502001
Duplicate Sample ID:	30200502001DUP
Sample Result (pCi/L, g, F):	0.981
Sample Duplicate Result (pCi/L, g, F):	0.372
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	1.175
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.387
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	-0.700
Duplicate RPD:	18.00%
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.
30200502001
30200502001DUP

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 Matrix Spike Result:
Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample 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:
Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
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:

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PACE ANALYTICAL SERVICES, INC.

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

Laboratory Report

Prepared For:

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

Attention: Mr. Joju Abraham

Report Number: AZJ0726

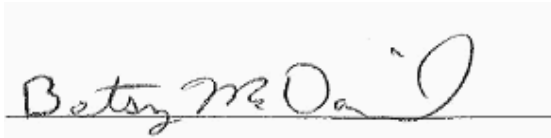
November 07, 2016

Project: CCR Event

Project #:Plant Hammond

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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Environmental Monitoring & Laboratory Analysis
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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWC-105	AZJ0726-01	Ground Water	10/25/16 09:45	10/26/16 11:50
HGWC-107	AZJ0726-02	Ground Water	10/25/16 10:38	10/26/16 11:50
HGWC-109	AZJ0726-03	Ground Water	10/25/16 10:37	10/26/16 11:50



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

Project: CCR Event

Client ID: HGWC-105

Lab Number ID: AZJ0726-01

Date/Time Sampled: 10/25/2016 9:45:00AM

Date/Time Received: 10/26/2016 11:50:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	316	25	10	mg/L	SM 2540 C		1	10/27/16 16:30	10/27/16 16:30	6100729	JPT
Inorganic Anions											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	10/27/16 14:24	10/28/16 23:06	6100735	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	10/27/16 14:24	10/28/16 23:06	6100735	RLC
Sulfate	190	10	0.51	mg/L	EPA 300.0		10	10/27/16 14:24	11/02/16 22:13	6100735	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Barium	0.0745	0.0100	0.0004	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Boron	1.21	0.100	0.0064	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Calcium	72.5	5.00	0.311	mg/L	EPA 6020B		10	10/28/16 09:30	11/02/16 15:04	6100754	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Cobalt	0.0013	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Lithium	0.0043	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 13:22	6100754	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 14:17	6100745	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

Project: CCR Event

Client ID: HGWC-107

Lab Number ID: AZJ0726-02

Date/Time Sampled: 10/25/2016 10:38:00AM

Date/Time Received: 10/26/2016 11:50:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	223	25	10	mg/L	SM 2540 C		1	10/27/16 16:30	10/27/16 16:30	6100729	JPT
Inorganic Anions											
Chloride	3.2	0.25	0.01	mg/L	EPA 300.0		1	10/27/16 14:24	10/29/16 00:49	6100735	RLC
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	10/27/16 14:24	10/29/16 00:49	6100735	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	10/27/16 14:24	11/02/16 22:34	6100735	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Barium	0.0410	0.0100	0.0004	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Boron	0.778	0.100	0.0064	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Cadmium	0.00008	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Calcium	49.0	5.00	0.311	mg/L	EPA 6020B		10	10/28/16 09:30	11/02/16 15:10	6100754	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:28	6100754	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 14:20	6100745	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

Project: CCR Event

Client ID: HGWC-109

Lab Number ID: AZJ0726-03

Date/Time Sampled: 10/25/2016 10:37:00AM

Date/Time Received: 10/26/2016 11:50:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	172	25	10	mg/L	SM 2540 C		1	10/27/16 16:30	10/27/16 16:30	6100729	JPT
Inorganic Anions											
Chloride	4.8	0.25	0.01	mg/L	EPA 300.0		1	10/27/16 14:24	10/29/16 01:10	6100735	RLC
Fluoride	0.17	0.30	0.02	mg/L	EPA 300.0	J	1	10/27/16 14:24	10/29/16 01:10	6100735	RLC
Sulfate	41	1.0	0.05	mg/L	EPA 300.0		1	10/27/16 14:24	10/29/16 01:10	6100735	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Arsenic	0.0030	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Barium	0.0831	0.0100	0.0004	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Boron	0.372	0.100	0.0064	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Calcium	35.4	5.00	0.311	mg/L	EPA 6020B		10	10/28/16 09:30	11/02/16 15:16	6100754	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Cobalt	0.0017	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 13:51	6100754	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 14:22	6100745	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100729 - SM 2540 C											
Blank (6100729-BLK1)						Prepared & Analyzed: 10/27/16					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (6100729-BS1)						Prepared & Analyzed: 10/27/16					
Total Dissolved Solids	360	25	10	mg/L	400.00		90	84-108			
Duplicate (6100729-DUP1)						Source: AZJ0726-03 Prepared & Analyzed: 10/27/16					
Total Dissolved Solids	179	25	10	mg/L		172			4	10	
Duplicate (6100729-DUP2)						Source: AZJ0727-02 Prepared & Analyzed: 10/27/16					
Total Dissolved Solids	567	25	10	mg/L		563			0.7	10	



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November 07, 2016

Report No.: AZJ0726

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100735 - EPA 300.0											
Blank (6100735-BLK1)						Prepared: 10/27/16 Analyzed: 10/28/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
LCS (6100735-BS1)						Prepared: 10/27/16 Analyzed: 10/28/16					
Chloride	10.1	0.25	0.01	mg/L	10.010		101	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	10.1	1.0	0.05	mg/L	10.020		101	90-110			
Matrix Spike (6100735-MS1)						Source: AZJ0710-05 Prepared: 10/27/16 Analyzed: 10/28/16					
Chloride	10.8	0.25	0.01	mg/L	10.010	1.17	96	90-110			
Fluoride	9.73	0.30	0.02	mg/L	10.020	0.04	97	90-110			
Sulfate	10.4	1.0	0.05	mg/L	10.020	0.74	97	90-110			
Matrix Spike (6100735-MS2)						Source: AZJ0726-03 Prepared: 10/27/16 Analyzed: 10/29/16					
Chloride	14.1	0.25	0.01	mg/L	10.010	4.81	93	90-110			
Fluoride	9.53	0.30	0.02	mg/L	10.020	0.17	93	90-110			
Sulfate	40.1	1.0	0.05	mg/L	10.020	40.7	NR	90-110			QM-02
Matrix Spike Dup (6100735-MSD1)						Source: AZJ0710-05 Prepared: 10/27/16 Analyzed: 10/28/16					
Chloride	11.5	0.25	0.01	mg/L	10.010	1.17	103	90-110	6	15	
Fluoride	10.6	0.30	0.02	mg/L	10.020	0.04	105	90-110	9	15	
Sulfate	11.2	1.0	0.05	mg/L	10.020	0.74	104	90-110	7	15	



PACE ANALYTICAL SERVICES, INC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100745 - EPA 7470A											
Blank (6100745-BLK1)						Prepared & Analyzed: 10/28/16					
Mercury	ND	0.00050	0.000041	mg/L							
LCS (6100745-BS1)						Prepared & Analyzed: 10/28/16					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
Matrix Spike (6100745-MS1)						Source: AZJ0710-06 Prepared & Analyzed: 10/28/16					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125			
Matrix Spike Dup (6100745-MSD1)						Source: AZJ0710-06 Prepared & Analyzed: 10/28/16					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125	0.5	20	
Post Spike (6100745-PS1)						Source: AZJ0710-06 Prepared & Analyzed: 10/28/16					
Mercury	1.70			ug/L	1.6667	0.00854	102	80-120			
Batch 6100754 - EPA 3005A											
Blank (6100754-BLK1)						Prepared: 10/28/16 Analyzed: 10/31/16					
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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 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100754 - EPA 3005A											
LCS (6100754-BS1)						Prepared: 10/28/16 Analyzed: 10/31/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.0981	0.0050	0.0016	mg/L	0.10000		98	80-120			
Barium	0.0998	0.0100	0.0004	mg/L	0.10000		100	80-120			
Beryllium	0.0990	0.0030	0.00008	mg/L	0.10000		99	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000		100	80-120			
Calcium	1.00	0.500	0.0311	mg/L	1.0000		100	80-120			
Chromium	0.0995	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.0981	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.0960	0.0050	0.0005	mg/L	0.10000		96	80-120			
Lead	0.0998	0.0050	0.0001	mg/L	0.10000		100	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.0975	0.0050	0.0006	mg/L	0.10000		98	80-120			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000		103	80-120			
Silver	0.103	0.0050	0.0005	mg/L	0.10000		103	80-120			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000		102	80-120			
Vanadium	0.0975	0.0100	0.0071	mg/L	0.10000		98	80-120			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000		106	80-120			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000		101	80-120			
Matrix Spike (6100754-MS1)											
				Source: AZJ0710-07		Prepared: 10/28/16 Analyzed: 10/31/16					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	ND	107	75-125			
Arsenic	0.0981	0.0050	0.0016	mg/L	0.10000	ND	98	75-125			
Barium	0.128	0.0100	0.0004	mg/L	0.10000	0.0271	101	75-125			
Beryllium	0.0975	0.0030	0.00008	mg/L	0.10000	0.00009	97	75-125			
Boron	1.04	0.100	0.0064	mg/L	1.0000	ND	104	75-125			
Cadmium	0.0988	0.0010	0.00007	mg/L	0.10000	0.0001	99	75-125			
Calcium	32.3	2.50	0.155	mg/L	1.0000	30.2	208	75-125			QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.0968	0.0050	0.0005	mg/L	0.10000	ND	97	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	0.0001	100	75-125			
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000	ND	107	75-125			
Nickel	0.100	0.0050	0.0006	mg/L	0.10000	0.0006	100	75-125			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125			
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125			
Vanadium	0.107	0.0100	0.0071	mg/L	0.10000	ND	107	75-125			
Zinc	0.146	0.0100	0.0021	mg/L	0.10000	0.0402	105	75-125			
Lithium	0.102	0.0500	0.0021	mg/L	0.10000	ND	102	75-125			



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0726

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100754 - EPA 3005A											
Matrix Spike Dup (6100754-MSD1)			Source: AZJ0710-07			Prepared: 10/28/16 Analyzed: 10/31/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125	2	20	
Arsenic	0.0989	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	0.9	20	
Barium	0.129	0.0100	0.0004	mg/L	0.10000	0.0271	101	75-125	0.4	20	
Beryllium	0.0954	0.0030	0.00008	mg/L	0.10000	0.00009	95	75-125	2	20	
Boron	0.985	0.100	0.0064	mg/L	1.0000	ND	99	75-125	5	20	
Cadmium	0.0995	0.0010	0.00007	mg/L	0.10000	0.0001	99	75-125	0.7	20	
Calcium	32.2	2.50	0.155	mg/L	1.0000	30.2	197	75-125	0.4	20	QM-02
Chromium	0.106	0.0100	0.0009	mg/L	0.10000	ND	106	75-125	1	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Copper	0.0990	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	0.0001	100	75-125	0.3	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	0.8	20	
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0006	101	75-125	1	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	0.9	20	
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125	0.1	20	
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	0.005	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.149	0.0100	0.0021	mg/L	0.10000	0.0402	109	75-125	3	20	
Lithium	0.0977	0.0500	0.0021	mg/L	0.10000	ND	98	75-125	5	20	
Post Spike (6100754-PS1)			Source: AZJ0710-07			Prepared: 10/28/16 Analyzed: 10/31/16					
Antimony	97.4			ug/L	100.00	0.314	97	80-120			
Arsenic	102			ug/L	100.00	0.144	102	80-120			
Barium	125			ug/L	100.00	27.1	97	80-120			
Beryllium	101			ug/L	100.00	0.0908	101	80-120			
Boron	1020			ug/L	1000.0	6.19	101	80-120			
Cadmium	101			ug/L	100.00	0.113	101	80-120			
Calcium	32400			ug/L	1000.0	30200	220	80-120			QM-02
Chromium	103			ug/L	100.00	0.860	102	80-120			
Cobalt	100			ug/L	100.00	0.0677	100	80-120			
Copper	95.2			ug/L	100.00	0.178	95	80-120			
Lead	98.2			ug/L	100.00	0.145	98	80-120			
Molybdenum	105			ug/L	100.00	0.161	105	80-120			
Nickel	95.9			ug/L	100.00	0.590	95	80-120			
Selenium	105			ug/L	100.00	0.123	105	80-120			
Silver	103			ug/L	100.00	0.0110	103	80-120			
Thallium	102			ug/L	100.00	0.0377	102	80-120			
Vanadium	103			ug/L	100.00	0.451	102	80-120			
Zinc	143			ug/L	100.00	40.2	103	80-120			
Lithium	103			ug/L	100.00	0.622	103	80-120			



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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 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).

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 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239 REPORT TO: Joju Abraham CC: Maria Padilla Heath McCorkle REQUESTED COMPLETION DATE: laburch@southernco.com PROJECT NAME/STATE: Plant Hammond - AP 384 PROJECT #: CCR		ANALYSIS REQUESTED P P P 3 7 3 Metals Part 257 App. III & IV (EPA 6020/7470) Cl, SO ₄ & TDS (EPA 300.D & SM 2540C) Radium 226 & 228 (SM-846 9315/9320)		CONTAINER TYPE PRESERVATION: # of 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 ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen	
CONTAINER TYPE DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORM WATER W - WATER MATRIX CODES: S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT REMARKS/ADDITIONAL INFORMATION		LAB #: AZJ0726 Entered into LIMS: Tracking #:		FOR LAB USE ONLY			
RELINQUISHED BY: <i>MFL</i> DATE/TIME: 10/25/16 11:50		RELINQUISHED BY: DATE/TIME:		DATE/TIME: 10-25-16 11:50 DATE/TIME:			
SAMPLED BY AND TITLE: T. Wardell, 2722 M. Rogers #7 R RECEIVED BY:		SAMPLE SHIPPED VIA: UPS FED-EX Custody Seal: Intact Broken Not Present Courier # or Coolers: <i>NA</i> Client Cooler ID:		DATE/TIME: 10/25/16 11:50 Temperature: 10°C Min. Max.			
RECEIVED BY LAB: <i>W. Salaman</i> (Signature) No Yes No NA (Initials)		RECEIVED BY:		DATE/TIME: 10/25/16 11:50 Temperature: 10°C Min. Max.			



PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
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LOG-IN CHECKLIST

Printed: 11/7/2016 3:38:41PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/26/16 11:50

Work Order: AZJ0726

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 3

#Containers: 9

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:

November 30, 2016

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 30200747

Dear Maria Padilla:

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

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

Sincerely,



Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 30200747

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 Hammond
Pace Project No.: 30200747

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30200747001	HGWC-105	Water	10/25/16 09:45	10/27/16 09:30
30200747002	HGWC-107	Water	10/25/16 10:38	10/27/16 09:30
30200747003	HGWC-109	Water	10/25/16 10:37	10/27/16 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 30200747

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30200747001	HGWC-105	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30200747002	HGWC-107	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30200747003	HGWC-109	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 Hammond

Pace Project No.: 30200747

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-105		Lab ID: 30200747001	Collected: 10/25/16 09:45	Received: 10/27/16 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226		EPA 9315	0.0318 ± 0.112 (0.272) C:95% T:NA	pCi/L	11/09/16 07:10	13982-63-3	
Radium-228		EPA 9320	1.000 ± 0.390 (0.546) C:79% T:81%	pCi/L	11/28/16 15:23	15262-20-1	
Total Radium		Total Radium Calculation	1.03 ± 0.502 (0.818)	pCi/L	11/29/16 16:28	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-107		Lab ID: 30200747002	Collected: 10/25/16 10:38	Received: 10/27/16 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226		EPA 9315	0.154 ± 0.180 (0.375) C:88% T:NA	pCi/L	11/09/16 07:10	13982-63-3	
Radium-228		EPA 9320	0.952 ± 0.451 (0.747) C:77% T:71%	pCi/L	11/28/16 15:23	15262-20-1	
Total Radium		Total Radium Calculation	1.11 ± 0.631 (1.12)	pCi/L	11/29/16 16:28	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-109		Lab ID: 30200747003	Collected: 10/25/16 10:37	Received: 10/27/16 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226		EPA 9315	0.163 ± 0.151 (0.280) C:86% T:NA	pCi/L	11/09/16 07:10	13982-63-3	
Radium-228		EPA 9320	0.903 ± 0.385 (0.609) C:82% T:85%	pCi/L	11/28/16 15:23	15262-20-1	
Total Radium		Total Radium Calculation	1.07 ± 0.536 (0.889)	pCi/L	11/29/16 16:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200747

QC Batch: 239219 Analysis Method: EPA 9315

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

Associated Lab Samples: 30200747001, 30200747002, 30200747003

METHOD BLANK: 1175537 Matrix: Water

Associated Lab Samples: 30200747001, 30200747002, 30200747003

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30200747

QC Batch: 239882 Analysis Method: EPA 9320

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

Associated Lab Samples: 30200747001, 30200747002, 30200747003

METHOD BLANK: 1178558 Matrix: Water

Associated Lab Samples: 30200747001, 30200747002, 30200747003

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

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 30200747

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#: 30200747



30200747

Chain of Custody



Workorder: AZ10726 Workorder Name: Plant Hammond Owner Received Date: Results Requested By: 11/28/2016

Report To:		Subcontract To:		Requested Analysis			
Betsy McDaniel		Pace - Pittsburgh					
Pace Analytical Atlanta		1638 Roseytown Road					
110 Technology Parkway		Stes. 2,3,4					
Peachtree Corners, GA 30092		Greensburg, PA 15601					
Phone (770)-734-4200		Phone (724) 850-5600					
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	LAB USE ONLY
1	HGWC-105	G	10/25/2016 9:45	AZ10726-01	GW	1	001
2	HGWC-107	G	10/25/2016 10:38	AZ10726-02	GW	1	002
3	HGWC-109	G	10/25/2016 10:37	AZ10726-03	GW	1	003
4							
5							
6							
7							
8							
9							
10							
					Radium 226, 228, Total		
Transfers Released By		Date/Time	Received By	Date/Time	Comments		
1			<i>[Signature]</i>	10-27-16 9:38			
2							
3							

Cooler Temperature on Receipt NA °C Custody Seal Y or N (N) Received on Ice Y or N (N) Sample Intact Y or N (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 Georgia

Project # 30200747

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 10812 5100 0599

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: KJK 10-27-16

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>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>10-27-16</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

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

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

Laboratory Control Sample Assessment	
Count Date:	11/9/2016
Spike I.D.:	16-026
Spike Concentration (pCi/mL):	44.675
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.506
Target Conc. (pCi/L, g, F):	8.836
Uncertainty (Calculated):	0.416
Result (pCi/L, g, F):	7.443
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.860
Numerical Performance Indicator:	-2.86
Percent Recovery:	84.23%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30200749001
Duplicate Sample I.D.:	30200749001DUP
Sample Result (pCi/L, g, F):	0.927
Sample Result Counting Uncertainty (pCi/L, g, F):	0.267
Sample Duplicate Result (pCi/L, g, F):	1.134
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:	-0.917
Duplicate RPD:	20.13%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

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

Comments:

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
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:	
Sample Matrix Spike Duplicate 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:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JLW
Date: 11/22/2016
Worklist: 32406
Matrix: DW



Method Blank Assessment

MB Sample ID: 1178558
MB concentration: 0.610
MB Counting Uncertainty: 0.383
MB MDC: 0.756
MB Numerical Performance Indicator: 3.12
MB Status vs Numerical Indicator: N/A
MB Status vs. MDC: Pass

Laboratory Control Sample Assessment

LCSID (Y or N): N
LCSID: LCS32406

Count Date: 11/28/2016
Spike I.D.: 16-027
Spike Concentration (pCi/mL): 25.962
Aliquot Volume (mL): 0.20
Target Conc. (pCi/L, g, F): 0.813
Uncertainty (Calculated): 0.460
Result (pCi/L, g, F): 8.119
LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.744
Numerical Performance Indicator: 3.89
Percent Recovery: 127.15%
Status vs Numerical Indicator: N/A
Status vs Recovery: Pass

Duplicate Sample Assessment

Sample I.D.: 30200749001
Duplicate Sample I.D.: 30200749001DUP
Sample Result Counting Uncertainty (pCi/L, g, F): 1.763
Sample Duplicate Result (pCi/L, g, F): 0.390
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 2.026
Are sample and/or duplicate results below MDC? See Below ##
Duplicate Numerical Performance Indicator: -0.892
Duplicate RPD: 13.88%
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.
30200749001
30200749001DUP

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

Comments:

Sample Matrix Spike Control Assessment

Sample Collection Date:
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:

MS/MSD Decay Corrected Spike Concentration (pCi/mL):
Spike I.D.:
Spike Volume Used in MS (mL):
Spike Volume Used in MSD (mL):
MS Aliquot (L, g, F):
MS Target Conc. (pCi/L, g, F):
MSD Aliquot (L, g, F):
MSD Target Conc. (pCi/L, g, F):
Spike uncertainty (calculated):

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:

Handwritten 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: AAA0861

February 03, 2017

Project: CCR Event

Project #: Plant Hammond

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

February 03, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-111	AAA0861-01	Ground Water	01/25/17 10:35	01/26/17 12:05
HGWA-112	AAA0861-02	Ground Water	01/25/17 11:10	01/26/17 12:05
HGWA-113	AAA0861-03	Ground Water	01/25/17 12:53	01/26/17 12:05
HGWA-122	AAA0861-04	Ground Water	01/25/17 13:20	01/26/17 12:05



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 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0861

Project: CCR Event

Client ID: HGWA-111

Lab Number ID: AAA0861-01

Date/Time Sampled: 1/25/2017 10:35:00AM

Date/Time Received: 1/26/2017 12:05:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	345	25	10	mg/L	SM 2540 C		1	01/30/17 16:05	01/30/17 16:05	7010738	JPT
Inorganic Anions											
Chloride	2.7	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 19:49	7010718	RLC
Fluoride	0.14	0.30	0.004	mg/L	EPA 300.0	J	1	01/27/17 16:22	01/27/17 19:49	7010718	RLC
Sulfate	1.6	1.0	0.09	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 19:49	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Barium	0.0304	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:03	7010760	CSW
Boron	0.0095	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Calcium	44.6	25.0	1.55	mg/L	EPA 6020B		50	01/31/17 10:00	01/31/17 19:08	7010760	CSW
Chromium	0.0029	0.0100	0.0009	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:02	7010760	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:03	7010760	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	01/31/17 11:00	01/31/17 15:21	7010766	MTC



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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

February 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0861

Project: CCR Event

Client ID: HGWA-112

Lab Number ID: AAA0861-02

Date/Time Sampled: 1/25/2017 11:10:00AM

Date/Time Received: 1/26/2017 12:05:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	152	25	10	mg/L	SM 2540 C		1	01/30/17 16:05	01/30/17 16:05	7010738	JPT
Inorganic Anions											
Chloride	5.0	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 20:10	7010718	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 20:10	7010718	RLC
Sulfate	0.62	1.0	0.09	mg/L	EPA 300.0	J	1	01/27/17 16:22	01/27/17 20:10	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Barium	0.0252	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:09	7010760	CSW
Boron	0.0075	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Calcium	6.58	2.50	0.155	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 15:55	7010760	CSW
Chromium	0.0038	0.0100	0.0009	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:25	7010760	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:09	7010760	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	01/31/17 11:00	01/31/17 15:23	7010766	MTC



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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

February 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0861

Project: CCR Event

Client ID: HGWA-113

Lab Number ID: AAA0861-03

Date/Time Sampled: 1/25/2017 12:53:00PM

Date/Time Received: 1/26/2017 12:05:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	155	25	10	mg/L	SM 2540 C		1	01/30/17 16:05	01/30/17 16:05	7010738	JPT
Inorganic Anions											
Chloride	1.9	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 20:30	7010718	RLC
Fluoride	0.15	0.30	0.004	mg/L	EPA 300.0	J	1	01/27/17 16:22	01/27/17 20:30	7010718	RLC
Sulfate	12	1.0	0.09	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 20:30	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Barium	0.0272	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:15	7010760	CSW
Boron	0.0090	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Calcium	6.87	2.50	0.155	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:01	7010760	CSW
Chromium	0.0012	0.0100	0.0009	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Selenium	0.0023	0.0100	0.0010	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:36	7010760	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:15	7010760	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	01/31/17 11:00	01/31/17 15:25	7010766	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 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0861

Project: CCR Event

Client ID: HGWA-122

Lab Number ID: AAA0861-04

Date/Time Sampled: 1/25/2017 1:20:00PM

Date/Time Received: 1/26/2017 12:05:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	371	25	10	mg/L	SM 2540 C		1	01/30/17 16:05	01/30/17 16:05	7010738	JPT
Inorganic Anions											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 20:51	7010718	RLC
Fluoride	0.22	0.30	0.004	mg/L	EPA 300.0	J	1	01/27/17 16:22	01/27/17 20:51	7010718	RLC
Sulfate	48	1.0	0.09	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 20:51	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Barium	0.0429	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:22	7010760	CSW
Boron	0.274	0.0400	0.0064	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Calcium	77.3	25.0	1.55	mg/L	EPA 6020B		50	01/31/17 10:00	01/31/17 19:54	7010760	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Molybdenum	0.0054	0.0100	0.0017	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 19:48	7010760	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/31/17 10:00	02/01/17 15:22	7010760	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	01/31/17 11:00	01/31/17 15:28	7010766	MTC



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February 03, 2017

Report No.: AAA0861

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010738 - SM 2540 C											
Blank (7010738-BLK1)						Prepared & Analyzed: 01/30/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7010738-BS1)						Prepared & Analyzed: 01/30/17					
Total Dissolved Solids	406	25	10	mg/L	400.00		102	84-108			
Duplicate (7010738-DUP1)						Source: AAA0861-02 Prepared & Analyzed: 01/30/17					
Total Dissolved Solids	131	25	10	mg/L		152			15	10	QR-03



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Attention: Mr. Joju Abraham

February 03, 2017

Report No.: AAA0861

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010718 - EPA 300.0											
Blank (7010718-BLK1)						Prepared & Analyzed: 01/27/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
LCS (7010718-BS1)						Prepared & Analyzed: 01/27/17					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.5	0.30	0.004	mg/L	10.020		105	90-110			
Sulfate	10.6	1.0	0.09	mg/L	10.020		106	90-110			
Matrix Spike (7010718-MS1)						Source: AAA0862-01 Prepared & Analyzed: 01/27/17					
Chloride	57.0	0.25	0.01	mg/L	10.010	51.6	55	90-110			QM-02
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.24	105	90-110			
Sulfate	100	1.0	0.09	mg/L	10.020	101	NR	90-110			QM-02
Matrix Spike Dup (7010718-MSD1)						Source: AAA0862-01 Prepared & Analyzed: 01/27/17					
Chloride	56.5	0.25	0.01	mg/L	10.010	51.6	50	90-110	0.9	15	QM-02
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.24	105	90-110	0.1	15	
Sulfate	101	1.0	0.09	mg/L	10.020	101	NR	90-110	0.4	15	QM-02



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Attention: Mr. Joju Abraham

February 03, 2017

Report No.: AAA0861

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010760 - EPA 3005A											
Blank (7010760-BLK1)						Prepared & Analyzed: 01/31/17					
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 (7010760-BS1)						Prepared & Analyzed: 01/31/17					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.0974	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	1.06	0.0400	0.0064	mg/L	1.0000		106	80-120			
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000		100	80-120			
Calcium	1.06	0.500	0.0311	mg/L	1.0000		106	80-120			
Chromium	0.102	0.0100	0.0009	mg/L	0.10000		102	80-120			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Copper	0.101	0.0250	0.0005	mg/L	0.10000		101	80-120			
Lead	0.102	0.0050	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.103	0.0100	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.100	0.0100	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.100	0.0010	0.0002	mg/L	0.10000		100	80-120			
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000		101	80-120			
Zinc	0.107	0.0100	0.0021	mg/L	0.10000		107	80-120			
Lithium	0.0962	0.0500	0.0021	mg/L	0.10000		96	80-120			



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 03, 2017

Report No.: AAA0861

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010760 - EPA 3005A											
Matrix Spike (7010760-MS1)			Source: AAA0909-08				Prepared & Analyzed: 01/31/17				
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	ND	106	75-125			
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	ND	109	75-125			
Barium	0.209	0.0100	0.0004	mg/L	0.10000	0.105	104	75-125			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000	ND	104	75-125			
Boron	2.78	2.00	0.321	mg/L	1.0000	1.19	159	75-125			QM-02
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	145	25.0	1.55	mg/L	1.0000	139	618	75-125			QM-02
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	0.102	0.0250	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.0985	0.0050	0.0001	mg/L	0.10000	0.0001	98	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.0994	0.0100	0.0006	mg/L	0.10000	ND	99	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125			
Silver	0.0976	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Thallium	0.0974	0.0010	0.0002	mg/L	0.10000	ND	97	75-125			
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000	ND	106	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	0.0025	102	75-125			
Lithium	0.0978	0.0500	0.0021	mg/L	0.10000	0.0028	95	75-125			
Matrix Spike Dup (7010760-MSD1)			Source: AAA0909-08				Prepared & Analyzed: 01/31/17				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125	2	20	
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000	ND	108	75-125	1	20	
Barium	0.202	0.0100	0.0004	mg/L	0.10000	0.105	97	75-125	3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125	2	20	
Boron	2.71	2.00	0.321	mg/L	1.0000	1.19	152	75-125	3	20	QM-02
Cadmium	0.0983	0.0010	0.00007	mg/L	0.10000	ND	98	75-125	3	20	
Calcium	142	25.0	1.55	mg/L	1.0000	139	298	75-125	2	20	QM-02
Chromium	0.0999	0.0100	0.0009	mg/L	0.10000	ND	100	75-125	6	20	
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	2	20	
Copper	0.0945	0.0250	0.0005	mg/L	0.10000	ND	95	75-125	7	20	
Lead	0.0990	0.0050	0.0001	mg/L	0.10000	0.0001	99	75-125	0.5	20	
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000	ND	107	75-125	0.6	20	
Nickel	0.0991	0.0100	0.0006	mg/L	0.10000	ND	99	75-125	0.3	20	
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	ND	105	75-125	2	20	
Silver	0.0974	0.0100	0.0005	mg/L	0.10000	ND	97	75-125	0.3	20	
Thallium	0.0973	0.0010	0.0002	mg/L	0.10000	ND	97	75-125	0.1	20	
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000	ND	102	75-125	4	20	
Zinc	0.0996	0.0100	0.0021	mg/L	0.10000	0.0025	97	75-125	5	20	
Lithium	0.100	0.0500	0.0021	mg/L	0.10000	0.0028	97	75-125	2	20	



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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 03, 2017

Report No.: AAA0861

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010760 - EPA 3005A											
Post Spike (7010760-PS1)			Source: AAA0909-08			Prepared & Analyzed: 01/31/17					
Antimony	92.7			ug/L	100.00	0.0220	93	80-120			
Arsenic	107			ug/L	100.00	-0.219	107	80-120			
Barium	196			ug/L	100.00	105	91	80-120			
Beryllium	105			ug/L	100.00	0.0100	105	80-120			
Boron	2660			ug/L	1000.0	1190	148	80-120			QM-02
Cadmium	100			ug/L	100.00	0.0104	100	80-120			
Calcium	143000			ug/L	1000.0	139000	377	80-120			QM-02
Chromium	107			ug/L	100.00	0.148	107	80-120			
Cobalt	102			ug/L	100.00	0.123	102	80-120			
Copper	97.5			ug/L	100.00	0.247	97	80-120			
Lead	94.5			ug/L	100.00	0.122	94	80-120			
Molybdenum	106			ug/L	100.00	0.0875	106	80-120			
Nickel	99.0			ug/L	100.00	0.284	99	80-120			
Selenium	106			ug/L	100.00	0.338	106	80-120			
Silver	93.9			ug/L	100.00	0.0015	94	80-120			
Thallium	93.8			ug/L	100.00	0.0007	94	80-120			
Vanadium	108			ug/L	100.00	-2.17	108	80-120			
Zinc	104			ug/L	100.00	2.53	101	80-120			
Lithium	100			ug/L	100.00	2.80	98	80-120			

Batch 7010766 - EPA 7470A

Blank (7010766-BLK1)				Prepared & Analyzed: 01/31/17							
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7010766-BS1)				Prepared & Analyzed: 01/31/17							
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			



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February 03, 2017

Report No.: AAA0861

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010766 - EPA 7470A											
Matrix Spike (7010766-MS1)			Source: AAA0792-01			Prepared & Analyzed: 01/31/17					
Mercury	0.00236	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
Matrix Spike Dup (7010766-MSD1)			Source: AAA0792-01			Prepared & Analyzed: 01/31/17					
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125	4	20	
Post Spike (7010766-PS1)			Source: AAA0792-01			Prepared & Analyzed: 01/31/17					
Mercury	1.66			ug/L	1.6667	0.0236	98	80-120			



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February 03, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

- 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 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 42 Inverness Center Parkway BIN B-426 Birmingham, AL 35242 205-982-5417
REPORT TO: Lauren Petty
CC: Maria Padilla Health McCorkle
PO #: laburch@southernco.com
PROJECT NAME/STATE: Plant Hammond - AP 3&4

CONTAINER TYPE	ANALYSIS REQUESTED			CONTAINER PRESERVATION	# of CONTAINERS	DATE/TIME	DATE/TIME
	P	P	P				
	3	7	3	Metals Part 257 App. III & IV (EPA 6020/7470) Cl. F. SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)	4	01/25/17 10:35	01/25/17 13:20
					4	01/25/17 11:10	
					4	01/25/17 12:53	
					4	01/25/17 13:20	

L A B I D N U M B E R	CONTAINER TYPE	PRESERVATION	REMARKS/ADDITIONAL INFORMATION
1	P - PLASTIC	1 - HCl, 56°C	
2	A - AMBER GLASS	2 - H ₂ SO ₄ , 56°C	
3	G - CLEAR GLASS	3 - HNO ₃	
4	V - VOA VIAL	4 - NaOH, 56°C	
5	S - STERILE	5 - NaOH/ZnAc, 56°C	
6	O - OTHER	6 - Na ₂ S ₂ O ₃ , 56°C	
		7 - 56°C not frozen	

RELINQUISHED BY: Will V. (ERM) **DATE/TIME:** 01/25/17 13:20

RELINQUISHED BY: *[Signature]* **DATE/TIME:** 01/25/17 13:20

SAMPLED BY AND TITLE: M. Burch W.V. W.V. **DATE/TIME:** 01/25/17 13:20

RECEIVED BY: *[Signature]* **DATE/TIME:** 01/25/17 13:20

LAB #: AAAA0861

Entered into LIMS: *[Signature]*

Tracking #:

FOR LAB USE ONLY

TEMPERATURE: 19°C

NO. NA. YES. NO. NA.

2017 01 25 Hammond COLS.XLSX



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Peachtree Corners, GA 30092
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LOG-IN CHECKLIST

Printed: 1/27/2017 1:57:22PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 01/26/17 12:05

Work Order: AAA0861

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 4

#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:

February 24, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 30209139

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on January 27, 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 Hammond

Pace Project No.: 30209139

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 Hammond

Pace Project No.: 30209139

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30209139001	HGWA-111	Water	01/25/17 10:35	01/27/17 10:00
30209139002	HGWA-112	Water	01/25/17 11:10	01/27/17 10:00
30209139003	HGWA-113	Water	01/25/17 12:53	01/27/17 10:00
30209139004	HGWA-122	Water	01/25/17 13:20	01/27/17 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 30209139

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30209139001	HGWA-111	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209139002	HGWA-112	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209139003	HGWA-113	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209139004	HGWA-122	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 Hammond

Pace Project No.: 30209139

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.0790 ± 0.0960 (0.195) C:92% T:NA	pCi/L	02/14/17 10:56	13982-63-3	
Radium-228		EPA 9320	0.809 ± 0.544 (1.04) C:68% T:71%	pCi/L	02/23/17 12:10	15262-20-1	
Total Radium		Total Radium Calculation	0.888 ± 0.640 (1.24)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.0174 ± 0.102 (0.260) C:97% T:NA	pCi/L	02/14/17 10:56	13982-63-3	
Radium-228		EPA 9320	1.02 ± 0.548 (0.991) C:72% T:71%	pCi/L	02/23/17 11:37	15262-20-1	
Total Radium		Total Radium Calculation	1.04 ± 0.650 (1.25)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.0276 ± 0.0756 (0.185) C:97% T:NA	pCi/L	02/14/17 10:56	13982-63-3	
Radium-228		EPA 9320	0.0104 ± 0.387 (0.899) C:68% T:78%	pCi/L	02/23/17 11:38	15262-20-1	
Total Radium		Total Radium Calculation	0.0380 ± 0.463 (1.08)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.0979 ± 0.104 (0.201) C:92% T:NA	pCi/L	02/14/17 10:56	13982-63-3	
Radium-228		EPA 9320	1.03 ± 0.640 (1.20) C:56% T:70%	pCi/L	02/23/17 11:38	15262-20-1	
Total Radium		Total Radium Calculation	1.13 ± 0.744 (1.40)	pCi/L	02/23/17 16:09	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30209139

QC Batch: 248824 Analysis Method: EPA 9315
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
 Associated Lab Samples: 30209139001, 30209139002, 30209139003, 30209139004

METHOD BLANK: 1223623 Matrix: Water
 Associated Lab Samples: 30209139001, 30209139002, 30209139003, 30209139004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.00454 ± 0.0688 (0.190) C:100% T:NA	pCi/L	02/14/17 10:56	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond
Pace Project No.: 30209139

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# : 30209139

Chain of Custody



30209139



www.paceanalytical.com

Results Requested By: 2/20/2017

Owner Received Date:

Workorder Name: Plant Hammond

Workorder: AAA0861

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
						NO	HO		
1	HGWA-111	G	1/25/2017 10:35	AAA0861-01	GW	2			
2	HGWA-112	G	1/25/2017 11:10	AAA0861-02	GW	2			
3	HGWA-113	G	1/25/2017 12:53	AAA0861-03	GW	2			
4	HGWA-122	G	1/25/2017 13:20	AAA0861-04	GW	2			
5									
6									
7									
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time
1			<i>W. H. Stone / Pace</i>	1-27-17/1000
2				
3				

LAB USE ONLY

001

002

003

004

Radium 226, 228, Total

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.

30209139

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

Pace Analytical

CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

CLIENT NAME: Georgia Power		CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 42 Inverness Center Parkway BIN B-428 Birmingham, AL 35242		REPORT TO: Lauren Petty		CC: Maria Padilla Heath McCorble		PO #: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond - AP 3&4	
PROJECT #: Phase II		Collection DATE		MATRIX CODE*		SAMPLE IDENTIFICATION		CONTAINER TYPE: P P P P P 3 7 3		ANALYSIS REQUESTED	
Collection TIME		Collection DATE		MATRIX CODE*		SAMPLE IDENTIFICATION		# of CONTAINERS		PRESERVATION:	
01/25/17	10:35	GW	X	HGWA-111	4	Metals Part 257 App. III & IV (EPA 6020/7470)	1	1	2	1	1
01/25/17	11:10	GW	X	HGWA-112	4	Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C)	1	1	2	1	2
01/25/17	12:53	GW	X	HGWA-113	4	Radium 226 & 228 (SM-846 9315/9320)	1	1	2	1	2
01/25/17	13:20	GW	X	HGWA-122	4		1	1	2	1	2
DATE/TIME: 1/25/2017 13:20		DATE/TIME: 01/26/17 12:02		DATE/TIME: 1/25/2017 13:20		DATE/TIME: 1/25/17 20:00		DATE/TIME: 1/25/17 20:00		DATE/TIME: 1/25/17 20:00	
SAMPLED BY AND TITLE: M.Burch WVB		RECEIVED BY: W.Vergo WVB		RECEIVED BY: M.Burch WVB		RECEIVED BY: W.Vergo WVB		RECEIVED BY: W.Vergo WVB		RECEIVED BY: W.Vergo WVB	
RECEIVED BY LAB: W. Hammond		RECEIVED BY LAB: W. Hammond		RECEIVED BY LAB: W. Hammond		RECEIVED BY LAB: W. Hammond		RECEIVED BY LAB: W. Hammond		RECEIVED BY LAB: W. Hammond	
LAB #		LAB #		LAB #		LAB #		LAB #		LAB #	
ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS	
TRACKING #		TRACKING #		TRACKING #		TRACKING #		TRACKING #		TRACKING #	
FOR LAB USE ONLY		FOR LAB USE ONLY		FOR LAB USE ONLY		FOR LAB USE ONLY		FOR LAB USE ONLY		FOR LAB USE ONLY	
LAB #		LAB #		LAB #		LAB #		LAB #		LAB #	
ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS		ENTRUSTED INTO HANDS	
TRACKING #		TRACKING #		TRACKING #		TRACKING #		TRACKING #		TRACKING #	

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30209139

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 6812 5101 9119

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: Q97A 1-27-17

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>Q97A</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>Q97A</u> Date: <u>1-27-17</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: 2/13/2017
Worklist: 33965
Matrix: DW

Method Blank Assessment	
MB Sample ID	1224049
MB concentration:	0.991
M/B Counting Uncertainty:	0.414
MB MDC:	0.731
MB Numerical Performance Indicator:	4.69
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
Count Date:	2/23/2017
Spike I.D.:	16-027
Spike Concentration (pCi/mL):	25.228
Volume Used (mL):	0.20
Aliquot Volume (L, g, F):	0.810
Target Conc. (pCi/L, g, F):	6.231
Uncertainty (Calculated):	0.449
Result (pCi/L, g, F):	8.243
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.828
Numerical Performance Indicator:	4.19
Percent Recovery:	132.29%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30209600005
Duplicate Sample I.D.:	30209600005DUP
Sample Result (pCi/L, g, F):	1.345
Sample Result Counting Uncertainty (pCi/L, g, F):	0.471
Sample Duplicate Result (pCi/L, g, F):	0.855
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.393
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	1.566
Duplicate RPD:	44.56%
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: *The method blank result is below the reporting limit for this analysis and is acceptable.

***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 Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 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:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
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



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 2/10/2017
Worklist: 33939
Matrix: DW

Method Blank Assessment	
MB Sample ID	1223623
MB concentration:	0.005
M/B Counting Uncertainty:	0.069
MB MDC:	0.190
MB Numerical Performance Indicator:	0.13
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	2/15/2017
Spike I.D.:	16-026
Spike Concentration (pCi/mL):	44.669
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):	7.727
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.653
Numerical Performance Indicator:	-2.94
Percent Recovery:	86.93%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30209600005
Duplicate Sample I.D.:	30209600005DUP
Sample Result (pCi/L, g, F):	0.111
Sample Duplicate Result (pCi/L, g, F):	0.096
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.064
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.096
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	0.680
Duplicate RPD:	54.03%
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 Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 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.:	
Spike I.D.:	
Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 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:	

Justault



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: AAA0924

February 03, 2017

Project: CCR Event

Project #: Plant Hammond

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.

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 03, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWC-124	AAA0924-01	Ground Water	01/27/17 10:00	01/27/17 16:00
HGWC-120	AAA0924-02	Ground Water	01/27/17 11:25	01/27/17 16:00
HGWC-117	AAA0924-03	Ground Water	01/27/17 12:15	01/27/17 16:00
Dup-1	AAA0924-04	Ground Water	01/27/17 00:00	01/27/17 16:00



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

February 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0924

Project: CCR Event

Client ID: HGWC-124

Lab Number ID: AAA0924-01

Date/Time Sampled: 1/27/2017 10:00:00AM

Date/Time Received: 1/27/2017 4:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	370	25	10	mg/L	SM 2540 C		1	01/31/17 17:51	01/31/17 17:51	7010778	JPT
Inorganic Anions											
Chloride	4.0	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 22:34	7010718	RLC
Fluoride	0.30	0.30	0.004	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 22:34	7010718	RLC
Sulfate	74	5.0	0.46	mg/L	EPA 300.0		5	01/27/17 16:22	02/01/17 08:59	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Barium	0.0632	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:18	7010760	KLH
Boron	0.428	0.0400	0.0064	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Calcium	84.2	25.0	1.55	mg/L	EPA 6020B		50	01/31/17 10:00	01/31/17 22:22	7010760	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:17	7010760	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:18	7010760	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/02/17 12:05	02/02/17 17:07	7020032	MTC



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

February 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0924

Project: CCR Event

Client ID: HGWC-120

Lab Number ID: AAA0924-02

Date/Time Sampled: 1/27/2017 11:25:00AM

Date/Time Received: 1/27/2017 4:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	706	25	10	mg/L	SM 2540 C		1	01/31/17 17:51	01/31/17 17:51	7010778	JPT
Inorganic Anions											
Chloride	3.3	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 22:55	7010718	RLC
Fluoride	1.2	0.30	0.004	mg/L	EPA 300.0		1	01/27/17 16:22	01/27/17 22:55	7010718	RLC
Sulfate	290	10	0.92	mg/L	EPA 300.0		10	01/27/17 16:22	02/01/17 09:21	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Barium	0.0451	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:24	7010760	KLH
Boron	1.19	0.0400	0.0064	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Calcium	157	25.0	1.55	mg/L	EPA 6020B		50	01/31/17 10:00	01/31/17 22:34	7010760	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Cobalt	0.0034	0.0100	0.0005	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Molybdenum	0.0214	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:28	7010760	CSW
Lithium	0.0329	0.0500	0.0103	mg/L	EPA 6020B	J	5	01/31/17 10:00	02/02/17 16:24	7010760	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/02/17 12:05	02/02/17 17:10	7020032	MTC



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 Atlanta GA, 30339

February 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0924

Project: CCR Event

Client ID: HGWC-117

Lab Number ID: AAA0924-03

Date/Time Sampled: 1/27/2017 12:15:00PM

Date/Time Received: 1/27/2017 4:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	407	25	10	mg/L	SM 2540 C		1	01/31/17 17:51	01/31/17 17:51	7010778	JPT
Inorganic Anions											
Chloride	7.8	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/28/17 00:38	7010718	RLC
Fluoride	0.28	0.30	0.004	mg/L	EPA 300.0	J	1	01/27/17 16:22	01/28/17 00:38	7010718	RLC
Sulfate	150	10	0.92	mg/L	EPA 300.0		10	01/27/17 16:22	02/01/17 11:10	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Barium	0.0490	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Beryllium	ND	0.0300	0.0004	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:29	7010760	KLH
Boron	0.990	0.200	0.0321	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:29	7010760	KLH
Cadmium	0.0007	0.0010	0.00007	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Calcium	68.6	25.0	1.55	mg/L	EPA 6020B		50	01/31/17 10:00	01/31/17 22:57	7010760	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Cobalt	0.0041	0.0100	0.0005	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 22:51	7010760	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:29	7010760	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/02/17 12:05	02/02/17 17:12	7020032	MTC



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 Atlanta GA, 30339

February 03, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0924

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAA0924-04

Date/Time Sampled: 1/27/2017 12:00:00AM

Date/Time Received: 1/27/2017 4:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	729	25	10	mg/L	SM 2540 C		1	01/31/17 17:51	01/31/17 17:51	7010778	JPT
Inorganic Anions											
Chloride	3.1	0.25	0.01	mg/L	EPA 300.0		1	01/27/17 16:22	01/28/17 00:59	7010718	RLC
Fluoride	1.1	0.30	0.004	mg/L	EPA 300.0		1	01/27/17 16:22	01/28/17 00:59	7010718	RLC
Sulfate	300	10	0.92	mg/L	EPA 300.0		10	01/27/17 16:22	02/01/17 11:31	7010718	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Barium	0.0429	0.0100	0.0004	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:35	7010760	KLH
Boron	1.42	0.200	0.0321	mg/L	EPA 6020B		5	01/31/17 10:00	02/02/17 16:35	7010760	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Calcium	157	25.0	1.55	mg/L	EPA 6020B		50	01/31/17 10:00	01/31/17 23:08	7010760	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Cobalt	0.0033	0.0100	0.0005	mg/L	EPA 6020B	J	1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Molybdenum	0.0198	0.0100	0.0017	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/31/17 10:00	01/31/17 23:02	7010760	CSW
Lithium	0.0317	0.0500	0.0103	mg/L	EPA 6020B	J	5	01/31/17 10:00	02/02/17 16:35	7010760	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/02/17 12:05	02/02/17 17:19	7020032	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 03, 2017

Report No.: AAA0924

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010778 - SM 2540 C											
Blank (7010778-BLK1)						Prepared & Analyzed: 01/31/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7010778-BS1)						Prepared & Analyzed: 01/31/17					
Total Dissolved Solids	407	25	10	mg/L	400.00		102	84-108			
Duplicate (7010778-DUP1)						Source: AAA0909-04 Prepared & Analyzed: 01/31/17					
Total Dissolved Solids	884	25	10	mg/L		846			4	10	
Duplicate (7010778-DUP2)						Source: AAA0909-14 Prepared & Analyzed: 01/31/17					
Total Dissolved Solids	21	25	10	mg/L		28			29	10	QR-03, J



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February 03, 2017

Report No.: AAA0924

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010718 - EPA 300.0											
Blank (7010718-BLK1)						Prepared & Analyzed: 01/27/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
LCS (7010718-BS1)						Prepared & Analyzed: 01/27/17					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.5	0.30	0.004	mg/L	10.020		105	90-110			
Sulfate	10.6	1.0	0.09	mg/L	10.020		106	90-110			
Matrix Spike (7010718-MS1)						Source: AAA0862-01 Prepared & Analyzed: 01/27/17					
Chloride	57.0	0.25	0.01	mg/L	10.010	51.6	55	90-110			QM-02
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.24	105	90-110			
Sulfate	100	1.0	0.09	mg/L	10.020	101	NR	90-110			QM-02
Matrix Spike Dup (7010718-MSD1)						Source: AAA0862-01 Prepared & Analyzed: 01/27/17					
Chloride	56.5	0.25	0.01	mg/L	10.010	51.6	50	90-110	0.9	15	QM-02
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.24	105	90-110	0.1	15	
Sulfate	101	1.0	0.09	mg/L	10.020	101	NR	90-110	0.4	15	QM-02



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Report No.: AAA0924

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010760 - EPA 3005A											
Blank (7010760-BLK1)						Prepared & Analyzed: 01/31/17					
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 (7010760-BS1)						Prepared & Analyzed: 01/31/17					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.0974	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	1.06	0.0400	0.0064	mg/L	1.0000		106	80-120			
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000		100	80-120			
Calcium	1.06	0.500	0.0311	mg/L	1.0000		106	80-120			
Chromium	0.102	0.0100	0.0009	mg/L	0.10000		102	80-120			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Copper	0.101	0.0250	0.0005	mg/L	0.10000		101	80-120			
Lead	0.102	0.0050	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.103	0.0100	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.100	0.0100	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.100	0.0010	0.0002	mg/L	0.10000		100	80-120			
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000		101	80-120			
Zinc	0.107	0.0100	0.0021	mg/L	0.10000		107	80-120			
Lithium	0.0962	0.0500	0.0021	mg/L	0.10000		96	80-120			



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Attention: Mr. Joju Abraham

February 03, 2017

Report No.: AAA0924

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010760 - EPA 3005A											
Matrix Spike (7010760-MS1)			Source: AAA0909-08				Prepared & Analyzed: 01/31/17				
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	ND	106	75-125			
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	ND	109	75-125			
Barium	0.209	0.0100	0.0004	mg/L	0.10000	0.105	104	75-125			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000	ND	104	75-125			
Boron	2.78	2.00	0.321	mg/L	1.0000	1.19	159	75-125			QM-02
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	145	25.0	1.55	mg/L	1.0000	139	618	75-125			QM-02
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	0.102	0.0250	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.0985	0.0050	0.0001	mg/L	0.10000	0.0001	98	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.0994	0.0100	0.0006	mg/L	0.10000	ND	99	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125			
Silver	0.0976	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Thallium	0.0974	0.0010	0.0002	mg/L	0.10000	ND	97	75-125			
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000	ND	106	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	0.0025	102	75-125			
Lithium	0.0978	0.0500	0.0021	mg/L	0.10000	0.0028	95	75-125			
Matrix Spike Dup (7010760-MSD1)			Source: AAA0909-08				Prepared & Analyzed: 01/31/17				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125	2	20	
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000	ND	108	75-125	1	20	
Barium	0.202	0.0100	0.0004	mg/L	0.10000	0.105	97	75-125	3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125	2	20	
Boron	2.71	2.00	0.321	mg/L	1.0000	1.19	152	75-125	3	20	QM-02
Cadmium	0.0983	0.0010	0.00007	mg/L	0.10000	ND	98	75-125	3	20	
Calcium	142	25.0	1.55	mg/L	1.0000	139	298	75-125	2	20	QM-02
Chromium	0.0999	0.0100	0.0009	mg/L	0.10000	ND	100	75-125	6	20	
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	2	20	
Copper	0.0945	0.0250	0.0005	mg/L	0.10000	ND	95	75-125	7	20	
Lead	0.0990	0.0050	0.0001	mg/L	0.10000	0.0001	99	75-125	0.5	20	
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000	ND	107	75-125	0.6	20	
Nickel	0.0991	0.0100	0.0006	mg/L	0.10000	ND	99	75-125	0.3	20	
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	ND	105	75-125	2	20	
Silver	0.0974	0.0100	0.0005	mg/L	0.10000	ND	97	75-125	0.3	20	
Thallium	0.0973	0.0010	0.0002	mg/L	0.10000	ND	97	75-125	0.1	20	
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000	ND	102	75-125	4	20	
Zinc	0.0996	0.0100	0.0021	mg/L	0.10000	0.0025	97	75-125	5	20	
Lithium	0.100	0.0500	0.0021	mg/L	0.10000	0.0028	97	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

February 03, 2017

Report No.: AAA0924

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7010760 - EPA 3005A											
Post Spike (7010760-PS1)			Source: AAA0909-08			Prepared & Analyzed: 01/31/17					
Antimony	92.7			ug/L	100.00	0.0220	93	80-120			
Arsenic	107			ug/L	100.00	-0.219	107	80-120			
Barium	196			ug/L	100.00	105	91	80-120			
Beryllium	105			ug/L	100.00	0.0100	105	80-120			
Boron	2660			ug/L	1000.0	1190	148	80-120			QM-02
Cadmium	100			ug/L	100.00	0.0104	100	80-120			
Calcium	143000			ug/L	1000.0	139000	377	80-120			QM-02
Chromium	107			ug/L	100.00	0.148	107	80-120			
Cobalt	102			ug/L	100.00	0.123	102	80-120			
Copper	97.5			ug/L	100.00	0.247	97	80-120			
Lead	94.5			ug/L	100.00	0.122	94	80-120			
Molybdenum	106			ug/L	100.00	0.0875	106	80-120			
Nickel	99.0			ug/L	100.00	0.284	99	80-120			
Selenium	106			ug/L	100.00	0.338	106	80-120			
Silver	93.9			ug/L	100.00	0.0015	94	80-120			
Thallium	93.8			ug/L	100.00	0.0007	94	80-120			
Vanadium	108			ug/L	100.00	-2.17	108	80-120			
Zinc	104			ug/L	100.00	2.53	101	80-120			
Lithium	100			ug/L	100.00	2.80	98	80-120			

Batch 7020032 - EPA 7470A

Blank (7020032-BLK1)				Prepared & Analyzed: 02/02/17							
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7020032-BS1)				Prepared & Analyzed: 02/02/17							
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

February 03, 2017

Report No.: AAA0924

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7020032 - EPA 7470A											
Matrix Spike (7020032-MS1)			Source: AAA0909-10			Prepared & Analyzed: 02/02/17					
Mercury	0.00253	0.00050	0.000041	mg/L	2.5000E-3	0.00008	98	75-125			
Matrix Spike Dup (7020032-MSD1)			Source: AAA0909-10			Prepared & Analyzed: 02/02/17					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	0.00008	96	75-125	2	20	
Post Spike (7020032-PS1)			Source: AAA0909-10			Prepared & Analyzed: 02/02/17					
Mercury	1.67			ug/L	1.6667	0.0534	97	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

February 03, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

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

LOG-IN CHECKLIST

Printed: 1/30/2017 9:12:26AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 01/27/17 16:00

Work Order: AAA0924

Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 4

#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:

February 28, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 30209265

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on January 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,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 30209265

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 Hammond

Pace Project No.: 30209265

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30209265001	HGWC-124	Water	01/27/17 10:00	01/30/17 09:05
30209265002	HGWC-120	Water	01/27/17 11:25	01/30/17 09:05
30209265003	HGWC-117	Water	01/27/17 12:15	01/30/17 09:05
30209265004	Dup-1	Water	01/27/17 00:00	01/30/17 09:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 30209265

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30209265001	HGWC-124	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30209265002	HGWC-120	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30209265003	HGWC-117	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30209265004	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 Hammond
Pace Project No.: 30209265

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.111 ± 0.144 (0.291) C:88% T:NA	pCi/L	02/15/17 11:49	13982-63-3	
Radium-228		EPA 9320	0.684 ± 0.417 (0.756) C:54% T:88%	pCi/L	02/23/17 15:06	15262-20-1	
Total Radium		Total Radium Calculation	0.795 ± 0.561 (1.05)	pCi/L	02/24/17 16:50	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.230 ± 0.178 (0.282) C:91% T:NA	pCi/L	02/15/17 11:49	13982-63-3	
Radium-228		EPA 9320	0.291 ± 0.309 (0.641) C:72% T:90%	pCi/L	02/23/17 15:06	15262-20-1	
Total Radium		Total Radium Calculation	0.521 ± 0.487 (0.923)	pCi/L	02/24/17 16:50	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.166 ± 0.167 (0.313) C:91% T:NA	pCi/L	02/15/17 11:49	13982-63-3	
Radium-228		EPA 9320	0.917 ± 0.594 (1.14) C:53% T:85%	pCi/L	02/23/17 15:53	15262-20-1	
Total Radium		Total Radium Calculation	1.08 ± 0.761 (1.45)	pCi/L	02/24/17 16:50	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.143 ± 0.158 (0.304) C:90% T:NA	pCi/L	02/15/17 11:49	13982-63-3	
Radium-228		EPA 9320	0.207 ± 0.440 (0.971) C:59% T:87%	pCi/L	02/23/17 15:53	15262-20-1	
Total Radium		Total Radium Calculation	0.350 ± 0.598 (1.28)	pCi/L	02/24/17 16:50	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30209265

QC Batch: 248965

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30209265001, 30209265002, 30209265003, 30209265004

METHOD BLANK: 1224567

Matrix: Water

Associated Lab Samples: 30209265001, 30209265002, 30209265003, 30209265004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0945 ± 0.388 (0.887) C:53% T:83%	pCi/L	02/23/17 11:46	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30209265

QC Batch:	248825	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30209265001, 30209265002, 30209265003, 30209265004		

METHOD BLANK:	1223624	Matrix:	Water
Associated Lab Samples:	30209265001, 30209265002, 30209265003, 30209265004		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0911 ± 0.153 (0.342) C:91% T:NA	pCi/L	02/15/17 09:03	

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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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 30209265

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: AAA0924

Workorder Name: Plant Hammond

Owner Received Date:

Results Requested By: 2/21/2017

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

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

Requested Analysis

WO#: 30209265



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
						NO	HL		
1	HGWC-124	G	1/27/2017 10:00	AAA0924-01	GW	2		X	
2	HGWC-120	G	1/27/2017 11:25	AAA0924-02	GW	2		X	
3	HGWC-117	G	1/27/2017 12:15	AAA0924-03	GW	2		X	
4	Dup-1	G	1/27/2017 0:00	AAA0924-04	GW	2		X	
5									
6									
7									
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Johnnie Pace</i>	1-30-17/0905	EQUIS deliverable required.
2					
3					

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

30209265

CHAIN OF CUSTODY RECORD



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

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 42 Inverness Center Parkway, 5th Bldg Birmingham, AL 35242 205-592-5417 REPORT TO: Lauren Petty REQUESTED COMPLETION DATE: PROJECT NAME/STATE: Plant Hammond - AP 3&4 PROJECT #		CC: Maria Padilla Heath McCorkle PO #: laburch@southernco.com ANALYSIS REQUESTED		CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION: 1 - HCl, 56°C 2 - H ₂ SO ₄ , 56°C 3 - HNO ₃ 4 - NaOH, 56°C 5 - NaOH/ZnAc, 56°C 6 - Na ₂ O ₃ , 56°C 7 - 56°C not frozen	
CONTRACT # DATE TIME COLLECTOR ANALYST LABORATORY PROJECT #		CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION: 1 - HCl, 56°C 2 - H ₂ SO ₄ , 56°C 3 - HNO ₃ 4 - NaOH, 56°C 5 - NaOH/ZnAc, 56°C 6 - Na ₂ O ₃ , 56°C 7 - 56°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	
CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION: 1 - HCl, 56°C 2 - H ₂ SO ₄ , 56°C 3 - HNO ₃ 4 - NaOH, 56°C 5 - NaOH/ZnAc, 56°C 6 - Na ₂ O ₃ , 56°C 7 - 56°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		LAB #: AAA0924 Entered into LIMS: Tracking #:	

2017 01 27 Hammond COC.xlsx

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

30209265
Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 6812 5101 9656

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: 0978 1-30-17

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>0978</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>0978</u> Date: <u>1-30-17</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: JLLW
Date: 2/15/2017
Worklist: 33968
Matrix: DW

Method Blank Assessment	
MB Sample ID	1224567
MB concentration:	0.094
M/B Counting Uncertainty:	0.387
MB MDC:	0.887
MB Numerical Performance Indicator:	0.48
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		N
LCS/D (Y or N)?		LCS/D33968
Count Date:	2/23/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.228	
Volume Used (mL):	0.30	
Aliquot Volume (L, g, F):	0.802	
Target Conc. (pCi/L, g, F):	9.439	
Uncertainty (Calculated):	0.680	
Result (pCi/L, g, F):	8.775	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.867	
Numerical Performance Indicator:	-1.18	
Percent Recovery:	92.97%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Duplicate Sample Assessment		N
LCS/D (Y or N)?		LCS/D33968
Sample I.D.:	30209606003	
Duplicate Sample I.D.:	30209606003DUP	
Sample Result (pCi/L, g, F):	0.702	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.483	
Sample Duplicate Result (pCi/L, g, F):	1.313	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.568	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.606	
Duplicate RPD:	60.66%	
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.

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Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
M/MSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (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.:	
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 Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
 Analyst: LAL
 Date: 2/14/2017
 Worklist: 33940
 Matrix: DW

Method Blank Assessment	
MB Sample ID	1223624
MB concentration:	0.091
M/B Counting Uncertainty:	0.153
MB MDC:	0.342
MB Numerical Performance Indicator:	1.17
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	2/15/2017
Spike I.D.:	LCSD33940
Spike Concentration (pCi/mL):	16-026
Volume Used (mL):	44.669
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.506
Uncertainty (Calculated):	8.835
Result (pCi/L, g, F):	0.416
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	7.810
Numerical Performance Indicator:	0.845
Percent Recovery:	-2.13
Status vs Numerical Indicator:	88.39%
Status vs Recovery:	N/A
	Pass

Duplicate Sample Assessment	
Sample I.D.:	30209606003
Duplicate Sample I.D.:	30209606003DUP
Sample Result (pCi/L, g, F):	0.326
Sample Result Counting Uncertainty (pCi/L, g, F):	0.256
Sample Duplicate Result (pCi/L, g, F):	0.234
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.182
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	0.569
Duplicate RPD:	32.60%
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:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 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:	

Jan 2/2017



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: AAB0021

February 09, 2017

Project: CCR Event

Project #: Plant Hammond

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

February 09, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWC-103	AAB0021-01	Ground Water	01/31/17 11:15	02/01/17 11:00
HGWC-101	AAB0021-02	Ground Water	01/31/17 11:30	02/01/17 11:00
HGWC-118	AAB0021-03	Ground Water	01/31/17 11:55	02/01/17 11:00
HGWC-105	AAB0021-04	Ground Water	01/31/17 12:00	02/01/17 11:00
HGWC-107	AAB0021-05	Ground Water	01/31/17 13:05	02/01/17 11:00
HGWC-109	AAB0021-06	Ground Water	01/31/17 15:50	02/01/17 11:00
FB-1	AAB0021-07	Water	01/31/17 11:15	02/01/17 11:00
FERB-1	AAB0021-08	Water	01/31/17 16:15	02/01/17 11:00



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

Attention: Mr. Joju Abraham

February 09, 2017

Report No.: AAB0021

Project: CCR Event

Client ID: HGWC-103

Lab Number ID: AAB0021-01

Date/Time Sampled: 1/31/2017 11:15:00AM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	516	25	10	mg/L	SM 2540 C		1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	5.6	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 04:06	7020101	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 04:06	7020101	RLC
Sulfate	300	10	0.92	mg/L	EPA 300.0	B-01	10	02/04/17 11:15	02/07/17 10:48	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Barium	0.0365	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Boron	2.12	2.00	0.321	mg/L	EPA 6020B		50	02/02/17 15:00	02/07/17 14:04	7020031	KLH
Cadmium	0.0006	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Calcium	63.6	25.0	1.55	mg/L	EPA 6020B		50	02/02/17 15:00	02/07/17 14:04	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Cobalt	0.0016	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:21	7020031	KLH
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	02/06/17 12:45	02/06/17 17:36	7020113	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 09, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0021

Project: CCR Event

Client ID: HGWC-101

Lab Number ID: AAB0021-02

Date/Time Sampled: 1/31/2017 11:30:00AM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	263	25	10	mg/L	SM 2540 C		1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	5.8	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 04:26	7020101	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 04:26	7020101	RLC
Sulfate	120	10	0.92	mg/L	EPA 300.0	B-01	10	02/04/17 11:15	02/07/17 11:09	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Barium	0.0527	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Boron	0.0928	0.0400	0.0064	mg/L	EPA 6020B		1	02/02/17 15:00	02/07/17 14:15	7020031	KLH
Cadmium	0.0001	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Calcium	19.1	5.00	0.311	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:10	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Cobalt	0.0010	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:44	7020031	KLH
Mercury	0.000093	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	02/06/17 12:45	02/06/17 17:38	7020113	MTC



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Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 09, 2017

Report No.: AAB0021

Project: CCR Event

Client ID: HGWC-118

Lab Number ID: AAB0021-03

Date/Time Sampled: 1/31/2017 11:55:00AM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	361	25	10	mg/L	SM 2540 C		1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	4.8	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 04:47	7020101	RLC
Fluoride	0.30	0.30	0.004	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 04:47	7020101	RLC
Sulfate	87	10	0.92	mg/L	EPA 300.0	B-01	10	02/04/17 11:15	02/07/17 11:31	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Barium	0.0613	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Boron	0.768	0.400	0.0642	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:21	7020031	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Calcium	76.8	5.00	0.311	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:21	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 22:55	7020031	KLH
Mercury	0.00009	0.00050	0.000041	mg/L	EPA 7470A	J, B-01	1	02/06/17 12:45	02/06/17 17:40	7020113	MTC



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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

February 09, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0021

Project: CCR Event

Client ID: HGWC-105

Lab Number ID: AAB0021-04

Date/Time Sampled: 1/31/2017 12:00:00PM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	437	25	10	mg/L	SM 2540 C		1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	3.3	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 05:08	7020101	RLC
Fluoride	0.13	0.30	0.004	mg/L	EPA 300.0	J	1	02/04/17 11:15	02/05/17 05:08	7020101	RLC
Sulfate	210	10	0.92	mg/L	EPA 300.0	B-01	10	02/04/17 11:15	02/07/17 11:52	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Barium	0.0674	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Boron	1.43	0.400	0.0642	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:27	7020031	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Calcium	70.3	5.00	0.311	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:27	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Lithium	0.0042	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 23:07	7020031	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/07/17 10:30	02/07/17 16:35	7020153	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 09, 2017

Report No.: AAB0021

Project: CCR Event

Client ID: HGWC-107

Lab Number ID: AAB0021-05

Date/Time Sampled: 1/31/2017 1:05:00PM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	346	25	10	mg/L	SM 2540 C		1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	3.1	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 05:28	7020101	RLC
Fluoride	0.16	0.30	0.004	mg/L	EPA 300.0	J	1	02/04/17 11:15	02/05/17 05:28	7020101	RLC
Sulfate	130	10	0.92	mg/L	EPA 300.0	B-01	10	02/04/17 11:15	02/07/17 12:13	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Barium	0.0382	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Boron	0.782	0.400	0.0642	mg/L	EPA 6020B		10	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Cadmium	0.00009	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Calcium	46.6	5.00	0.311	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:33	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:18	7020031	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/07/17 10:30	02/07/17 16:37	7020153	MTC



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

February 09, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0021

Project: CCR Event

Client ID: HGWC-109

Lab Number ID: AAB0021-06

Date/Time Sampled: 1/31/2017 3:50:00PM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	252	25	10	mg/L	SM 2540 C		1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	5.5	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 07:13	7020101	RLC
Fluoride	0.05	0.30	0.004	mg/L	EPA 300.0	J	1	02/04/17 11:15	02/05/17 07:13	7020101	RLC
Sulfate	37	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/04/17 11:15	02/05/17 07:13	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Arsenic	0.0022	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Barium	0.0844	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Boron	0.404	0.400	0.0642	mg/L	EPA 6020B		10	02/02/17 15:00	02/07/17 14:54	7020031	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Calcium	34.2	2.50	0.155	mg/L	EPA 6020B		5	02/02/17 15:00	02/07/17 00:04	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Cobalt	0.0017	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:30	7020031	KLH
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	J	1	02/07/17 10:30	02/07/17 16:39	7020153	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

February 09, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0021

Project: CCR Event

Client ID: FB-1

Lab Number ID: AAB0021-07

Date/Time Sampled: 1/31/2017 11:15:00AM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	18	25	10	mg/L	SM 2540 C	J	1	02/03/17 11:35	02/03/17 11:35	7020078	JPT
Inorganic Anions											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J, B-01	1	02/04/17 11:15	02/05/17 07:35	7020101	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 07:35	7020101	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 07:35	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:53	7020031	KLH
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	J	1	02/07/17 10:30	02/07/17 16:47	7020153	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 09, 2017

Report No.: AAB0021

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AAB0021-08

Date/Time Sampled: 1/31/2017 4:15:00PM

Date/Time Received: 2/1/2017 11:00:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	02/03/17 18:20	02/03/17 18:20	7020170	JPT
Inorganic Anions											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J, B-01	1	02/04/17 11:15	02/05/17 07:56	7020101	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 07:56	7020101	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	02/04/17 11:15	02/05/17 07:56	7020101	RLC
Metals, Total											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/02/17 15:00	02/06/17 23:58	7020031	KLH
Mercury	0.00006	0.00050	0.000041	mg/L	EPA 7470A	J	1	02/07/17 10:30	02/07/17 16:49	7020153	MTC



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February 09, 2017

Report No.: AAB0021

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7020078 - SM 2540 C											
Blank (7020078-BLK1)						Prepared & Analyzed: 02/03/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7020078-BS1)						Prepared & Analyzed: 02/03/17					
Total Dissolved Solids	413	25	10	mg/L	400.00		103	84-108			
Duplicate (7020078-DUP1)						Source: AAB0005-02 Prepared & Analyzed: 02/03/17					
Total Dissolved Solids	3840	25	10	mg/L		3830			0.3	10	
Duplicate (7020078-DUP2)						Source: AAB0021-07 Prepared & Analyzed: 02/03/17					
Total Dissolved Solids	14	25	10	mg/L		18			25	10	QR-01, J
Batch 7020170 - SM 2540 C											
Blank (7020170-BLK1)						Prepared & Analyzed: 02/07/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7020170-BS1)						Prepared & Analyzed: 02/07/17					
Total Dissolved Solids	384	25	10	mg/L	400.00		96	84-108			
Duplicate (7020170-DUP1)						Source: AAA0992-05RE2 Prepared & Analyzed: 02/07/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
Duplicate (7020170-DUP2)						Source: AAB0005-03RE1 Prepared & Analyzed: 02/07/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
Duplicate (7020170-DUP3)						Source: AAB0021-08RE1 Prepared & Analyzed: 02/07/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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February 09, 2017

Report No.: AAB0021

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7020101 - EPA 300.0											
Blank (7020101-BLK1)						Prepared & Analyzed: 02/04/17					
Chloride	0.07	0.25	0.01	mg/L							J
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	0.26	1.0	0.09	mg/L							J
LCS (7020101-BS1)						Prepared & Analyzed: 02/04/17					
Chloride	10.9	0.25	0.01	mg/L	10.010		109	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020		108	90-110			
Sulfate	10.8	1.0	0.09	mg/L	10.020		107	90-110			
Matrix Spike (7020101-MS1)						Source: AAB0005-01 Prepared & Analyzed: 02/04/17					
Chloride	235	0.25	0.01	mg/L	10.010	271	NR	90-110			QM-02
Fluoride	13.2	0.30	0.004	mg/L	10.020	1.33	119	90-110			QM-05
Sulfate	300	1.0	0.09	mg/L	10.020	312	NR	90-110			QM-02
Matrix Spike (7020101-MS2)						Source: AAB0020-02 Prepared: 02/04/17 Analyzed: 02/05/17					
Chloride	13.0	0.25	0.01	mg/L	10.010	2.45	106	90-110			
Fluoride	11.2	0.30	0.004	mg/L	10.020	0.04	111	90-110			QM-05
Sulfate	23.5	1.0	0.09	mg/L	10.020	12.8	107	90-110			
Matrix Spike Dup (7020101-MSD1)						Source: AAB0005-01 Prepared: 02/04/17 Analyzed: 02/05/17					
Chloride	237	0.25	0.01	mg/L	10.010	271	NR	90-110	0.9	15	QM-02
Fluoride	13.0	0.30	0.004	mg/L	10.020	1.33	117	90-110	1	15	QM-05
Sulfate	300	1.0	0.09	mg/L	10.020	312	NR	90-110	0.05	15	QM-02



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February 09, 2017

Report No.: AAB0021

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 7020031 - EPA 3005A

Blank (7020031-BLK1)

Prepared: 02/02/17 Analyzed: 02/06/17

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 (7020031-BS1)

Prepared: 02/02/17 Analyzed: 02/06/17

Antimony	0.109	0.0030	0.0008	mg/L	0.10000		109	80-120			
Arsenic	0.0939	0.0050	0.0016	mg/L	0.10000		94	80-120			
Barium	0.100	0.0100	0.0004	mg/L	0.10000		100	80-120			
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000		106	80-120			
Boron	1.04	0.0400	0.0064	mg/L	1.0000		104	80-120			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000		103	80-120			
Calcium	1.08	0.500	0.0311	mg/L	1.0000		108	80-120			
Chromium	0.0944	0.0100	0.0009	mg/L	0.10000		94	80-120			
Cobalt	0.0926	0.0100	0.0005	mg/L	0.10000		93	80-120			
Copper	0.0923	0.0250	0.0005	mg/L	0.10000		92	80-120			
Lead	0.0998	0.0050	0.0001	mg/L	0.10000		100	80-120			
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000		106	80-120			
Nickel	0.0923	0.0100	0.0006	mg/L	0.10000		92	80-120			
Selenium	0.0967	0.0100	0.0010	mg/L	0.10000		97	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	0.0930	0.0100	0.0071	mg/L	0.10000		93	80-120			
Zinc	0.0947	0.0100	0.0021	mg/L	0.10000		95	80-120			
Lithium	0.109	0.0500	0.0021	mg/L	0.10000		109	80-120			



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February 09, 2017

Report No.: AAB0021

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7020031 - EPA 3005A											
Matrix Spike (7020031-MS1)			Source: AAB0005-02			Prepared: 02/02/17 Analyzed: 02/06/17					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	ND	107	75-125			
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000	0.0062	101	75-125			
Barium	0.154	0.0100	0.0004	mg/L	0.10000	0.0445	110	75-125			
Beryllium	0.0874	0.0030	0.00008	mg/L	0.10000	0.0011	86	75-125			
Boron	1.47	0.0400	0.0064	mg/L	1.0000	0.784	68	75-125			QM-02
Cadmium	0.0936	0.0010	0.00007	mg/L	0.10000	ND	94	75-125			
Calcium	157	25.0	1.55	mg/L	1.0000	159	NR	75-125			QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	0.0015	102	75-125			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	0.0111	94	75-125			
Copper	0.0818	0.0250	0.0005	mg/L	0.10000	ND	82	75-125			
Lead	0.0981	0.0050	0.0001	mg/L	0.10000	0.0004	98	75-125			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	ND	109	75-125			
Nickel	0.141	0.0100	0.0006	mg/L	0.10000	0.0510	90	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	0.0046	98	75-125			
Silver	0.0842	0.0100	0.0005	mg/L	0.10000	ND	84	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	0.0004	100	75-125			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125			
Zinc	0.115	0.0100	0.0021	mg/L	0.10000	0.0291	86	75-125			
Lithium	0.102	0.0500	0.0021	mg/L	0.10000	0.0124	90	75-125			
Matrix Spike Dup (7020031-MSD1)			Source: AAB0005-02			Prepared: 02/02/17 Analyzed: 02/06/17					
Antimony	0.111	0.0030	0.0008	mg/L	0.10000	ND	111	75-125	3	20	
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000	0.0062	102	75-125	0.7	20	
Barium	0.156	0.0100	0.0004	mg/L	0.10000	0.0445	112	75-125	1	20	
Beryllium	0.0884	0.0030	0.00008	mg/L	0.10000	0.0011	87	75-125	1	20	
Boron	1.49	0.0400	0.0064	mg/L	1.0000	0.784	71	75-125	1	20	QM-02
Cadmium	0.0967	0.0010	0.00007	mg/L	0.10000	ND	97	75-125	3	20	
Calcium	160	25.0	1.55	mg/L	1.0000	159	47	75-125	2	20	QM-02
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	0.0015	100	75-125	2	20	
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000	0.0111	97	75-125	2	20	
Copper	0.0839	0.0250	0.0005	mg/L	0.10000	ND	84	75-125	3	20	
Lead	0.103	0.0050	0.0001	mg/L	0.10000	0.0004	103	75-125	5	20	
Molybdenum	0.113	0.0100	0.0017	mg/L	0.10000	ND	113	75-125	4	20	
Nickel	0.140	0.0100	0.0006	mg/L	0.10000	0.0510	89	75-125	0.6	20	
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	0.0046	97	75-125	1	20	
Silver	0.0860	0.0100	0.0005	mg/L	0.10000	ND	86	75-125	2	20	
Thallium	0.106	0.0010	0.0002	mg/L	0.10000	0.0004	106	75-125	6	20	
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125	0.7	20	
Zinc	0.116	0.0100	0.0021	mg/L	0.10000	0.0291	87	75-125	0.9	20	
Lithium	0.108	0.0500	0.0021	mg/L	0.10000	0.0124	96	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

February 09, 2017

Report No.: AAB0021

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7020031 - EPA 3005A											
Post Spike (7020031-PS1)			Source: AAB0005-02			Prepared: 02/02/17 Analyzed: 02/06/17					
Antimony	107			ug/L	100.00	0.251	107	80-120			
Arsenic	106			ug/L	100.00	6.23	100	80-120			
Barium	144			ug/L	100.00	44.5	99	80-120			
Beryllium	92.1			ug/L	100.00	1.07	91	80-120			
Boron	1570			ug/L	1000.0	784	78	80-120			QM-02
Cadmium	96.7			ug/L	100.00	0.0292	97	80-120			
Calcium	168000			ug/L	1000.0	159000	844	80-120			QM-02
Chromium	102			ug/L	100.00	1.46	101	80-120			
Cobalt	105			ug/L	100.00	11.1	94	80-120			
Copper	82.9			ug/L	100.00	0.0687	83	80-120			
Lead	101			ug/L	100.00	0.371	101	80-120			
Molybdenum	111			ug/L	100.00	0.775	111	80-120			
Nickel	142			ug/L	100.00	51.0	91	80-120			
Selenium	100			ug/L	100.00	4.64	96	80-120			
Silver	83.1			ug/L	100.00	0.0177	83	80-120			
Thallium	105			ug/L	100.00	0.381	105	80-120			
Vanadium	110			ug/L	100.00	0.647	110	80-120			
Zinc	118			ug/L	100.00	29.1	89	80-120			
Lithium	108			ug/L	100.00	12.4	95	80-120			

Batch 7020113 - EPA 7470A

Blank (7020113-BLK1)					Prepared & Analyzed: 02/06/17						
Mercury	0.00007	0.00050	0.000041	mg/L							J
LCS (7020113-BS1)					Prepared & Analyzed: 02/06/17						
Mercury	0.00238	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

February 09, 2017

Report No.: AAB0021

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7020113 - EPA 7470A											
Matrix Spike (7020113-MS1)			Source: AAA0956-04			Prepared & Analyzed: 02/06/17					
Mercury	0.00234	0.00050	0.000041	mg/L	2.5000E-3	0.00006	91	75-125			
Matrix Spike Dup (7020113-MSD1)			Source: AAA0956-04			Prepared & Analyzed: 02/06/17					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	0.00006	92	75-125	0.7	20	
Post Spike (7020113-PS1)			Source: AAA0956-04			Prepared & Analyzed: 02/06/17					
Mercury	1.72			ug/L	1.6667	0.0422	101	80-120			
Batch 7020153 - EPA 7470A											
Blank (7020153-BLK1)						Prepared & Analyzed: 02/07/17					
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7020153-BS1)						Prepared & Analyzed: 02/07/17					
Mercury	0.00254	0.00050	0.000041	mg/L	2.5000E-3		102	80-120			
Matrix Spike (7020153-MS1)			Source: AAB0021-04			Prepared & Analyzed: 02/07/17					
Mercury	0.00253	0.00050	0.000041	mg/L	2.5000E-3	ND	101	75-125			
Matrix Spike Dup (7020153-MSD1)			Source: AAB0021-04			Prepared & Analyzed: 02/07/17					
Mercury	0.00251	0.00050	0.000041	mg/L	2.5000E-3	ND	100	75-125	0.7	20	
Post Spike (7020153-PS1)			Source: AAB0021-04			Prepared & Analyzed: 02/07/17					
Mercury	1.83			ug/L	1.6667	-0.0131	110	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

February 09, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

- QR-01** RPD was outside acceptance limits due to sample concentrations near or below the reporting limit.
- 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, LLC.

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

LOG-IN CHECKLIST

Printed: 2/2/2017 9:55:10AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 02/01/17 11:00

Work Order: AAB0021

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: 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 24, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 30209600

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 02, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 30209600

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 Hammond

Pace Project No.: 30209600

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30209600001	HGWC-103	Water	01/31/17 11:15	02/02/17 10:05
30209600002	HGWC-101	Water	01/31/17 11:30	02/02/17 10:05
30209600003	HGWC-118	Water	01/31/17 11:55	02/02/17 10:05
30209600004	HGWC-105	Water	01/31/17 12:00	02/02/17 10:05
30209600005	HGWC-107	Water	01/31/17 13:05	02/02/17 10:05
30209600006	HGWC-109	Water	01/31/17 15:50	02/02/17 10:05
30209600007	FB-1	Water	01/31/17 11:15	02/02/17 10:05
30209600008	FERB-1	Water	01/31/17 16:15	02/02/17 10:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 30209600

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30209600001	HGWC-103	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600002	HGWC-101	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600003	HGWC-118	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600004	HGWC-105	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600005	HGWC-107	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600006	HGWC-109	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600007	FB-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30209600008	FERB-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30209600

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-103 Lab ID: 30209600001 Collected: 01/31/17 11:15 Received: 02/02/17 10:05 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.105 ± 0.134 (0.286) C:94% T:NA	pCi/L	02/14/17 10:57	13982-63-3	
Radium-228		EPA 9320	0.871 ± 0.439 (0.747) C:69% T:80%	pCi/L	02/23/17 11:39	15262-20-1	
Total Radium		Total Radium Calculation	0.976 ± 0.573 (1.03)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-101 Lab ID: 30209600002 Collected: 01/31/17 11:30 Received: 02/02/17 10:05 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.107 ± 0.109 (0.208) C:90% T:NA	pCi/L	02/14/17 10:57	13982-63-3	
Radium-228		EPA 9320	0.799 ± 0.419 (0.721) C:69% T:78%	pCi/L	02/23/17 11:39	15262-20-1	
Total Radium		Total Radium Calculation	0.906 ± 0.528 (0.929)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-118 Lab ID: 30209600003 Collected: 01/31/17 11:55 Received: 02/02/17 10:05 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.106 ± 0.0942 (0.170) C:97% T:NA	pCi/L	02/15/17 13:29	13982-63-3	
Radium-228		EPA 9320	0.923 ± 0.479 (0.806) C:69% T:69%	pCi/L	02/23/17 12:11	15262-20-1	
Total Radium		Total Radium Calculation	1.03 ± 0.573 (0.976)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-105 Lab ID: 30209600004 Collected: 01/31/17 12:00 Received: 02/02/17 10:05 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.0856 ± 0.0919 (0.179) C:93% T:NA	pCi/L	02/15/17 08:40	13982-63-3	
Radium-228		EPA 9320	0.782 ± 0.511 (0.962) C:70% T:65%	pCi/L	02/23/17 11:39	15262-20-1	
Total Radium		Total Radium Calculation	0.868 ± 0.603 (1.14)	pCi/L	02/23/17 16:09	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-107 Lab ID: 30209600005 Collected: 01/31/17 13:05 Received: 02/02/17 10:05 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.111 ± 0.0974 (0.174) C:97% T:NA	pCi/L	02/15/17 08:41	13982-63-3	
Radium-228		EPA 9320	1.34 ± 0.529 (0.793) C:69% T:77%	pCi/L	02/23/17 11:38	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 30209600

Sample: HGWC-107		Lab ID: 30209600005	Collected: 01/31/17 13:05	Received: 02/02/17 10:05	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	1.45 ± 0.626 (0.967)	pCi/L	02/23/17 16:09	7440-14-4	

Sample: HGWC-109		Lab ID: 30209600006	Collected: 01/31/17 15:50	Received: 02/02/17 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	0.0483 ± 0.0757 (0.164) C:90% T:NA	pCi/L	02/15/17 08:20	13982-63-3	
Radium-228	EPA 9320	0.540 ± 0.420 (0.827) C:68% T:79%	pCi/L	02/23/17 11:39	15262-20-1	
Total Radium	Total Radium Calculation	0.588 ± 0.496 (0.991)	pCi/L	02/23/17 16:09	7440-14-4	

Sample: FB-1		Lab ID: 30209600007	Collected: 01/31/17 11:15	Received: 02/02/17 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	0.0579 ± 0.0748 (0.152) C:94% T:NA	pCi/L	02/15/17 08:20	13982-63-3	
Radium-228	EPA 9320	0.731 ± 0.487 (0.907) C:64% T:67%	pCi/L	02/23/17 11:40	15262-20-1	
Total Radium	Total Radium Calculation	0.789 ± 0.562 (1.06)	pCi/L	02/23/17 16:09	7440-14-4	

Sample: FERB-1		Lab ID: 30209600008	Collected: 01/31/17 16:15	Received: 02/02/17 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	-0.0267 ± 0.0478 (0.172) C:97% T:NA	pCi/L	02/15/17 08:20	13982-63-3	
Radium-228	EPA 9320	1.05 ± 0.508 (0.828) C:68% T:70%	pCi/L	02/23/17 12:12	15262-20-1	
Total Radium	Total Radium Calculation	1.05 ± 0.556 (1.000)	pCi/L	02/23/17 16:09	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30209600

QC Batch: 248824

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30209600001, 30209600002, 30209600003, 30209600004, 30209600005, 30209600006, 30209600007, 30209600008

METHOD BLANK: 1223623

Matrix: Water

Associated Lab Samples: 30209600001, 30209600002, 30209600003, 30209600004, 30209600005, 30209600006, 30209600007, 30209600008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.00454 ± 0.0688 (0.190) C:100% T:NA	pCi/L	02/14/17 10:56	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 30209600

QC Batch:	248899	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30209600001, 30209600002, 30209600003, 30209600004, 30209600005, 30209600006, 30209600007, 30209600008		

METHOD BLANK:	1224049	Matrix:	Water
Associated Lab Samples:	30209600001, 30209600002, 30209600003, 30209600004, 30209600005, 30209600006, 30209600007, 30209600008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.991 ± 0.451 (0.731) C:88% T:66%	pCi/L	02/23/17 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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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 30209600

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#: 30209600



30209600

Chain of Custody



Workorder: AAB0021 Workorder Name: Plant Hammond Subcontract To: Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (770)-734-4200		Owner Received Date: Results Requested By: 2/24/2017						
Report To: Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200		Requested Analysis						
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	LAB USE ONLY	
1	HGWC-103	G	1/31/2017 11:15	AAB0021-01	GW	2	001	
2	HGWC-101	G	1/31/2017 11:30	AAB0021-02	GW	2	002	
3	HGWC-118	G	1/31/2017 11:55	AAB0021-03	GW	2	003	
4	HGWC-105	G	1/31/2017 12:00	AAB0021-04	GW	2	004	
5	HGWC-107	G	1/31/2017 13:05	AAB0021-05	GW	4	005	
6	HGWC-109	G	1/31/2017 15:50	AAB0021-06	GW	2	006	
7	FB-1	G	1/31/2017 11:15	AAB0021-07	W	2	007	
8	FERB-1	G	1/31/2017 16:15	AAB0021-08	W	2	008	
9								
10								
Transfers Released By							Date/Time	Comments
1 2 3							Radium 226, 228, Total X X X X X X X X X	EQuIS deliverable required.

Cooler Temperature on Receipt <u>N/A</u> °C Received on Ice <u>Y</u> or <u>N</u>	Custody Seal <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.

30209600

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

PAGE: 1 OF 1

CHAIN OF CUSTODY RECORD



CLIENT NAME: Georgia Power
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
 42 Inverness Center, Parkway BIN B426
 Birmingham, AL 35242
REPORT TO: Lauren Petty
CC: Maria Pradilla
 Heath McCorkle
REQUESTED COMPLETION DATE:
PO #: laburchi@southernco.com
PROJECT NAME/STATE: Plant Hammond - AP 3&4

CONTAINER TYPE	PRESERVATION	ANALYSIS REQUESTED			CONTAINER TYPE	PRESERVATION	REMARKS/ADDITIONAL INFORMATION
		P	P	P			
P - PLASTIC	1 - HCl, 56°C	3	7	3			
A - AMBER GLASS	2 - H ₂ SO ₄ , 56°C						
G - CLEAR GLASS	3 - HNO ₃						
V - VOA VIAL	4 - NaOH, 56°C						
S - STERILE	5 - NaOH/ZnAc, 56°C						
O - OTHER	6 - Na ₂ S ₂ O ₃ , 56°C						
	7 - 56°C not frozen						

Collection DATE	Collection TIME	MATRIX CODE*	SAMPLE IDENTIFICATION	CONTAINERS			
				C	O	R	A
01/31/17	11:15	GW	HGWC-103	X			
01/31/17	11:30	GW	HGWC-101	X			
01/31/17	11:55	GW	HGWC-118	X			
01/31/17	12:00	GW	HGWC-105	X			
01/31/17	13:05	GW	HGWC-107	X			
01/31/17	15:50	GW	HGWC-109	X			
01/31/17	11:15	W	FB-1				
01/31/17	16:15	W	FERB-1				

SAMPLED BY AND TITLE: M. Burch, A. Shoredits, M. Thomas
DATE/TIME: 02/01/2017 / 08:00
RECEIVED BY: Noreen
DATE/TIME: 02/01/2017 / 10:13
RECEIVED BY: Noreen
DATE/TIME: 02/01/2017 / 10:13

FOR LAB USE ONLY:
 LAB # PA00021
 EMPLOYEE NAME: [Signature]

2017 01 31 Hammond COCs.xlsx

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30209600

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 6812 5102 0454

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: Q9R 2-2-17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC:	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>Q9R</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>Q9R</u> Date: <u>2-2-17</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

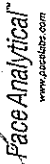
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JLW
Date: 2/13/2017
Worklist: 33965
Matrix: DW

Method Blank Assessment	
MB Sample ID	1224049
MB Concentration:	0.991
M/B Counting Uncertainty:	0.414
MB MDC:	0.731
MB Numerical Performance Indicator:	4.69
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCS/LCSD (Y or N)?	N
LCS33965	LCS33965
Count Date:	2/23/2017
Spike I.D.:	16-027
Spike Concentration (pCi/mL):	25.228
Volume Used (mL):	0.20
Aliquot Volume (L, g, F):	0.810
Target Conc. (pCi/L, g, F):	6.231
Uncertainty (Calculated):	0.449
Result (pCi/L, g, F):	8.243
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.828
Numerical Performance Indicator:	4.19
Percent Recovery:	132.29%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30209600005
Duplicate Sample I.D.:	30209600005DUP
Sample Result (pCi/L, g, F):	1.345
Sample Result Counting Uncertainty (pCi/L, g, F):	0.471
Sample Duplicate Result (pCi/L, g, F):	0.855
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.393
Are sample and/or duplicate results below MDC?	See Below #
Duplicate Numerical Performance Indicator:	1.566
Duplicate RPD:	44.56%
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 is 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.

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 Counting Uncertainty (pCi/L, g, F):	
Sample Result:	
Sample Matrix Spike Result:	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate 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.:	
Spike I.D.:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
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/initials

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 2/10/2017
Worklist: 33939
Matrix: DW

Method Blank Assessment	
MB Sample ID	1223623
MB Concentration:	0.005
M/B Counting Uncertainty:	0.069
MB MDC:	0.190
MB Numerical Performance Indicator:	0.13
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	2/15/2017
Spike I.D.:	16-026
Spike Concentration (pCi/mL):	44.669
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.502
Target Conc. (pCi/L, g, F):	3.890
Uncertainty (Calculated):	0.418
Result (pCi/L, g, F):	7.727
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.653
Numerical Performance Indicator:	-2.94
Percent Recovery:	86.93%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30209600005
Duplicate Sample I.D.:	30209600005DUP
Sample Result (pCi/L, g, F):	0.111
Sample Result Counting Uncertainty (pCi/L, g, F):	0.096
Sample Duplicate Result (pCi/L, g, F):	0.064
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.096
Are sample and/or duplicate results below MDC?	See Below #
Duplicate Numerical Performance Indicator:	0.680
Duplicate RPD:	54.03%
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):	
Matrix Spike Result:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
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:	
Duplicate Numerical Performance Indicator:	
MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	

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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

Laboratory Report

Prepared For:

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

Attention: Mr. Joju Abraham

Report Number: AAE0811

June 02, 2017

Project: CCR Event

Project #: Plant Hammond

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

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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

June 02, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-112	AAE0811-01	Water	05/23/17 14:24	05/24/17 13:05
HGWA-113	AAE0811-02	Water	05/23/17 12:53	05/24/17 13:05
HGWC-117	AAE0811-03	Water	05/23/17 10:15	05/24/17 13:05
HGWC-118	AAE0811-04	Water	05/23/17 11:50	05/24/17 13:05
HGWC-101	AAE0811-05	Water	05/23/17 13:57	05/24/17 13:05
HGWC-103	AAE0811-06	Water	05/23/17 15:10	05/24/17 13:05
Dup-1	AAE0811-07	Water	05/23/17 00:00	05/24/17 13:05



PACE ANALYTICAL SERVICES, LLC.

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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Case Narrative

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



PACE ANALYTICAL SERVICES, LLC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: HGWA-112

Lab Number ID: AAE0811-01

Date/Time Sampled: 5/23/2017 2:24:00PM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	52	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	5.1	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 11:53	7050892	SLH
Fluoride	0.004	0.30	0.004	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 11:53	7050892	SLH
Sulfate	0.55	1.0	0.09	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 11:53	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Barium	0.0293	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Boron	0.0073	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Calcium	6.40	5.00	0.104	mg/L	EPA 6020B		10	05/24/17 17:50	05/31/17 16:10	7050802	KLH
Chromium	0.0038	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:12	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 09:25	05/30/17 14:51	7050854	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 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: HGWA-113

Lab Number ID: AAE0811-02

Date/Time Sampled: 5/23/2017 12:53:00PM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	74	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	1.6	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 12:14	7050892	SLH
Fluoride	0.18	0.30	0.004	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 12:14	7050892	SLH
Sulfate	12	1.0	0.09	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 12:14	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Barium	0.0293	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Boron	0.0082	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Calcium	7.13	5.00	0.104	mg/L	EPA 6020B		10	05/24/17 17:50	05/31/17 16:16	7050802	KLH
Chromium	0.0012	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Selenium	0.0024	0.0100	0.0014	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Lithium	0.0011	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:23	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 09:25	05/30/17 14:53	7050854	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 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: HGWC-117

Lab Number ID: AAE0811-03

Date/Time Sampled: 5/23/2017 10:15:00AM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	258	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	3.6	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 12:34	7050892	SLH
Fluoride	0.01	0.30	0.004	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 12:34	7050892	SLH
Sulfate	110	10	0.92	mg/L	EPA 300.0		10	05/27/17 11:47	05/31/17 18:44	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Barium	0.0352	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Boron	0.438	0.400	0.0604	mg/L	EPA 6020B		10	05/24/17 17:50	05/31/17 16:21	7050802	KLH
Cadmium	0.0005	0.0010	0.00006	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Calcium	32.0	25.0	0.522	mg/L	EPA 6020B		50	05/24/17 17:50	05/31/17 16:21	7050802	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Cobalt	0.0071	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:35	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 09:25	05/30/17 14:56	7050854	MTC



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: HGWC-118

Lab Number ID: AAE0811-04

Date/Time Sampled: 5/23/2017 11:50:00AM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	359	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	4.3	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 12:55	7050892	SLH
Fluoride	0.14	0.30	0.004	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 12:55	7050892	SLH
Sulfate	84	10	0.92	mg/L	EPA 300.0		10	05/27/17 11:47	05/31/17 19:05	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Barium	0.0680	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Boron	0.754	0.400	0.0604	mg/L	EPA 6020B		10	05/24/17 17:50	05/31/17 16:45	7050802	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Calcium	77.2	25.0	0.522	mg/L	EPA 6020B		50	05/24/17 17:50	05/31/17 16:50	7050802	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Lithium	0.0012	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:46	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 09:25	05/30/17 14:58	7050854	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: HGWC-101

Lab Number ID: AAE0811-05

Date/Time Sampled: 5/23/2017 1:57:00PM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	190	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	5.3	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 13:16	7050892	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 13:16	7050892	SLH
Sulfate	97	10	0.92	mg/L	EPA 300.0		10	05/27/17 11:47	05/31/17 19:26	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Barium	0.0436	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Beryllium	0.00007	0.0030	0.00007	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Boron	0.0795	0.0400	0.0060	mg/L	EPA 6020B		1	05/24/17 17:50	05/31/17 16:56	7050802	KLH
Cadmium	0.0002	0.0010	0.00006	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Calcium	18.3	5.00	0.522	mg/L	EPA 6020B		50	05/24/17 17:50	05/31/17 17:02	7050802	KLH
Chromium	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Cobalt	0.0025	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Lead	0.0009	0.0050	0.00007	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 00:57	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 09:25	05/30/17 15:00	7050854	MTC



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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: HGWC-103

Lab Number ID: AAE0811-06

Date/Time Sampled: 5/23/2017 3:10:00PM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	637	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	5.7	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 13:36	7050892	SLH
Fluoride	0.15	0.30	0.004	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 13:36	7050892	SLH
Sulfate	340	50	4.6	mg/L	EPA 300.0		50	05/27/17 11:47	05/31/17 19:46	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Barium	0.0254	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Boron	2.56	0.0400	0.0060	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Cadmium	0.0006	0.0010	0.00006	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Calcium	111	25.0	0.522	mg/L	EPA 6020B		50	05/24/17 17:50	05/31/17 17:07	7050802	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Cobalt	0.0014	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Lithium	0.0012	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 01:20	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 11:45	05/30/17 15:22	7050855	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAE0811-07

Date/Time Sampled: 5/23/2017 12:00:00AM

Date/Time Received: 5/24/2017 1:05:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	358	25	10	mg/L	SM 2540 C		1	05/26/17 16:10	05/26/17 16:10	7050870	JPT
Inorganic Anions											
Chloride	4.3	0.25	0.01	mg/L	EPA 300.0		1	05/27/17 11:47	05/30/17 14:38	7050892	SLH
Fluoride	0.25	0.30	0.004	mg/L	EPA 300.0	J	1	05/27/17 11:47	05/30/17 14:38	7050892	SLH
Sulfate	85	10	0.92	mg/L	EPA 300.0		10	05/27/17 11:47	05/31/17 20:07	7050892	SLH
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Barium	0.0709	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Boron	0.776	0.0400	0.0060	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Calcium	76.6	25.0	0.522	mg/L	EPA 6020B		50	05/24/17 17:50	05/31/17 17:13	7050802	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Lithium	0.0011	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/24/17 17:50	05/27/17 01:32	7050802	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 11:45	05/30/17 15:24	7050855	MTC



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June 02, 2017

Report No.: AAE0811

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050870 - SM 2540 C											
Blank (7050870-BLK1)						Prepared & Analyzed: 05/26/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7050870-BS1)						Prepared & Analyzed: 05/26/17					
Total Dissolved Solids	399	25	10	mg/L	400.00		100	84-108			
Duplicate (7050870-DUP1)						Source: AAE0812-02 Prepared & Analyzed: 05/26/17					
Total Dissolved Solids	168	25	10	mg/L		134			23	10	QR-03
Duplicate (7050870-DUP2)						Source: AAE0826-03 Prepared & Analyzed: 05/26/17					
Total Dissolved Solids	75	25	10	mg/L		27			94	10	QR-03



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June 02, 2017

Report No.: AAE0811

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050892 - EPA 300.0											
Blank (7050892-BLK1)						Prepared: 05/27/17 Analyzed: 05/30/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
LCS (7050892-BS1)						Prepared: 05/27/17 Analyzed: 05/30/17					
Chloride	10.8	0.25	0.01	mg/L	10.020		108	90-110			
Fluoride	10.6	0.30	0.004	mg/L	10.020		106	90-110			
Sulfate	11.0	1.0	0.09	mg/L	10.050		109	90-110			
Matrix Spike (7050892-MS1)						Source: AAE0811-06 Prepared: 05/27/17 Analyzed: 05/30/17					
Chloride	15.8	0.25	0.01	mg/L	10.020	5.70	101	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.15	102	90-110			
Sulfate	224	1.0	0.09	mg/L	10.050	235	NR	90-110			QM-02
Matrix Spike (7050892-MS2)						Source: AAE0812-03 Prepared: 05/27/17 Analyzed: 05/30/17					
Chloride	11.6	0.25	0.01	mg/L	10.020	1.21	104	90-110			
Fluoride	10.1	0.30	0.004	mg/L	10.020	0.006	101	90-110			
Sulfate	44.2	1.0	0.09	mg/L	10.050	37.5	66	90-110			QM-02
Matrix Spike Dup (7050892-MSD1)						Source: AAE0811-06 Prepared: 05/27/17 Analyzed: 05/30/17					
Chloride	15.8	0.25	0.01	mg/L	10.020	5.70	101	90-110	0.2	15	
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.15	102	90-110	0.1	15	
Sulfate	224	1.0	0.09	mg/L	10.050	235	NR	90-110	0.07	15	QM-02



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June 02, 2017

Report No.: AAE0811

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050802 - EPA 3005A											
Blank (7050802-BLK1)											
						Prepared: 05/24/17 Analyzed: 05/26/17					
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	0.0019	0.0100	0.0013	mg/L							J
Lithium	ND	0.0500	0.0011	mg/L							
LCS (7050802-BS1)											
						Prepared: 05/24/17 Analyzed: 05/26/17					
Antimony	0.108	0.0030	0.0003	mg/L	0.10000		108	80-120			
Arsenic	0.103	0.0050	0.0004	mg/L	0.10000		103	80-120			
Barium	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Beryllium	0.112	0.0030	0.00007	mg/L	0.10000		112	80-120			
Boron	1.09	0.0400	0.0060	mg/L	1.0000		109	80-120			
Cadmium	0.113	0.0010	0.00006	mg/L	0.10000		113	80-120			
Calcium	1.07	0.500	0.0104	mg/L	1.0000		107	80-120			
Chromium	0.105	0.0100	0.0003	mg/L	0.10000		105	80-120			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Copper	0.106	0.0250	0.0003	mg/L	0.10000		106	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	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Selenium	0.103	0.0100	0.0014	mg/L	0.10000		103	80-120			
Silver	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Thallium	0.105	0.0010	0.00005	mg/L	0.10000		105	80-120			
Vanadium	0.109	0.0100	0.0014	mg/L	0.10000		109	80-120			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000		105	80-120			
Lithium	0.113	0.0500	0.0011	mg/L	0.10000		113	80-120			



PACE ANALYTICAL SERVICES, LLC.

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

Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050802 - EPA 3005A											
Matrix Spike (7050802-MS1)			Source: AAE0770-01				Prepared: 05/24/17 Analyzed: 05/26/17				
Antimony	0.118	0.0030	0.0003	mg/L	0.10000	0.0097	109	75-125			
Arsenic	0.104	0.0050	0.0004	mg/L	0.10000	ND	104	75-125			
Barium	0.139	0.0100	0.0003	mg/L	0.10000	0.0376	101	75-125			
Beryllium	0.108	0.0030	0.00007	mg/L	0.10000	ND	108	75-125			
Boron	1.07	0.0400	0.0060	mg/L	1.0000	0.0084	106	75-125			
Cadmium	0.109	0.0010	0.00006	mg/L	0.10000	ND	109	75-125			
Calcium	58.2	25.0	0.522	mg/L	1.0000	58.7	NR	75-125			QM-02
Chromium	0.105	0.0100	0.0003	mg/L	0.10000	0.0007	104	75-125			
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	0.0010	103	75-125			
Copper	0.103	0.0250	0.0003	mg/L	0.10000	0.0018	101	75-125			
Lead	0.101	0.0050	0.00007	mg/L	0.10000	0.00008	101	75-125			
Molybdenum	0.113	0.0100	0.0006	mg/L	0.10000	0.0027	111	75-125			
Nickel	0.117	0.0100	0.0003	mg/L	0.10000	0.0133	104	75-125			
Selenium	0.105	0.0100	0.0014	mg/L	0.10000	ND	105	75-125			
Silver	0.104	0.0100	0.0003	mg/L	0.10000	ND	104	75-125			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000	0.0003	103	75-125			
Vanadium	0.108	0.0100	0.0014	mg/L	0.10000	ND	108	75-125			
Zinc	0.144	0.0100	0.0013	mg/L	0.10000	0.0420	102	75-125			
Lithium	0.113	0.0500	0.0011	mg/L	0.10000	0.0026	110	75-125			
Matrix Spike Dup (7050802-MSD1)			Source: AAE0770-01				Prepared: 05/24/17 Analyzed: 05/26/17				
Antimony	0.119	0.0030	0.0003	mg/L	0.10000	0.0097	109	75-125	0.6	20	
Arsenic	0.107	0.0050	0.0004	mg/L	0.10000	ND	107	75-125	2	20	
Barium	0.140	0.0100	0.0003	mg/L	0.10000	0.0376	102	75-125	0.5	20	
Beryllium	0.105	0.0030	0.00007	mg/L	0.10000	ND	105	75-125	3	20	
Boron	1.08	0.0400	0.0060	mg/L	1.0000	0.0084	107	75-125	1	20	
Cadmium	0.108	0.0010	0.00006	mg/L	0.10000	ND	108	75-125	0.6	20	
Calcium	58.6	25.0	0.522	mg/L	1.0000	58.7	NR	75-125	0.7	20	QM-02
Chromium	0.107	0.0100	0.0003	mg/L	0.10000	0.0007	107	75-125	2	20	
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	0.0010	103	75-125	0.3	20	
Copper	0.104	0.0250	0.0003	mg/L	0.10000	0.0018	102	75-125	1	20	
Lead	0.0991	0.0050	0.00007	mg/L	0.10000	0.00008	99	75-125	2	20	
Molybdenum	0.113	0.0100	0.0006	mg/L	0.10000	0.0027	111	75-125	0.05	20	
Nickel	0.118	0.0100	0.0003	mg/L	0.10000	0.0133	104	75-125	0.5	20	
Selenium	0.107	0.0100	0.0014	mg/L	0.10000	ND	107	75-125	2	20	
Silver	0.105	0.0100	0.0003	mg/L	0.10000	ND	105	75-125	1	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	0.0003	101	75-125	2	20	
Vanadium	0.112	0.0100	0.0014	mg/L	0.10000	ND	112	75-125	4	20	
Zinc	0.144	0.0100	0.0013	mg/L	0.10000	0.0420	102	75-125	0.5	20	
Lithium	0.109	0.0500	0.0011	mg/L	0.10000	0.0026	107	75-125	3	20	



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050802 - EPA 3005A											
Post Spike (7050802-PS1)			Source: AAE0770-01			Prepared: 05/24/17 Analyzed: 05/26/17					
Antimony	118			ug/L	100.00	9.73	108	80-120			
Arsenic	107			ug/L	100.00	0.214	107	80-120			
Barium	140			ug/L	100.00	37.6	102	80-120			
Beryllium	106			ug/L	100.00	0.0088	106	80-120			
Boron	1080			ug/L	1000.0	8.35	108	80-120			
Cadmium	109			ug/L	100.00	0.0285	109	80-120			
Calcium	59900			ug/L	1000.0	58700	118	80-120			
Chromium	106			ug/L	100.00	0.661	105	80-120			
Cobalt	105			ug/L	100.00	1.02	104	80-120			
Copper	102			ug/L	100.00	1.80	100	80-120			
Lead	101			ug/L	100.00	0.0818	101	80-120			
Molybdenum	114			ug/L	100.00	2.71	112	80-120			
Nickel	117			ug/L	100.00	13.3	104	80-120			
Selenium	107			ug/L	100.00	0.739	106	80-120			
Silver	104			ug/L	100.00	0.285	104	80-120			
Thallium	102			ug/L	100.00	0.298	101	80-120			
Vanadium	111			ug/L	100.00	0.909	110	80-120			
Zinc	146			ug/L	100.00	42.0	104	80-120			
Lithium	110			ug/L	100.00	2.63	107	80-120			

Batch 7050854 - EPA 7470A

Blank (7050854-BLK1)					Prepared & Analyzed: 05/30/17						
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7050854-BS1)					Prepared & Analyzed: 05/30/17						
Mercury	0.00236	0.00050	0.000041	mg/L	2.5000E-3	94	80-120				



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Report No.: AAE0811

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050854 - EPA 7470A											
Matrix Spike (7050854-MS1)			Source: AAE0770-02			Prepared & Analyzed: 05/30/17					
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
Matrix Spike Dup (7050854-MSD1)			Source: AAE0770-02			Prepared & Analyzed: 05/30/17					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
Post Spike (7050854-PS1)			Source: AAE0770-02			Prepared & Analyzed: 05/30/17					
Mercury	1.72			ug/L	1.6667	-0.00163	103	80-120			
Batch 7050855 - EPA 7470A											
Blank (7050855-BLK1)						Prepared & Analyzed: 05/30/17					
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7050855-BS1)						Prepared & Analyzed: 05/30/17					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3		94	80-120			
Matrix Spike (7050855-MS1)			Source: AAE0811-07			Prepared & Analyzed: 05/30/17					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
Matrix Spike Dup (7050855-MSD1)			Source: AAE0811-07			Prepared & Analyzed: 05/30/17					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	0.8	20	
Post Spike (7050855-PS1)			Source: AAE0811-07			Prepared & Analyzed: 05/30/17					
Mercury	1.67			ug/L	1.6667	-0.00219	100	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 02, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

- 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 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty CC: Maria Padilla Heath McCorkle PO #: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond - AP 3&4		PROJECT #: CCR			
Collection DATE	Collection TIME	MATRIX CODE*	COMPARISON	SAMPLE IDENTIFICATION	CONTAINER TYPE	PRESERVATION	ANALYSIS REQUESTED		
05/23/17	14:24	W	X	HGWA-112	3	Metals Part 257 App III & IV (EPA 6020/7470)			
05/23/17	12:53	W	X	HGWA-113	7	Cl, F, SO, & TDS (EPA 300.0 & SM 2540C)			
05/23/17	10:15	W	X	HGWC-117	3	Radium 226 & 228 (SW-648 9315/9320)			
05/23/17	11:50	W	X	HGWC-118					
05/23/17	13:57	W	X	HGWC-101					
05/23/17	15:10	W	X	HGWC-103					
05/23/17	-	W	X	DUP-1					
SAMPLED BY AND TITLE: W. Virgo 4777 M. Roger 302A				DATE/TIME: 5/23/2017 - 15:30		RELINQUISHED BY: W. Virgo (EPA)		DATE/TIME: 5/23/17 2100	
RECEIVED BY: M. Hammond				DATE/TIME: 5/24/17 1305		RELINQUISHED BY: M. Hammond		DATE/TIME: 5/23/17 2100	
CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		PRESERVATION 1 - HCl, 56°C 2 - H ₂ SO ₄ , 56°C 3 - HNO ₃ 4 - NaOH, 56°C 5 - NaOH/ZnAc, 56°C 6 - Na ₂ S ₂ O ₃ , 56°C 7 - 56°C not frozen		MATRIX CODES: DW - DRINKING WATER S - SOIL WW - WASTEWATER SL - SLUDGE GW - GROUNDWATER SD - SOLID SW - SURFACE WATER A - AIR ST - STORMWATER L - LIQUID W - WATER P - PRODUCT		REMARKS/ADDITIONAL INFORMATION		FOR LAB USE ONLY LAB # ENTERED INTO LIMS: Tracking #	

20170523 AP 3&4 CCR.XLSX



PACE ANALYTICAL SERVICES, LLC.

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

LOG-IN CHECKLIST

Printed: 5/25/2017 9:30:53AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 05/24/17 13:05

Work Order: AAE0811

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 7

#Containers: 28

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:

June 16, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: AAE0811 Plant Hammond
Pace Project No.: 30219828

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on May 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
(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: AAE0811 Plant Hammond

Pace Project No.: 30219828

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: AAE0811 Plant Hammond
Pace Project No.: 30219828

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30219828001	HGWA-112	Water	05/23/17 14:24	05/25/17 10:00
30219828002	HGWA-113	Water	05/23/17 12:53	05/25/17 10:00
30219828003	HGWC-117	Water	05/23/17 10:15	05/25/17 10:00
30219828004	HGWC-118	Water	05/23/17 11:50	05/25/17 10:00
30219828005	HGWC-101	Water	05/23/17 13:57	05/25/17 10:00
30219828006	HGWC-103	Water	05/23/17 15:10	05/25/17 10:00
30219828007	Dup-1	Water	05/23/17 00:00	05/25/17 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAE0811 Plant Hammond
Pace Project No.: 30219828

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30219828001	HGWA-112	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219828002	HGWA-113	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219828003	HGWC-117	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219828004	HGWC-118	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219828005	HGWC-101	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219828006	HGWC-103	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219828007	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: AAE0811 Plant Hammond

Pace Project No.: 30219828

Sample: HGWA-112		Lab ID: 30219828001	Collected: 05/23/17 14:24	Received: 05/25/17 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	0.0782 ± 0.113 (0.245)		pCi/L	06/05/17 08:29	13982-63-3	
		C:93% T:NA					
Radium-228	EPA 9320	0.463 ± 0.353 (0.687)		pCi/L	06/09/17 15:34	15262-20-1	
		C:68% T:90%					
Total Radium	Total Radium Calculation	0.541 ± 0.466 (0.932)		pCi/L	06/13/17 11:19	7440-14-4	

Sample: HGWA-113		Lab ID: 30219828002	Collected: 05/23/17 12:53	Received: 05/25/17 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	0.104 ± 0.117 (0.236)		pCi/L	06/05/17 08:30	13982-63-3	
		C:92% T:NA					
Radium-228	EPA 9320	0.794 ± 0.407 (0.685)		pCi/L	06/09/17 15:34	15262-20-1	
		C:70% T:79%					
Total Radium	Total Radium Calculation	0.898 ± 0.524 (0.921)		pCi/L	06/13/17 11:19	7440-14-4	

Sample: HGWC-117		Lab ID: 30219828003	Collected: 05/23/17 10:15	Received: 05/25/17 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	0.0634 ± 0.104 (0.233)		pCi/L	06/05/17 08:30	13982-63-3	
		C:88% T:NA					
Radium-228	EPA 9320	0.561 ± 0.358 (0.664)		pCi/L	06/09/17 15:34	15262-20-1	
		C:70% T:88%					
Total Radium	Total Radium Calculation	0.624 ± 0.462 (0.897)		pCi/L	06/13/17 11:19	7440-14-4	

Sample: HGWC-118		Lab ID: 30219828004	Collected: 05/23/17 11:50	Received: 05/25/17 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	-0.0276 ± 0.0952 (0.276)		pCi/L	06/05/17 08:31	13982-63-3	
		C:85% T:NA					
Radium-228	EPA 9320	0.398 ± 0.370 (0.753)		pCi/L	06/09/17 15:34	15262-20-1	
		C:73% T:84%					
Total Radium	Total Radium Calculation	0.398 ± 0.465 (1.03)		pCi/L	06/13/17 11:19	7440-14-4	

Sample: HGWC-101		Lab ID: 30219828005	Collected: 05/23/17 13:57	Received: 05/25/17 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	0.0446 ± 0.0885 (0.205)		pCi/L	06/05/17 08:31	13982-63-3	
		C:91% T:NA					
Radium-228	EPA 9320	0.343 ± 0.392 (0.822)		pCi/L	06/09/17 15:34	15262-20-1	
		C:71% T:82%					

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAE0811 Plant Hammond

Pace Project No.: 30219828

Sample: HGWC-101		Lab ID: 30219828005	Collected: 05/23/17 13:57	Received: 05/25/17 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	0.388 ± 0.481 (1.03)		pCi/L	06/13/17 11:19	7440-14-4	

Sample: HGWC-103		Lab ID: 30219828006	Collected: 05/23/17 15:10	Received: 05/25/17 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	0.156 ± 0.131 (0.241)		pCi/L	06/05/17 08:32	13982-63-3	
		C:89% T:NA					
Radium-228	EPA 9320	0.735 ± 0.460 (0.872)		pCi/L	06/12/17 15:59	15262-20-1	
		C:79% T:77%					
Total Radium	Total Radium Calculation	0.891 ± 0.591 (1.11)		pCi/L	06/14/17 09:40	7440-14-4	

Sample: Dup-1		Lab ID: 30219828007	Collected: 05/23/17 00:00	Received: 05/25/17 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	0.0636 ± 0.149 (0.350)		pCi/L	06/05/17 08:35	13982-63-3	
		C:83% T:NA					
Radium-228	EPA 9320	0.874 ± 0.423 (0.734)		pCi/L	06/12/17 16:00	15262-20-1	
		C:81% T:84%					
Total Radium	Total Radium Calculation	0.938 ± 0.572 (1.08)		pCi/L	06/14/17 09:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0811 Plant Hammond

Pace Project No.: 30219828

QC Batch: 259988

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30219828001, 30219828002, 30219828003, 30219828004, 30219828005

METHOD BLANK: 1280841

Matrix: Water

Associated Lab Samples: 30219828001, 30219828002, 30219828003, 30219828004, 30219828005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00323 ± 0.0673 (0.196) C:92% T:NA	pCi/L	06/05/17 08:26	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0811 Plant Hammond

Pace Project No.: 30219828

QC Batch: 259989

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30219828006, 30219828007

METHOD BLANK: 1280842

Matrix: Water

Associated Lab Samples: 30219828006, 30219828007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.138 ± 0.115 (0.200) C:93% T:NA	pCi/L	06/05/17 08:31	

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: AAE0811 Plant Hammond

Pace Project No.: 30219828

QC Batch: 260239

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30219828006, 30219828007

METHOD BLANK: 1281815

Matrix: Water

Associated Lab Samples: 30219828006, 30219828007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.305 ± 0.349 (0.735) C:84% T:85%	pCi/L	06/12/17 15:58	

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: AAE0811 Plant Hammond

Pace Project No.: 30219828

QC Batch: 260238

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30219828001, 30219828002, 30219828003, 30219828004, 30219828005

METHOD BLANK: 1281814

Matrix: Water

Associated Lab Samples: 30219828001, 30219828002, 30219828003, 30219828004, 30219828005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0265 ± 0.372 (0.866) C:69% T:91%	pCi/L	06/09/17 15:32	

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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QUALIFIERS

Project: AAE0811 Plant Hammond
Pace Project No.: 30219828

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#: 30219828



Chain of Custody



Workorder: AAE0811 Plant Hammond Owner Received Date: 6/16/2017 Results Requested By: 6/16/2017

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
						NO	ON		
1	HGWA-112	G	5/23/2017 14:24	AAE0811-01	GW	2			LAB USE ONLY 001
2	HGWA-113	G	5/23/2017 12:53	AAE0811-02	GW	2			002
3	HGWC-117	G	5/23/2017 10:15	AAE0811-03	GW	2			003
4	HGWC-118	G	5/23/2017 11:50	AAE0811-04	GW	2			004
5	HGWC-101	G	5/23/2017 13:57	AAE0811-05	GW	2			005
6	HGWC-103	G	5/23/2017 15:10	AAE0811-06	GW	2			004
7	Dup-1	G	5/23/2017 0:00	AAE0811-07	GW	2			007
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	5/24/17	Karen Hill	5/25/17 10:00	EQUIS deliverable required (Profile 7564)
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.

30219828

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



CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty OC: Maria Padilla Heath McConkie PO #: laburch@southernco.com PROJECT NAME/STATE: Plant Hammond - AP 3&4	
PROJECT #: CCR		ANALYSIS REQUESTED:	
CONTAINER TYPE: P PRESERVATION: 3	P	P	P
# of CONTAINERS	7	3	3
CONTAINER TYPE: P- PLASTIC A- AMBER GLASS G- CLEAR GLASS V- VOA VIAL S- STERILE O- OTHER	PRESERVATION: 1- HCl, 56°C 2- H ₂ SO ₄ , 56°C 3- HNO ₃ 4- NaOH, 56°C 5- NaOH/ZnAc, 56°C 6- Na ₂ S ₂ O ₃ , 56°C 7- 56°C not frozen	MATRIX CODES: DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORM WATER W - WATER S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT	REMARKS/ADDITIONAL INFORMATION
Collection DATE 05/23/17 05/23/17 05/23/17 05/23/17 05/23/17 05/23/17 05/23/17	Collection TIME 14:24 12:53 10:16 11:50 13:57 15:10 -	MATRIX CODE W W W W W W W	SAMPLE IDENTIFICATION HGWA-112 HGWA-113 HGWC-117 HGWC-118 HGWC-101 HGWC-103 DUP-1
RECEIVED BY: W. Virgo DATE/TIME: 5/23/2017 - 15:30	REQUISITIONED BY: W. Virgo DATE/TIME: 5/23/17 2:00	RELINQUISHED BY: (Signature) DATE/TIME: (Signature)	FOR LAB USE ONLY: LAB # AA 20811 Entered into LIS: (Signature)

Sample Condition Upon Receipt Pittsburgh

KEH



Client Name: Pace Georgia Project # 30219828

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 681251045675

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 5/25/17

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: -Includes date/time/ID Matrix: <u>NH</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.
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 < 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>KEH</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>KEH</u> Date: <u>5/25/17</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-226
Analyst: LAL
Date: 6/1/2017
Worklist: 35893
Matrix: DW

Method Blank Assessment

MB Sample ID: 1280842
MB concentration: 0.138
MB Counting Uncertainty: 0.113
MB MDC: 0.200
MB Numerical Performance Indicator: 2.39
MB Status vs Numerical Indicator: N/A
MB Status vs MDC: Pass

Laboratory Control Sample Assessment

LCSD (Y or N)? N
LCS35893 LCSD35893

Count Date: 6/5/2017
Spike I.D.: 13-033
Spike Concentration (pCi/mL): 19.848
Volume Used (mL): 0.40
Aliquot Volume (L, g, F): 0.502
Target Conc. (pCi/L, g, F): 15.805
Uncertainty (Calculated): 0.743
Result (pCi/L, g, F): 14.596
LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.917
Numerical Performance Indicator: -2.01
Percent Recovery: 92.35%
Status vs Numerical Indicator: N/A
Status vs Recovery: Pass

Duplicate Sample Assessment

Sample I.D.: 30219829006
Duplicate Sample I.D.: 30219829006DUP

Sample Result (pCi/L, g, F): 0.200
Sample Duplicate Result (pCi/L, g, F): 0.127
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.144
Are sample and/or duplicate results below MDC? See Below ##
Duplicate Numerical Performance Indicator: 0.627
Duplicate RPD: 32.31%
Duplicate Status vs Numerical Indicator: N/A
Duplicate Status vs RPD: Fail***

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
30219829006
30219829006DUP

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.

Qualkelt

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:
Sample 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:
Sample 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:

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 6/1/2017
Worklist: 35892
Matrix: DW

Method Blank Assessment	
MB Sample ID	1280841
MB concentration:	-0.003
M/B Counting Uncertainty:	0.067
MB MDC:	0.196
MB Numerical Performance Indicator:	-0.09
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	6/5/2017
Spike I.D.:	13-033
Spike Concentration (pCi/mL):	19.848
Volume Used (mL):	0.40
Aliquot Volume (L, g, F):	0.498
Target Conc. (pCi/L, g, F):	15.942
Uncertainty (Calculated):	0.750
Result (pCi/L, g, F):	14.675
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.939
Numerical Performance Indicator:	-2.07
Percent Recovery:	92.05%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30219827005
Duplicate Sample I.D.:	30219827005DUP
Sample Result (pCi/L, g, F):	0.120
Sample Result Counting Uncertainty (pCi/L, g, F):	0.125
Sample Duplicate Result (pCi/L, g, F):	0.048
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.092
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	0.907
Duplicate RPD:	85.84%
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:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample 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:	
Sample 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:	

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JILW
Date: 6/7/2017
Worklist: 35948
Matrix: DW

Method Blank Assessment	
MB Sample ID	1281815
MB concentration:	0.305
M/B Counting Uncertainty:	0.345
MB MDC:	0.735
MB Numerical Performance Indicator:	1.73
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		N	
LCS (Y or N)?		LCS D55948	
Count Date:	6/12/2017		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	24.308		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.803		
Target Conc. (pCi/L, g, F):	6.055		
Uncertainty (Calculated):	0.436		
Result (pCi/L, g, F):	6.239		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.733		
Numerical Performance Indicator:	0.42		
Percent Recovery:	103.04%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Duplicate Sample Assessment	
Sample I.D.:	30219829006
Duplicate Sample I.D.:	30219829006DUP
Sample Result (pCi/L, g, F):	0.724
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.413
Sample Duplicate Result (pCi/L, g, F):	0.368
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.313
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	1.346
Duplicate RPD:	65.17%
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.

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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:	
Sample Matrix Spike Duplicate 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:	
Sample Matrix Spike Duplicate 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



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: JLW
Date: 6/6/2017
Worklist: 35947
Matrix: DW

Method Blank Assessment	
MB Sample ID	1281814
MB concentration:	-0.026
M/B Counting Uncertainty:	0.372
MB MDC:	0.866
MB Numerical Performance Indicator:	-0.14
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?
Count Date:	6/9/2017	LCSD35947
Spike I.D.:	17-005	6/9/2017
Spike Concentration (pCi/mL):	24.332	17-005
Volume Used (mL):	0.20	24.332
Aliquot Volume (L, g, F):	0.806	0.808
Target Conc. (pCi/L, g, F):	6.039	6.023
Uncertainty (Calculated):	0.435	0.434
Result (pCi/L, g, F):	7.214	7.008
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.766	0.721
Numerical Performance Indicator:	2.62	2.29
Percent Recovery:	119.46%	116.34%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS35947	
Duplicate Sample I.D.:	LCSD35947	
Sample Result (pCi/L, g, F):	7.214	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.766	
Sample Duplicate Result (pCi/L, g, F):	7.008	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.721	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	0.384	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	2.64%	
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:

Michelle

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	Sample MS I.D.
Sample MS I.D.:	Sample MSD I.D.
Sample MSD I.D.:	Sample Matrix Spike Result:
Sample Matrix Spike Result:	Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result:	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs RPD:
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: AAE0857

June 05, 2017

Project: CCR Event

Project #: Plant Hammond

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.



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

Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-111	AAE0857-01	Water	05/24/17 09:30	05/25/17 12:40
HGWC-105	AAE0857-02	Water	05/24/17 10:10	05/25/17 12:40
HGWC-107	AAE0857-03	Water	05/24/17 11:45	05/25/17 12:40
HGWC-109	AAE0857-04	Water	05/24/17 13:10	05/25/17 12:40
FB-1	AAE0857-05	Water	05/24/17 14:30	05/25/17 12:40
FERB-1	AAE0857-06	Water	05/24/17 14:35	05/25/17 12:40



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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.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Project: CCR Event

Client ID: HGWA-111

Lab Number ID: AAE0857-01

Date/Time Sampled: 5/24/2017 9:30:00AM

Date/Time Received: 5/25/2017 12:40:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	126	25	10	mg/L	SM 2540 C		1	05/30/17 18:00	05/30/17 18:00	7050912	JPT
Inorganic Anions											
Chloride	3.0	0.25	0.01	mg/L	EPA 300.0		1	05/31/17 15:00	05/31/17 21:50	7050979	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	05/31/17 15:00	05/31/17 21:50	7050979	RLC
Sulfate	1.4	1.0	0.09	mg/L	EPA 300.0		1	05/31/17 15:00	05/31/17 21:50	7050979	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Barium	0.0256	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Boron	0.0094	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Calcium	34.8	25.0	0.522	mg/L	EPA 6020B		50	05/25/17 17:00	05/30/17 21:34	7050846	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Lithium	0.0017	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 21:28	7050846	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 11:45	05/30/17 16:09	7050855	MTC



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Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Project: CCR Event

Client ID: HGWC-105

Lab Number ID: AAE0857-02

Date/Time Sampled: 5/24/2017 10:10:00AM

Date/Time Received: 5/25/2017 12:40:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	352	25	10	mg/L	SM 2540 C		1	05/30/17 18:00	05/30/17 18:00	7050912	JPT
Inorganic Anions											
Chloride	3.5	0.25	0.01	mg/L	EPA 300.0		1	05/31/17 15:00	05/31/17 23:34	7050979	RLC
Fluoride	0.07	0.30	0.004	mg/L	EPA 300.0	J	1	05/31/17 15:00	05/31/17 23:34	7050979	RLC
Sulfate	180	10	0.92	mg/L	EPA 300.0		10	05/31/17 15:00	06/01/17 19:32	7050979	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Barium	0.0668	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Boron	1.30	0.0400	0.0060	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Calcium	75.9	25.0	0.522	mg/L	EPA 6020B		50	05/25/17 17:00	05/30/17 21:57	7050846	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Cobalt	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Lithium	0.0039	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 21:51	7050846	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 11:45	05/30/17 16:12	7050855	MTC



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Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Project: CCR Event

Client ID: HGWC-107

Lab Number ID: AAE0857-03

Date/Time Sampled: 5/24/2017 11:45:00AM

Date/Time Received: 5/25/2017 12:40:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	234	25	10	mg/L	SM 2540 C		1	05/30/17 18:00	05/30/17 18:00	7050912	JPT
Inorganic Anions											
Chloride	2.9	0.25	0.01	mg/L	EPA 300.0		1	05/31/17 15:00	05/31/17 23:54	7050979	RLC
Fluoride	0.009	0.30	0.004	mg/L	EPA 300.0	J	1	05/31/17 15:00	05/31/17 23:54	7050979	RLC
Sulfate	130	10	0.92	mg/L	EPA 300.0		10	05/31/17 15:00	06/01/17 19:52	7050979	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Barium	0.0377	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Boron	0.753	0.0400	0.0060	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Cadmium	0.0001	0.0010	0.00006	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Calcium	49.5	25.0	0.522	mg/L	EPA 6020B		50	05/25/17 17:00	05/30/17 22:08	7050846	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:03	7050846	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 11:45	05/30/17 16:14	7050855	MTC



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Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Project: CCR Event

Client ID: HGWC-109

Lab Number ID: AAE0857-04

Date/Time Sampled: 5/24/2017 1:10:00PM

Date/Time Received: 5/25/2017 12:40:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	184	25	10	mg/L	SM 2540 C		1	05/30/17 18:00	05/30/17 18:00	7050912	JPT
Inorganic Anions											
Chloride	5.3	0.25	0.01	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 00:56	7050979	RLC
Fluoride	0.13	0.30	0.004	mg/L	EPA 300.0	J	1	05/31/17 15:00	06/01/17 00:56	7050979	RLC
Sulfate	40	1.0	0.09	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 00:56	7050979	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Arsenic	0.0012	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Barium	0.0784	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Boron	0.415	0.0400	0.0060	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Calcium	35.3	25.0	0.522	mg/L	EPA 6020B		50	05/25/17 17:00	05/30/17 22:20	7050846	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Cobalt	0.0020	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Lithium	0.0012	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 22:14	7050846	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 11:45	05/30/17 16:16	7050855	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Project: CCR Event

Client ID: FB-1

Lab Number ID: AAE0857-05

Date/Time Sampled: 5/24/2017 2:30:00PM

Date/Time Received: 5/25/2017 12:40:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	05/30/17 18:00	05/30/17 18:00	7050912	JPT
Inorganic Anions											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 01:17	7050979	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 01:17	7050979	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 01:17	7050979	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:25	7050846	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 14:15	05/30/17 17:23	7050856	MTC



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AAE0857-06

Date/Time Sampled: 5/24/2017 2:35:00PM

Date/Time Received: 5/25/2017 12:40:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	05/30/17 18:00	05/30/17 18:00	7050912	JPT
Inorganic Anions											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 01:38	7050979	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 01:38	7050979	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	05/31/17 15:00	06/01/17 01:38	7050979	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Barium	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Calcium	0.0349	0.500	0.0104	mg/L	EPA 6020B	J	1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/25/17 17:00	05/30/17 22:31	7050846	CSW
Mercury	0.00007	0.00050	0.000041	mg/L	EPA 7470A	J	1	05/30/17 14:15	05/30/17 17:27	7050856	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 05, 2017

Report No.: AAE0857

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050912 - SM 2540 C											
Blank (7050912-BLK1)						Prepared & Analyzed: 05/30/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7050912-BS1)						Prepared & Analyzed: 05/30/17					
Total Dissolved Solids	384	25	10	mg/L	400.00		96	84-108			
Duplicate (7050912-DUP1)						Source: AAE0857-04 Prepared & Analyzed: 05/30/17					
Total Dissolved Solids	185	25	10	mg/L		184			0.5	10	
Duplicate (7050912-DUP2)						Source: AAE0858-10 Prepared & Analyzed: 05/30/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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June 05, 2017

Report No.: AAE0857

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050979 - EPA 300.0											
Blank (7050979-BLK1)						Prepared & Analyzed: 05/31/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
LCS (7050979-BS1)						Prepared & Analyzed: 05/31/17					
Chloride	10.2	0.25	0.01	mg/L	10.020		101	90-110			
Fluoride	10.2	0.30	0.004	mg/L	10.020		101	90-110			
Sulfate	10.3	1.0	0.09	mg/L	10.050		103	90-110			
Matrix Spike (7050979-MS1)						Source: AAE0857-03 Prepared: 05/31/17 Analyzed: 06/01/17					
Chloride	12.9	0.25	0.01	mg/L	10.020	2.91	100	90-110			
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.009	102	90-110			
Sulfate	115	1.0	0.09	mg/L	10.050	118	NR	90-110			QM-02
Matrix Spike (7050979-MS2)						Source: AAE0894-01 Prepared: 05/31/17 Analyzed: 06/01/17					
Chloride	99.6	0.25	0.01	mg/L	10.020	99.9	NR	90-110			QM-02
Fluoride	11.2	0.30	0.004	mg/L	10.020	0.42	107	90-110			
Sulfate	275	1.0	0.09	mg/L	10.050	290	NR	90-110			QM-02
Matrix Spike Dup (7050979-MSD1)						Source: AAE0857-03 Prepared: 05/31/17 Analyzed: 06/01/17					
Chloride	13.0	0.25	0.01	mg/L	10.020	2.91	100	90-110	0.2	15	
Fluoride	10.3	0.30	0.004	mg/L	10.020	0.009	102	90-110	0.2	15	
Sulfate	115	1.0	0.09	mg/L	10.050	118	NR	90-110	0.02	15	QM-02



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Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

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 7050846 - EPA 3005A

Blank (7050846-BLK1)

Prepared: 05/25/17 Analyzed: 05/30/17

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 (7050846-BS1)

Prepared: 05/25/17 Analyzed: 05/30/17

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	0.0985	0.0100	0.0003	mg/L	0.10000		99	80-120			
Beryllium	0.106	0.0030	0.00007	mg/L	0.10000		106	80-120			
Boron	1.06	0.0400	0.0060	mg/L	1.0000		106	80-120			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000		104	80-120			
Calcium	0.960	0.500	0.0104	mg/L	1.0000		96	80-120			
Chromium	0.0979	0.0100	0.0003	mg/L	0.10000		98	80-120			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Copper	0.101	0.0250	0.0003	mg/L	0.10000		101	80-120			
Lead	0.0957	0.0050	0.00007	mg/L	0.10000		96	80-120			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Nickel	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Selenium	0.100	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	0.0984	0.0010	0.00005	mg/L	0.10000		98	80-120			
Vanadium	0.104	0.0100	0.0014	mg/L	0.10000		104	80-120			
Zinc	0.102	0.0100	0.0013	mg/L	0.10000		102	80-120			
Lithium	0.103	0.0500	0.0011	mg/L	0.10000		103	80-120			



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050846 - EPA 3005A											
Matrix Spike (7050846-MS1)			Source: AAE0857-01				Prepared: 05/25/17 Analyzed: 05/30/17				
Antimony	0.106	0.0030	0.0003	mg/L	0.10000	ND	106	75-125			
Arsenic	0.102	0.0050	0.0004	mg/L	0.10000	ND	102	75-125			
Barium	0.122	0.0100	0.0003	mg/L	0.10000	0.0256	97	75-125			
Beryllium	0.0993	0.0030	0.00007	mg/L	0.10000	ND	99	75-125			
Boron	1.03	0.0400	0.0060	mg/L	1.0000	0.0094	102	75-125			
Cadmium	0.107	0.0010	0.00006	mg/L	0.10000	ND	107	75-125			
Calcium	35.9	25.0	0.522	mg/L	1.0000	34.8	115	75-125			
Chromium	0.101	0.0100	0.0003	mg/L	0.10000	0.0004	101	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.101	0.0250	0.0003	mg/L	0.10000	0.0005	100	75-125			
Lead	0.0959	0.0050	0.00007	mg/L	0.10000	ND	96	75-125			
Molybdenum	0.104	0.0100	0.0006	mg/L	0.10000	ND	104	75-125			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	0.0007	102	75-125			
Selenium	0.102	0.0100	0.0014	mg/L	0.10000	ND	102	75-125			
Silver	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125			
Thallium	0.0989	0.0010	0.00005	mg/L	0.10000	ND	99	75-125			
Vanadium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0046	101	75-125			
Lithium	0.0972	0.0500	0.0011	mg/L	0.10000	0.0017	95	75-125			
Matrix Spike Dup (7050846-MSD1)			Source: AAE0857-01				Prepared: 05/25/17 Analyzed: 05/30/17				
Antimony	0.108	0.0030	0.0003	mg/L	0.10000	ND	108	75-125	1	20	
Arsenic	0.103	0.0050	0.0004	mg/L	0.10000	ND	103	75-125	2	20	
Barium	0.125	0.0100	0.0003	mg/L	0.10000	0.0256	99	75-125	2	20	
Beryllium	0.100	0.0030	0.00007	mg/L	0.10000	ND	100	75-125	0.9	20	
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0094	101	75-125	1	20	
Cadmium	0.109	0.0010	0.00006	mg/L	0.10000	ND	109	75-125	1	20	
Calcium	36.1	25.0	0.522	mg/L	1.0000	34.8	138	75-125	0.6	20	QM-02
Chromium	0.0997	0.0100	0.0003	mg/L	0.10000	0.0004	99	75-125	1	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	1	20	
Copper	0.101	0.0250	0.0003	mg/L	0.10000	0.0005	100	75-125	0.01	20	
Lead	0.0993	0.0050	0.00007	mg/L	0.10000	ND	99	75-125	4	20	
Molybdenum	0.106	0.0100	0.0006	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	0.0007	102	75-125	0.05	20	
Selenium	0.100	0.0100	0.0014	mg/L	0.10000	ND	100	75-125	2	20	
Silver	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125	0.06	20	
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	ND	100	75-125	1	20	
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.104	0.0100	0.0013	mg/L	0.10000	0.0046	100	75-125	1	20	
Lithium	0.0983	0.0500	0.0011	mg/L	0.10000	0.0017	97	75-125	1	20	



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050846 - EPA 3005A											
Post Spike (7050846-PS1)			Source: AAE0857-01			Prepared: 05/25/17 Analyzed: 05/30/17					
Antimony	106			ug/L	100.00	0.0902	106	80-120			
Arsenic	104			ug/L	100.00	-0.639	104	80-120			
Barium	125			ug/L	100.00	25.6	99	80-120			
Beryllium	103			ug/L	100.00	0.0021	103	80-120			
Boron	1010			ug/L	1000.0	9.35	100	80-120			
Cadmium	106			ug/L	100.00	0.0211	106	80-120			
Calcium	34200			ug/L	1000.0	34800	NR	80-120			QM-02
Chromium	101			ug/L	100.00	0.355	101	80-120			
Cobalt	101			ug/L	100.00	0.0042	101	80-120			
Copper	101			ug/L	100.00	0.503	100	80-120			
Lead	99.4			ug/L	100.00	0.0321	99	80-120			
Molybdenum	107			ug/L	100.00	0.0486	107	80-120			
Nickel	104			ug/L	100.00	0.670	103	80-120			
Selenium	102			ug/L	100.00	-0.0971	102	80-120			
Silver	103			ug/L	100.00	0.0014	103	80-120			
Thallium	100			ug/L	100.00	0.0034	100	80-120			
Vanadium	108			ug/L	100.00	-0.251	108	80-120			
Zinc	106			ug/L	100.00	4.58	101	80-120			
Lithium	101			ug/L	100.00	1.75	99	80-120			

Batch 7050855 - EPA 7470A

Blank (7050855-BLK1)					Prepared & Analyzed: 05/30/17						
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7050855-BS1)					Prepared & Analyzed: 05/30/17						
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	94	80-120				



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Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0857

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7050855 - EPA 7470A											
Matrix Spike (7050855-MS1)			Source: AAE0811-07			Prepared & Analyzed: 05/30/17					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
Matrix Spike Dup (7050855-MSD1)			Source: AAE0811-07			Prepared & Analyzed: 05/30/17					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	0.8	20	
Post Spike (7050855-PS1)			Source: AAE0811-07			Prepared & Analyzed: 05/30/17					
Mercury	1.67			ug/L	1.6667	-0.00219	100	80-120			
Batch 7050856 - EPA 7470A											
Blank (7050856-BLK1)						Prepared & Analyzed: 05/30/17					
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7050856-BS1)						Prepared & Analyzed: 05/30/17					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
Matrix Spike (7050856-MS1)			Source: AAE0858-01			Prepared & Analyzed: 05/30/17					
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
Matrix Spike Dup (7050856-MSD1)			Source: AAE0858-01			Prepared & Analyzed: 05/30/17					
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125	0.6	20	
Post Spike (7050856-PS1)			Source: AAE0858-01			Prepared & Analyzed: 05/30/17					
Mercury	1.64			ug/L	1.6667	0.00915	98	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

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 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty CC: Maria Padilla Heath McCorkle PO #: laburch@southernco.com PROJECT NAME/STATE: Plant Hammond - AP 3&4		PROJECT #: CCR	
Collection DATE	Collection TIME	MATRIX CODE*	CO M P	GR A B	SAMPLE IDENTIFICATION
05/24/17	9:30	W	X	X	HGWA-111
05/24/17	10:10	W	X	X	HGWC-105
05/24/17	11:45	W	X	X	HGWC-107
05/24/17	13:10	W	X	X	HGWC-109
05/24/17	14:30	W	X	X	FB-1
05/24/17	14:35	W	X	X	FERR-1

CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		ANALYSIS REQUESTED: Metals Part 257 App. III & IV (EPA 6020/7470) Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)	
CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		PRESERVATION: 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen	
*MATRIX CODES: DW - DRINKING WATER S - SOIL WW - WASTEWATER SL - SLUDGE GW - GROUNDWATER SD - SOLID SW - SURFACE WATER A - AIR ST - STORM WATER L - LIQUID W - WATER P - PRODUCT			
REMARKS/ADDITIONAL INFORMATION: 2nd Radium Volume collected for Lab QA/QC			

LAB #:	FOR LAB USE ONLY
Entered into LIMS:	AHE0857
Tracking #:	128



PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis
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LOG-IN CHECKLIST

Printed: 5/26/2017 4:00:28PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 05/25/17 12:40

Work Order: AAE0857

Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 6

#Containers: 26

Minimum Temp(C): 2.9

Maximum Temp(C): 2.9

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:

June 19, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: AAE0857 Plant Hammond
Pace Project No.: 30219999

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on May 26, 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: AAE0857 Plant Hammond
Pace Project No.: 30219999

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: AAE0857 Plant Hammond

Pace Project No.: 30219999

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30219999001	HGWA-111	Water	05/24/17 09:30	05/26/17 10:00
30219999002	HGWC-105	Water	05/24/17 10:10	05/26/17 10:00
30219999003	HGWC-107	Water	05/24/17 11:45	05/26/17 10:00
30219999004	HGWC-109	Water	05/24/17 13:10	05/26/17 10:00
30219999005	FB-1	Water	05/24/17 14:30	05/26/17 10:00
30219999006	FERB-1	Water	05/24/17 14:35	05/26/17 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAE0857 Plant Hammond
Pace Project No.: 30219999

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30219999001	HGWA-111	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219999002	HGWC-105	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219999003	HGWC-107	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219999004	HGWC-109	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219999005	FB-1	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30219999006	FERB-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: AAE0857 Plant Hammond

Pace Project No.: 30219999

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-111 Lab ID: 30219999001 Collected: 05/24/17 09:30 Received: 05/26/17 10:00 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.133 ± 0.234 (0.531) C:76% T:NA	pCi/L	06/08/17 08:28	13982-63-3	
Radium-228		EPA 9320	0.489 ± 0.347 (0.673) C:77% T:89%	pCi/L	06/13/17 11:13	15262-20-1	
Total Radium		Total Radium Calculation	0.622 ± 0.581 (1.20)	pCi/L	06/14/17 14:42	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-105 Lab ID: 30219999002 Collected: 05/24/17 10:10 Received: 05/26/17 10:00 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.217 ± 0.197 (0.358) C:92% T:NA	pCi/L	06/08/17 08:28	13982-63-3	
Radium-228		EPA 9320	0.511 ± 0.317 (0.584) C:80% T:86%	pCi/L	06/13/17 11:14	15262-20-1	
Total Radium		Total Radium Calculation	0.728 ± 0.514 (0.942)	pCi/L	06/14/17 14:42	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-107 Lab ID: 30219999003 Collected: 05/24/17 11:45 Received: 05/26/17 10:00 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.0704 ± 0.140 (0.325) C:91% T:NA	pCi/L	06/08/17 08:28	13982-63-3	
Radium-228		EPA 9320	0.323 ± 0.346 (0.717) C:78% T:80%	pCi/L	06/13/17 15:18	15262-20-1	
Total Radium		Total Radium Calculation	0.393 ± 0.486 (1.04)	pCi/L	06/14/17 14:42	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-109 Lab ID: 30219999004 Collected: 05/24/17 13:10 Received: 05/26/17 10:00 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	0.0881 ± 0.160 (0.365) C:91% T:NA	pCi/L	06/08/17 08:28	13982-63-3	
Radium-228		EPA 9320	0.505 ± 0.333 (0.633) C:78% T:99%	pCi/L	06/13/17 15:18	15262-20-1	
Total Radium		Total Radium Calculation	0.593 ± 0.493 (0.998)	pCi/L	06/14/17 14:42	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FB-1 Lab ID: 30219999005 Collected: 05/24/17 14:30 Received: 05/26/17 10:00 Matrix: Water PWS: Site ID: Sample Type:							
Radium-226		EPA 9315	-0.0905 ± 0.0973 (0.378) C:91% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228		EPA 9320	0.541 ± 0.372 (0.705) C:75% T:82%	pCi/L	06/13/17 15:18	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAE0857 Plant Hammond

Pace Project No.: 30219999

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.541 ± 0.469 (1.08)	pCi/L	06/14/17 14:42	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	-0.0619 ± 0.129 (0.409) C:91% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	0.131 ± 0.266 (0.587) C:74% T:95%	pCi/L	06/13/17 15:18	15262-20-1	
Total Radium	Total Radium Calculation	0.131 ± 0.395 (0.996)	pCi/L	06/14/17 14:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0857 Plant Hammond

Pace Project No.: 30219999

QC Batch:	260845	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30219999001, 30219999002, 30219999003, 30219999004, 30219999005, 30219999006		

METHOD BLANK:	1284544	Matrix:	Water
Associated Lab Samples:	30219999001, 30219999002, 30219999003, 30219999004, 30219999005, 30219999006		

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: AAE0857 Plant Hammond

Pace Project No.: 30219999

QC Batch:	260864	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30219999001, 30219999002, 30219999003, 30219999004, 30219999005, 30219999006		

METHOD BLANK:	1284598	Matrix:	Water
Associated Lab Samples:	30219999001, 30219999002, 30219999003, 30219999004, 30219999005, 30219999006		

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: AAE0857 Plant Hammond

Pace Project No.: 30219999

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: AAE0857 Workorder Name: Plant Hammond Owner Received Date: Results Requested By: 6/19/2017

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="background-color: #e0f0ff; padding: 5px; text-align: center;"> WO# : 30219999 <small>30219999</small> </div>						
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Date/Time	Received By	Date/Time	Comments
1	HGWA-111	G	5/24/2017 9:30	AAE0857-01	GW	2				
2	HGWC-105	G	5/23/2017 10:10	AAE0857-02	GW	4				
3	HGWC-107	G	5/23/2017 11:45	AAE0857-03	GW	2				
4	HGWC-109	G	5/23/2017 13:10	AAE0857-04	GW	2				
5	FB-1	G	5/23/2017 14:30	AAE0857-05	GW	2				
6	FERB-1	G	5/23/2017 14:35	AAE0857-06	GW	2				
7					BMD					
8					5/25/17					
9										
10										
Transfers Released By		Date/Time		Received By		Date/Time		Comments		
1 M. RAHMAN		5/25/17		M. RAHMAN		5/25/17/1000		EQUIS deliverable required (Profile 7564)		
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.

30219999 Revised



Chain of Custody

Results Requested By: 6/19/2017

Owner Received Date:

Workorder Name: Plant: Hammond

Workorder: AAE0857

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments	LAB USE ONLY
						H	N			
1	HGWA-111	G	5/24/2017 9:30	AAE0857-01	GW	2				
2	HGWC-105	G	5/24/2017 10:10	AAE0857-02	GW	4				
3	HGWC-107	G	5/24/2017 11:45	AAE0857-03	GW	2				
4	HGWC-109	G	5/24/2017 13:10	AAE0857-04	GW	2				
5	FB-1	G	5/24/2017 14:30	AAE0857-05	W	2				
6	FERR-1	G	5/24/2017 14:35	AAE0857-06	W	2				
7										
8										
9										
10										
Transfers Released By										
1										
2										
3										

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

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

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.

30219999 Revised

CHAIN OF CUSTODY RECORD

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

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty CC: Maria Pacilla Heath McCorkle PO #: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond - AP 3&4		PROJECT #: CCR	
Collection DATE 05/24/17 05/24/17 05/24/17 05/24/17 05/24/17 05/24/17	Collection TIME 9:30 10:10 11:45 13:10 14:30 14:35	MATRIX CODE* W W W W W W	COMPARISON X X X X X X	SAMPLE IDENTIFICATION			
				HGWA-111 HGWC-105 HGWC-107 HGWC-109 FB-1 FERB-1			
SAMPLED BY AND TITLE: W.Virgo #4477 M. Roger #22		DATE/TIME: 5/24/2017 - 15:30		RELINQUISHED BY: DATE/TIME:		FOR LAB USE ONLY LAB #: Entered into LIMS: Tracking #:	
RECEIVED BY LAB: pH checked: Yes No NA Temperature: Min. Max.		RECEIVED BY: Yes No NA Intact Broken Not Present		SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		DATE/TIME: DATE/TIME:	

20170524 AP 3&4 COC.XLSX

30219999

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

CHAIN OF CUSTODY RECORD

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

REPORT TO: Lauren Petty
CC: Maria Padilla
 Heath McCorkle
PO #: laburch@southernco.com

PROJECT NAME/STATE: Plant Hammond - AP 3&4

PROJECT #: CCR

Collection DATE	Collection TIME	MATRIX CODE*	CCOR	SAMPLE IDENTIFICATION	CONTAINER TYPE	ANALYSIS REQUESTED	DATE/TIME
05/24/17	9:30	W	X	HGWA-111	4	Metals Part 257 App. III & IV (EPA 6020/7470) Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SM-846 9315/9320)	5/24/17 18:00
05/23/17	10:10	W	X	HGWC-105	6		5/24/17 18:00
05/23/17	11:45	W	X	HGWC-107	4		
05/23/17	13:10	W	X	HGWC-108	4		
05/23/17	14:30	W	X	FB-1	4		
05/23/17	14:35	W	X	FERB-1	4		

CONTAINER TYPE: P - PLASTIC, A - AMBER GLASS, G - CLEAR GLASS, V - VOA VIAL, S - STERILE, O - OTHER
PRESERVATION: 1 - HCl, 56°C, 2 - H₂SO₄, 56°C, 3 - HNO₃, 4 - NaOH, 56°C, 5 - NaOH/ZnAc, 56°C, 6 - Na₂S₂O₃, 56°C, 7 - 56°C not frozen

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

REMARKS/ADDITIONAL INFORMATION:
 2nd Radium Volume collected for Lab QA/QC

RELINQUISHED BY: Will Vase (EPA) DATE/TIME: 5/24/17 18:00
RELINQUISHED BY: [Signature] DATE/TIME: [Signature]

SAMPLE SHIPPED VIA: UPS, FED-EX, USFS, OTHER, ES
DATE/TIME: 5/25/17 12:40
DATE/TIME: 5/29/17 2:40

RECEIVED BY: [Signature] M. Roger JZA
DATE/TIME: 5/25/17 12:40

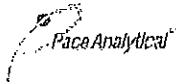
FOR LAB USE ONLY: LAB #: HAE0857
 Entered into LIMS: [Signature]
 Tracking #: [Signature]

20170524 AP 3&4 CCR.xlsx

Sample Condition Upon Receipt Pittsburgh

30219999 - 1

RTB



Client Name: Pace, GA Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 6812 5104 5881

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: GA 5-26-17

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>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>GA</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>GA</u> Date: <u>5-26-17</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: 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	
Count Date:	6/13/2017
Spike I.D.:	17-005
Spike Concentration (pCi/mL):	24.301
Volume Used (mL):	0.20
Aliquot Volume (L, g, F):	0.819
Target Conc. (pCi/L, g, F):	5.931
Uncertainty (Calculated):	0.427
Result (pCi/L, g, F):	6.448
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.643
Numerical Performance Indicator:	1.31
Percent Recovery:	108.73%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	LCS36017
Duplicate Sample I.D.:	LCS36017
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

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

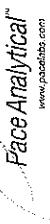
Comments:

June 19/17

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	Sample MS I.D.:
Sample MS I.D.:	Sample MSD I.D.:
Sample Matrix Spike Result:	Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
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 Numerical Indicator:	MS/MSD Duplicate Status vs RPD:

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: JC2
Date: 6/7/2017
Worklist: 36007
Matrix: DW

Method Blank Assessment	
MB Sample ID	1284544
MB concentration:	0.109
MB Counting Uncertainty:	0.163
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	
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	
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***

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:	
Sample Matrix Spike 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:	
Sample Matrix Spike Duplicate 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:	

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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: AAF0136

June 15, 2017

Project: CCR Event

Project #: Plant Hammond

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.



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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWC-121A	AAF0136-01	Ground Water	06/03/17 11:45	06/05/17 10:55
FB-1	AAF0136-02	Water	06/03/17 11:15	06/05/17 10:55
FERB-1	AAF0136-03	Water	06/03/17 12:00	06/05/17 10:55



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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.



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

June 15, 2017

Attention: Mr. Joju Abraham

Report No.: AAF0136

Project: CCR Event

Client ID: HGWC-121A

Lab Number ID: AAF0136-01

Date/Time Sampled: 6/3/2017 11:45:00AM

Date/Time Received: 6/5/2017 10:55:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	846	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
Inorganic Anions											
Chloride	43	0.25	0.01	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 17:59	7060254	RLC
Fluoride	0.15	0.30	0.004	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 17:59	7060254	RLC
Sulfate	270	50	4.6	mg/L	EPA 300.0		50	06/08/17 10:45	06/09/17 13:27	7060254	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Arsenic	0.0010	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Barium	0.0933	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:11	7060221	KLH
Boron	2.62	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 11:30	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Calcium	172	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 20:11	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Lead	0.00007	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:05	7060221	KLH
Lithium	0.0104	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:11	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/06/17 10:35	06/06/17 15:20	7060108	MTC



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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

Report No.: AAF0136

Project: CCR Event

Client ID: FB-1

Lab Number ID: AAF0136-02

Date/Time Sampled: 6/3/2017 11:15:00AM

Date/Time Received: 6/5/2017 10:55:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
Inorganic Anions											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 18:20	7060254	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 18:20	7060254	RLC
Sulfate	0.26	1.0	0.09	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 18:20	7060254	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Arsenic	0.0005	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:17	7060221	KLH
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:17	7060221	KLH
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/08/17 09:20	06/13/17 12:40	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Calcium	0.0188	0.500	0.0104	mg/L	EPA 6020B	B-01, J	1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:17	7060221	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:17	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:17	7060221	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:28	7060221	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:17	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/06/17 10:35	06/06/17 15:22	7060108	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

Report No.: AAF0136

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AAF0136-03

Date/Time Sampled: 6/3/2017 12:00:00PM

Date/Time Received: 6/5/2017 10:55:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
Inorganic Anions											
Chloride	0.03	0.25	0.01	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 18:41	7060254	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 18:41	7060254	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 18:41	7060254	RLC
Metals, Total											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:22	7060221	KLH
Barium	0.0007	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:22	7060221	KLH
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/08/17 09:20	06/13/17 12:46	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Calcium	0.134	0.500	0.0104	mg/L	EPA 6020B	B-01, J	1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:22	7060221	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:22	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:22	7060221	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:34	7060221	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:22	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/06/17 10:35	06/06/17 15:25	7060108	MTC



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June 15, 2017

Report No.: AAF0136

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060176 - SM 2540 C											
Blank (7060176-BLK1)						Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7060176-BS1)						Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	383	25	10	mg/L	400.00		96	84-108			
Duplicate (7060176-DUP1)						Source: AAF0065-02 Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	2980	25	10	mg/L		2970			0.6	10	
Duplicate (7060176-DUP2)						Source: AAF0136-03 Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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June 15, 2017

Report No.: AAF0136

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060254 - EPA 300.0											
Blank (7060254-BLK1)						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							
LCS (7060254-BS1)						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			
Matrix Spike (7060254-MS1)						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
Matrix Spike Dup (7060254-MSD1)						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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Report No.: AAF0136

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060108 - EPA 7470A											
Blank (7060108-BLK1) Prepared & Analyzed: 06/06/17											
Mercury	ND	0.00050	0.000041	mg/L							
LCS (7060108-BS1) Prepared & Analyzed: 06/06/17											
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3		91	80-120			
Matrix Spike (7060108-MS1) Source: AAF0136-01 Prepared & Analyzed: 06/06/17											
Mercury	0.00218	0.00050	0.000041	mg/L	2.5000E-3	ND	87	75-125			
Matrix Spike Dup (7060108-MSD1) Source: AAF0136-01 Prepared & Analyzed: 06/06/17											
Mercury	0.00219	0.00050	0.000041	mg/L	2.5000E-3	ND	88	75-125	0.7	20	
Post Spike (7060108-PS1) Source: AAF0136-01 Prepared & Analyzed: 06/06/17											
Mercury	1.64			ug/L	1.6667	-0.0292	98	80-120			
Batch 7060221 - EPA 3005A											
Blank (7060221-BLK1) 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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June 15, 2017

Report No.: AAF0136

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			



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.: AAF0136

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7060221 - EPA 3005A											
Matrix Spike Dup (7060221-MSD1)			Source: AAF0227-01			Prepared: 06/08/17 Analyzed: 06/09/17					
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	
Post Spike (7060221-PS1)											
Source: AAF0227-01			Prepared: 06/08/17 Analyzed: 06/09/17								
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

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.



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

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty CC: Maria Padilla Heath McConkie PO #: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond - AP 3&4	
PROJECT #: CCR		ANALYSIS REQUESTED			
CONTAINER TYPE: PRESERVATION:	P 3 P 7 P 3	P P P	P P P	P P P	P P P
# of CONTAINERS	Metals Part 257 App. III & IV (EPA 6020/7470) Cl, F, SO, & TDS (EPA 300.0 & SM 2540C) Radium 226 & 228 (SW-846 9315/9320)	4 4 4	1 1 1	1 1 1	2 2 2
CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	PRESERVATION 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen	MATRIX CODES: DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORM WATER W - WATER	S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT	REMARKS/ADDITIONAL INFORMATION	
CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	PRESERVATION 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen	MATRIX CODES: DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORM WATER W - WATER	S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT	REMARKS/ADDITIONAL INFORMATION	
DATE 06/03/17 06/03/17 06/03/17	COLLECTION TIME 1145 1115 1200	MATRIX CODE GW W W	SAMPLE IDENTIFICATION HGWC-121A FB-1 FERB-1	RELINQUISHED BY: PLA DATE/TIME: 6/3/2017 1055	RELINQUISHED BY: PLA DATE/TIME: 6/3/2017 1055
SAMPLED BY AND TITLE: T. Payne RECEIVED BY: C. Hurdle	DATE/TIME: 6/3/2017 - 1200	DATE/TIME: 6/3/2017 - 1200	RECEIVED BY: C. Hurdle	DATE/TIME: 6/3/2017 - 1200	DATE/TIME: 6/3/2017 - 1200
RECEIVED BY: C. Hurdle	DATE/TIME: 6/3/2017 - 1200	RECEIVED BY: C. Hurdle	DATE/TIME: 6/3/2017 - 1200	RECEIVED BY: C. Hurdle	DATE/TIME: 6/3/2017 - 1200
LAB #: AAF 0106	ENTERED IN: AAF 0106	TRACKING #:	FOR LAB USE ONLY	DATE/TIME: 6/3/2017 1055	DATE/TIME: 6/3/2017 1055

Hammond AP 34 HGWC-121A COC 6.3.17 (2).xlsx



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: 6/6/2017 9:53:33AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 06/05/17 10:55

Work Order: AAF0136

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 3

#Containers: 12

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:

June 26, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: AAF0136 Plant Hammond
Pace Project No.: 30220780

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: AAF0136 Plant Hammond
Pace Project No.: 30220780

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: AAF0136 Plant Hammond
Pace Project No.: 30220780

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220780001	HGWC-121A	Water	06/03/17 11:45	06/06/17 10:15
30220780002	FB-1	Water	06/03/17 11:15	06/06/17 10:15
30220780003	FERB-1	Water	06/03/17 12:00	06/06/17 10:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAF0136 Plant Hammond
Pace Project No.: 30220780

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220780001	HGWC-121A	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220780002	FB-1	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220780003	FERB-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: AAF0136 Plant Hammond

Pace Project No.: 30220780

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	-0.0134 ± 0.140 (0.405) C:88% T:NA	pCi/L	06/21/17 08:14	13982-63-3	
Radium-228		EPA 9320	-0.0654 ± 0.374 (0.885) C:73% T:84%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	0.000 ± 0.514 (1.29)	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	-0.0969 ± 0.126 (0.436) C:92% T:NA	pCi/L	06/21/17 08:14	13982-63-3	
Radium-228		EPA 9320	0.154 ± 0.352 (0.781) C:76% T:81%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	0.154 ± 0.478 (1.22)	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	0.176 ± 0.214 (0.446) C:90% T:NA	pCi/L	06/21/17 08:15	13982-63-3	
Radium-228		EPA 9320	0.154 ± 0.471 (1.05) C:77% T:78%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	0.330 ± 0.685 (1.50)	pCi/L	06/23/17 12:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0136 Plant Hammond

Pace Project No.: 30220780

QC Batch: 261654

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30220780001, 30220780002, 30220780003

METHOD BLANK: 1288485

Matrix: Water

Associated Lab Samples: 30220780001, 30220780002, 30220780003

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: AAF0136 Plant Hammond

Pace Project No.: 30220780

QC Batch: 261827 Analysis Method: EPA 9315

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

Associated Lab Samples: 30220780001, 30220780002, 30220780003

METHOD BLANK: 1289194 Matrix: Water

Associated Lab Samples: 30220780001, 30220780002, 30220780003

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: AAF0136 Plant Hammond

Pace Project No.: 30220780

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: AAF0136

Workorder Name: Plant Hammond

Owner Received Date:

Results Requested By: 6/28/2017

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

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

WO#: 30220780



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Date/Time	Received By	Date/Time	Comments
1	HGWC-121A	G	6/3/2017 11:45	AAF0136-01	GW	3				
2	FB-1	G	6/3/2017 11:15	AAF0136-02	W	2				
3	FERR-1	G	6/3/2017 12:00	AAF0136-03	W	2				
4										
5										
6										
7										
8										
9										
10										
Radium 226, 228, Total										

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	6/5/17	MSig Pace	6/6/17	1015 EQUIS deliverable required (Profile 7564)
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 since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh

RTB

30220780



Client Name: Police 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:

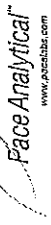
	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	X	X		5. <u>001 ID: #6WC-16</u>
Samples Arrived within Hold Time:	X			6.
Short 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.
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 RTB</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>RTB</u> Date: <u>6/6/17</u>

Client Notification/ Resolution: 6/6/17
 Person Contacted: B. Michaels Date/Time: 7:53 p.m. Contacted By: je
 Comments/ Resolution: Client confirmed sample ID on label in report. Containers were correctly labeled.

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-226
Analyst: JC2
Date: 6/20/2017
Worklist: 36182
Matrix: DW

Method Blank Assessment	
MB Sample ID	1289194
MB Concentration:	0.093
MB 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	
Count Date:	6/21/2017
Spike ID.:	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

Duplicate Sample Assessment	
Sample ID.:	30220781003
Duplicate Sample ID.:	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**

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.

Subout

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
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:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	

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:	
Sample Matrix Spike Duplicate 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:	

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)?
Count Date:	6/21/2017	N
Spike I.D.:	17-005	LCSD36133
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	
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	

Duplicate Sample Assessment	
Sample I.D.:	30221115001
Duplicate Sample I.D.:	30221115001DUP
Sample Result Counting Uncertainty (pCi/L, g, F):	0.557
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.324
Sample Duplicate Result Counting Uncertainty (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***

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.

J. J. J. J.

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD 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 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:	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample 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: AAH0439

August 21, 2017

Project: CCR Event

Project #:Plant Hammond

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
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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-111	AAH0439-01	Water	08/10/17 09:55	08/11/17 14:30
HGWA-112	AAH0439-02	Water	08/10/17 11:00	08/11/17 14:30
HGWA-113	AAH0439-03	Water	08/10/17 13:07	08/11/17 14:30
HGWC-117	AAH0439-04	Water	08/10/17 09:30	08/11/17 14:30
HGWC-118	AAH0439-05	Water	08/10/17 10:50	08/11/17 14:30
HGWC-101	AAH0439-06	Water	08/10/17 12:25	08/11/17 14:30
HGWC-103	AAH0439-07	Water	08/10/17 13:25	08/11/17 14:30
HGWC-105	AAH0439-08	Water	08/10/17 14:25	08/11/17 14:30
HGWC-107	AAH0439-09	Water	08/10/17 14:35	08/11/17 14:30
HGWC-109	AAH0439-10	Water	08/10/17 15:20	08/11/17 14:30
Dup-1	AAH0439-11	Water	08/10/17 00:00	08/11/17 14:30
FB-1	AAH0439-12	Water	08/10/17 15:25	08/11/17 14:30
FERB-1	AAH0439-13	Water	08/10/17 15:30	08/11/17 14:30



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Attention: Mr. Joju Abraham

August 21, 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

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWA-111

Lab Number ID: AAH0439-01

Date/Time Sampled: 8/10/2017 9:55:00AM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	174	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	2.8	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 17:29	7080352	RLC
Fluoride	0.06	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 17:29	7080352	RLC
Sulfate	1.6	1.0	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 17:29	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Barium	0.0306	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Calcium	48.6	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 17:06	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Lithium	0.0017	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:00	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:12	7080361	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWA-112

Lab Number ID: AAH0439-02

Date/Time Sampled: 8/10/2017 11:00:00AM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	60	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	5.2	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 17:50	7080352	RLC
Fluoride	0.03	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 17:50	7080352	RLC
Sulfate	0.66	1.0	0.02	mg/L	EPA 300.0	J	1	08/14/17 11:41	08/14/17 17:50	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Barium	0.0274	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Calcium	6.54	0.500	0.0404	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Chromium	0.0039	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:42	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:15	7080361	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWA-113

Lab Number ID: AAH0439-03

Date/Time Sampled: 8/10/2017 1:07:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	94	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	1.7	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 19:54	7080352	RLC
Fluoride	0.19	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 19:54	7080352	RLC
Sulfate	11	1.0	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 19:54	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Barium	0.0310	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Boron	0.0061	0.0400	0.0060	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Calcium	6.71	0.500	0.0404	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Chromium	0.0019	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Selenium	0.0023	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 17:54	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:17	7080361	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-117

Lab Number ID: AAH0439-04

Date/Time Sampled: 8/10/2017 9:30:00AM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	359	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	5.9	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 20:15	7080352	RLC
Fluoride	0.10	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 20:15	7080352	RLC
Sulfate	140	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/18/17 12:13	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Barium	0.0457	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Boron	0.821	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Cadmium	0.0004	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Calcium	78.9	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 18:11	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Cobalt	0.0031	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Lithium	0.0021	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:05	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:19	7080361	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

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-118

Lab Number ID: AAH0439-05

Date/Time Sampled: 8/10/2017 10:50:00AM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	325	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	4.2	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 20:35	7080352	RLC
Fluoride	0.11	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 20:35	7080352	RLC
Sulfate	78	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 17:20	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Barium	0.0638	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Boron	0.608	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Calcium	83.1	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 18:22	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:16	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:22	7080361	MTC



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Georgia Power
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 Atlanta GA, 30339

August 21, 2017

Attention: Mr. Joju Abraham

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-101

Lab Number ID: AAH0439-06

Date/Time Sampled: 8/10/2017 12:25:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	175	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	5.4	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 20:56	7080352	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 20:56	7080352	RLC
Sulfate	96	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 17:41	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Barium	0.0419	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Boron	0.0814	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Cadmium	0.0002	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Calcium	20.9	5.00	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 18:34	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Cobalt	0.0029	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:28	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:24	7080361	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-103

Lab Number ID: AAH0439-07

Date/Time Sampled: 8/10/2017 1:25:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	459	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	5.8	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 21:17	7080352	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0	B-01	1	08/14/17 11:41	08/14/17 21:17	7080352	RLC
Sulfate	300	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 18:01	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Barium	0.0396	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Boron	2.28	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Cadmium	0.0007	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Calcium	81.2	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 18:56	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Cobalt	0.0025	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Lithium	0.0016	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 18:51	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:27	7080361	MTC



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Georgia Power
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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-105

Lab Number ID: AAH0439-08

Date/Time Sampled: 8/10/2017 2:25:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	356	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	2.9	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 21:37	7080352	RLC
Fluoride	0.03	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 21:37	7080352	RLC
Sulfate	180	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 18:22	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Barium	0.0670	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Boron	1.28	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Calcium	84.0	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 19:08	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Lithium	0.0040	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:02	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:29	7080361	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

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-107

Lab Number ID: AAH0439-09

Date/Time Sampled: 8/10/2017 2:35:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	254	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	2.8	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 21:58	7080352	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 21:58	7080352	RLC
Sulfate	130	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 18:43	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Barium	0.0385	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Boron	0.702	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Calcium	54.2	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 19:19	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:13	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:31	7080361	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: HGWC-109

Lab Number ID: AAH0439-10

Date/Time Sampled: 8/10/2017 3:20:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	208	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	4.6	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 22:19	7080352	RLC
Fluoride	0.12	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 22:19	7080352	RLC
Sulfate	40	1.0	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 22:19	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Arsenic	0.0016	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Barium	0.0903	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Boron	0.397	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Calcium	43.1	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 19:31	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Cobalt	0.0012	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:25	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:34	7080361	MTC



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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 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAH0439-11

Date/Time Sampled: 8/10/2017 12:00:00AM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	346	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	6.0	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 22:39	7080352	RLC
Fluoride	0.06	0.30	0.03	mg/L	EPA 300.0	B-01, J	1	08/14/17 11:41	08/14/17 22:39	7080352	RLC
Sulfate	130	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 19:03	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Barium	0.0472	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Boron	0.809	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Cadmium	0.0004	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Calcium	82.3	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/17/17 19:42	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Cobalt	0.0029	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Lithium	0.0020	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 19:36	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:41	7080361	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: FB-1

Lab Number ID: AAH0439-12

Date/Time Sampled: 8/10/2017 3:25:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	0.08	0.25	0.02	mg/L	EPA 300.0	J	1	08/14/17 11:41	08/14/17 23:00	7080352	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 23:00	7080352	RLC
Sulfate	ND	1.0	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/14/17 23:00	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 19:59	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:43	7080361	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Report No.: AAH0439

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AAH0439-13

Date/Time Sampled: 8/10/2017 3:30:00PM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
Inorganic Anions											
Chloride	0.10	0.25	0.02	mg/L	EPA 300.0	J	1	08/14/17 11:41	08/15/17 01:04	7080352	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/14/17 11:41	08/15/17 01:04	7080352	RLC
Sulfate	ND	1.0	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/15/17 01:04	7080352	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:05	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:45	7080361	MTC



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August 21, 2017

Report No.: AAH0439

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7080392 - SM 2540 C											
Blank (7080392-BLK1)						Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7080392-BS1)						Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	369	25	10	mg/L	400.00		92	84-108			
Duplicate (7080392-DUP1)						Source: AAH0439-10 Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	198	25	10	mg/L		208			5	10	
Duplicate (7080392-DUP2)						Source: AAH0439-13 Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Report No.: AAH0439

Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7080352 - EPA 300.0											
Blank (7080352-BLK1)						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							
LCS (7080352-BS1)						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			
Matrix Spike (7080352-MS1)						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
Matrix Spike (7080352-MS2)						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			
Matrix Spike Dup (7080352-MSD1)						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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August 21, 2017

Report No.: AAH0439

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7080361 - EPA 7470A											
Blank (7080361-BLK1) Prepared & Analyzed: 08/15/17											
Mercury	ND	0.00050	0.000036	mg/L							
LCS (7080361-BS1) Prepared & Analyzed: 08/15/17											
Mercury	0.00241	0.00050	0.000036	mg/L	2.5000E-3		96	80-120			
Matrix Spike (7080361-MS1) Source: AAH0433-01 Prepared & Analyzed: 08/15/17											
Mercury	0.00245	0.00050	0.000036	mg/L	2.5000E-3	ND	98	75-125			
Matrix Spike Dup (7080361-MSD1) 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	
Post Spike (7080361-PS1) Source: AAH0433-01 Prepared & Analyzed: 08/15/17											
Mercury	1.71			ug/L	1.6667	0.00991	102	80-120			
Batch 7080373 - EPA 3005A											
Blank (7080373-BLK1) 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 21, 2017

Report No.: AAH0439

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 7080373 - EPA 3005A

LCS (7080373-BS1)

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			

Matrix Spike (7080373-MS1)

Source: AAH0433-02

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 21, 2017

Report No.: AAH0439

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7080373 - EPA 3005A											
Matrix Spike Dup (7080373-MSD1)			Source: AAH0433-02			Prepared & Analyzed: 08/17/17					
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	
Post Spike (7080373-PS1)			Source: AAH0433-02			Prepared & Analyzed: 08/17/17					
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			



PACE ANALYTICAL SERVICES, LLC.

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

Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 21, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

- 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.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power		CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7289		REPORT TO: Lauren Petty Heath McCortle		CC: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond - AP 3&4		PROJECT #: Phase II - CCR	
Collection DATE	Collection TIME	MATRIX CODE*	C O R A M B	SAMPLE IDENTIFICATION	CONTAINER TYPE: PRESERVATION:	ANALYSIS REQUESTED	CONTAINER TYPE: PRESERVATION:	LAB #	DATE/TIME	DATE/TIME	REMARKS/ADDITIONAL INFORMATION
08/10/17	9:55	W	X	HGWA-111	3		3		8/10/17 200		1 - HCl, ≤6°C
08/10/17	11:00	W	X	HGWA-112	7		7				2 - H ₂ SO ₄ , ≤6°C
08/10/17	13:07	W	X	HGWA-113							3 - HNO ₃
08/10/17	9:30	W	X	HGWC-117							4 - NaOH, ≤6°C
08/10/17	10:50	W	X	HGWC-118							5 - NaOH/ZnAc, ≤8°C
08/10/17	12:25	W	X	HGWC-101							6 - Na ₂ S ₂ O ₃ , ≤6°C
08/10/17	13:25	W	X	HGWC-103							7 - ≤6°C not frozen
08/10/17	14:25	W	X	HGWC-105							
08/10/17	14:35	W	X	HGWC-107							
08/10/17	15:20	W	X	HGWC-109							
08/10/17	-	W	X	DUP-1							
08/10/17	15:25	W	X	FB-1							

RELINQUISHED BY: Will V. Iso (EPA)	DATE/TIME: 8/10/17 200	RELINQUISHED BY: [Signature]	DATE/TIME: 8/10/17 200
RECEIVED BY LAB: M. Thomas 3027	DATE/TIME: 8/10/17 14:30	RECEIVED BY LAB: [Signature]	DATE/TIME: 8/10/17 14:30
TEMPERATURE: 1.1	DATE/TIME: 8/10/17 14:30	TEMPERATURE: 1.1	DATE/TIME: 8/10/17 14:30
NO. NA	NO. NA	NO. NA	NO. NA



CHAIN OF CUSTODY RECORD

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

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty CC: Maria Pacilla Heath McCorkle PO #: laburch@southernco.com PROJECT NAME/STATE: Plant Hammond - AP 3&4		PROJECT #: Phase II - CCR	
Collection DATE	Collection TIME	MATRIX CODE*	GRA B	SAMPLE IDENTIFICATION	
08/10/17	15:30	W	X	FERB-1	
ANALYSIS REQUESTED					
CONTAINER TYPE: P	3	P	7	P	3
PRESERVATION: # of CONTAINERS → 4					
Metals Part 257 App. III & IV (EPA 8020/7470) 1 Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C) 1 Radium 226 & 228 (SW-846 9315/9320) 2					
CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER					
PRESERVATION 1 - HCl, ≤6°C 2 - H ₂ SO ₄ , ≤6°C 3 - HNO ₃ 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na ₂ S ₂ O ₃ , ≤6°C 7 - ≤6°C not frozen					
MATRIX CODES: DW - DRINKING WATER S - SOIL WW - WASTEWATER SL - SLUDGE GW - GROUNDWATER SD - SOLID SW - SURFACE WATER A - AIR ST - STORM WATER L - LIQUID W - WATER P - PRODUCT					
REMARKS/ADDITIONAL INFORMATION					
LAB # AA H0 439 Entered into LIMS Tracking #					

FOR LAB USE ONLY

RELINQUISHED BY: W. J. V. S. (EPA) DATE/TIME: 8/10/17 2:00
 RELINQUISHED BY: DATE/TIME:

SAMPLE SHIPPED VIA COURIER CLIENT OTHER FS
 LPS FEDEX USPS
 (Insect Seal) (Broken) (Not Present)

RECEIVED BY: M. Thomas JOT DATE/TIME: 8/10/17 15:30
 RECEIVED BY: DATE/TIME:

CEIVED BY: M. Thomas JOT DATE/TIME: 8/10/17 11:00
 RECEIVED BY: DATE/TIME:

Temp (C) Min. Max. 1/1

20170810 AP 3&4 CCR Sample Management Form.xls

Page 24 of 26

Sample Condition Upon Receipt



Client Name: GIA Power

Project # AAH0439

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.	
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>GWD</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: _____ 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



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 11:34:52AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/11/17 14:30

Work Order: AAH0439

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 13

#Containers: 54

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 05, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: AAH0439 Plant Hammond
Pace Project No.: 30227121

Dear Maria Padilla:

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.

Revision 1: This report replaces the September 1, 2017 report. Project reissued September 5, 2017 to reflect correction of Client Sample ID for 30227121011.

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: AAH0439 Plant Hammond

Pace Project No.: 30227121

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: AAH0439 Plant Hammond
Pace Project No.: 30227121

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30227121001	HGWA-111	Water	08/10/17 09:55	08/14/17 09:30
30227121002	HGWA-112	Water	08/10/17 11:00	08/14/17 09:30
30227121003	HGWA-113	Water	08/10/17 13:07	08/14/17 09:30
30227121004	HGWC-117	Water	08/10/17 09:30	08/14/17 09:30
30227121005	HGWC-118	Water	08/10/17 10:50	08/14/17 09:30
30227121006	HGWC-101	Water	08/10/17 12:25	08/14/17 09:30
30227121007	HGWC-103	Water	08/10/17 13:25	08/14/17 09:30
30227121008	HGWC-105	Water	08/10/17 14:25	08/14/17 09:30
30227121009	HGWC-107	Water	08/10/17 14:35	08/14/17 09:30
30227121010	HGWC-109	Water	08/10/17 15:20	08/14/17 09:30
30227121011	Dup-1	Water	08/10/17 00:00	08/14/17 09:30
30227121012	FB-1	Water	08/10/17 15:25	08/14/17 09:30
30227121013	FERB-1	Water	08/10/17 15:30	08/14/17 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAH0439 Plant Hammond
Pace Project No.: 30227121

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30227121001	HGWA-111	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121002	HGWA-112	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121003	HGWA-113	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121004	HGWC-117	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121005	HGWC-118	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121006	HGWC-101	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121007	HGWC-103	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121008	HGWC-105	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121009	HGWC-107	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121010	HGWC-109	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121011	Dup-1	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121012	FB-1	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1
30227121013	FERB-1	EPA 9315	JC2	1

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 9320	VAL	1
		Total Radium Calculation	JAL	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

Sample: HGWA-111		Lab ID: 30227121001	Collected: 08/10/17 09:55	Received: 08/14/17 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	0.329 ± 0.232 (0.373) C:89% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.416 ± 0.414 (0.850) C:81% T:81%	pCi/L	08/22/17 18:15	15262-20-1	
Total Radium	Total Radium Calculation	0.745 ± 0.646 (1.22)	pCi/L	08/31/17 14:22	7440-14-4	

Sample: HGWA-112		Lab ID: 30227121002	Collected: 08/10/17 11:00	Received: 08/14/17 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	0.439 ± 0.257 (0.367) C:92% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.0970 ± 0.365 (0.830) C:82% T:82%	pCi/L	08/22/17 18:15	15262-20-1	
Total Radium	Total Radium Calculation	0.536 ± 0.622 (1.20)	pCi/L	08/31/17 14:22	7440-14-4	

Sample: HGWA-113		Lab ID: 30227121003	Collected: 08/10/17 13:07	Received: 08/14/17 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	0.454 ± 0.281 (0.446) C:95% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.305 ± 0.352 (0.732) C:79% T:81%	pCi/L	08/22/17 18:15	15262-20-1	
Total Radium	Total Radium Calculation	0.759 ± 0.633 (1.18)	pCi/L	08/31/17 14:22	7440-14-4	

Sample: HGWC-117		Lab ID: 30227121004	Collected: 08/10/17 09:30	Received: 08/14/17 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	0.452 ± 0.249 (0.317) C:97% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.243 ± 0.376 (0.814) C:76% T:85%	pCi/L	08/22/17 18:15	15262-20-1	
Total Radium	Total Radium Calculation	0.695 ± 0.625 (1.13)	pCi/L	08/31/17 14:22	7440-14-4	

Sample: HGWC-118		Lab ID: 30227121005	Collected: 08/10/17 10:50	Received: 08/14/17 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	0.282 ± 0.219 (0.370) C:86% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.656 ± 0.442 (0.839) C:75% T:87%	pCi/L	08/22/17 18:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-118 Lab ID: 30227121005 Collected: 08/10/17 10:50 Received: 08/14/17 09:30 Matrix: Water PWS: Site ID: Sample Type:						
Total Radium	Total Radium Calculation	0.938 ± 0.661 (1.21)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-101 Lab ID: 30227121006 Collected: 08/10/17 12:25 Received: 08/14/17 09:30 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.310 ± 0.224 (0.374) C:90% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.719 ± 0.460 (0.864) C:80% T:84%	pCi/L	08/22/17 18:15	15262-20-1	
Total Radium	Total Radium Calculation	1.03 ± 0.684 (1.24)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-103 Lab ID: 30227121007 Collected: 08/10/17 13:25 Received: 08/14/17 09:30 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.406 ± 0.292 (0.525) C:91% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.195 ± 0.401 (0.886) C:77% T:84%	pCi/L	08/22/17 18:15	15262-20-1	
Total Radium	Total Radium Calculation	0.601 ± 0.693 (1.41)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-105 Lab ID: 30227121008 Collected: 08/10/17 14:25 Received: 08/14/17 09:30 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.423 ± 0.255 (0.385) C:94% T:NA	pCi/L	08/18/17 08:16	13982-63-3	
Radium-228	EPA 9320	0.931 ± 0.473 (0.808) C:78% T:83%	pCi/L	08/22/17 18:16	15262-20-1	
Total Radium	Total Radium Calculation	1.35 ± 0.728 (1.19)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-107 Lab ID: 30227121009 Collected: 08/10/17 14:35 Received: 08/14/17 09:30 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.423 ± 0.259 (0.397) C:90% T:NA	pCi/L	08/18/17 08:17	13982-63-3	
Radium-228	EPA 9320	0.417 ± 0.445 (0.927) C:80% T:83%	pCi/L	08/22/17 18:16	15262-20-1	
Total Radium	Total Radium Calculation	0.840 ± 0.704 (1.32)	pCi/L	08/31/17 14:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.202 ± 0.207 (0.406) C:93% T:NA	pCi/L	08/18/17 08:17	13982-63-3	
Radium-228		EPA 9320	0.489 ± 0.387 (0.757) C:78% T:87%	pCi/L	08/22/17 18:16	15262-20-1	
Total Radium		Total Radium Calculation	0.691 ± 0.594 (1.16)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.206 ± 0.193 (0.363) C:94% T:NA	pCi/L	08/18/17 08:17	13982-63-3	
Radium-228		EPA 9320	0.508 ± 0.404 (0.789) C:80% T:80%	pCi/L	08/22/17 18:16	15262-20-1	
Total Radium		Total Radium Calculation	0.714 ± 0.597 (1.15)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.131 ± 0.178 (0.380) C:94% T:NA	pCi/L	08/18/17 08:17	13982-63-3	
Radium-228		EPA 9320	0.307 ± 0.354 (0.737) C:77% T:80%	pCi/L	08/22/17 18:16	15262-20-1	
Total Radium		Total Radium Calculation	0.438 ± 0.532 (1.12)	pCi/L	08/31/17 14:22	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.199 ± 0.199 (0.390) C:95% T:NA	pCi/L	08/18/17 08:17	13982-63-3	
Radium-228		EPA 9320	0.636 ± 0.461 (0.889) C:78% T:79%	pCi/L	08/22/17 18:16	15262-20-1	
Total Radium		Total Radium Calculation	0.835 ± 0.660 (1.28)	pCi/L	08/31/17 14:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

QC Batch:	268401	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30227121001, 30227121002, 30227121003, 30227121004, 30227121005, 30227121006, 30227121007, 30227121008, 30227121009, 30227121010, 30227121011, 30227121012, 30227121013		

METHOD BLANK:	1321110	Matrix:	Water
Associated Lab Samples:	30227121001, 30227121002, 30227121003, 30227121004, 30227121005, 30227121006, 30227121007, 30227121008, 30227121009, 30227121010, 30227121011, 30227121012, 30227121013		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.207 ± 0.167 (0.268) C:98% T:NA	pCi/L	08/18/17 08:15	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

QC Batch:	268400	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30227121001, 30227121002, 30227121003, 30227121004, 30227121005, 30227121006, 30227121007, 30227121008, 30227121009, 30227121010, 30227121011, 30227121012, 30227121013		

METHOD BLANK:	1321109	Matrix:	Water
Associated Lab Samples:	30227121001, 30227121002, 30227121003, 30227121004, 30227121005, 30227121006, 30227121007, 30227121008, 30227121009, 30227121010, 30227121011, 30227121012, 30227121013		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.758 ± 0.377 (0.651) C:78% T:88%	pCi/L	08/22/17 15:56	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AAH0439 Plant Hammond

Pace Project No.: 30227121

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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Chain of Custody



Workorder: AAH0439

Workorder Name: Plant Hammond

Owner Received Date:

Results Requested By: 9/6/2017

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

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			Date/Time	Comments
						EQ	ONE	LAB USE ONLY		
1	HGWA-111	G	8/10/2017 9:55	AAH0439-01	GW	2			X	
2	HGWA-112	G	8/10/2017 11:00	AAH0439-02	GW	2			X	
3	HGWA-113	G	8/10/2017 13:07	AAH0439-03	GW	2			X	
4	HGWC-117	G	8/10/2017 9:30	AAH0439-04	GW	2			X	
5	HGWC-118	G	8/10/2017 10:50	AAH0439-05	GW	4			X	
6	HGWC-101	G	8/10/2017 12:25	AAH0439-06	GW	2			X	
7	HGWC-103	G	8/10/2017 13:25	AAH0439-07	GW	2			X	
8	HGWC-105	G	8/10/2017 14:25	AAH0439-08	GW	2			X	
9	HGWC-107	G	8/10/2017 14:35	AAH0439-09	GW	2			X	
10	HGWC-109	G	8/10/2017 15:20	AAH0439-10	GW	2			X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	8/11/17	A. C. C. C.	8/14/2017	EQUIS deliverable required (Profile 7564)
2					
3					

Cooler Temperature on Receipt 11 °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



Workorder: AAH0439
 Results Requested By: 9/6/2017

Owner Received Date:

Workorder Name: Plant Hammond

Report To:	Subcontract To:		Preserved Containers		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	Matrix	Matrix	NOH		
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	LAB USE ONLY
11	Dup-1-1-4-17	G	8/10/2017 0:00	AAH0439-11	GW	01
12	FB-1	G	8/10/2017 15:25	AAH0439-12	W	012
13	FERB-1	G	8/10/2017 15:30	AAH0439-13	W	013
14						
15						
16						
17						
18						
19						
20						
Transfers	Released By	Date/Time	Received By	Date/Time	Comments	
1	M. RAHMAN	8/11/17	D. GARY	8/14/17	REQUIS deliverable required (Profile 7564)	
2						
3						

Cooler Temperature on Receipt 45 °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.



Pace Analytical Services, Inc.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 · FAX (770) 734-4201 · www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239		REPORT TO: Lauren Petty CC: Maria Padilla Heath McConkie PO #: laburch@southernco.com		PROJECT NAME/STATE: Plant Hammond - AP 3&4 PROJECT #: Phase II - CCR	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	SAMPLE IDENTIFICATION	ANALYSIS REQUESTED
08/10/17	9:55	W	X	HGWA-111	Metals Part 257 App. III & IV (EPA 602/07470)
08/10/17	11:00	W	X	HGWA-112	Cl, F, SO ₄ & TDS (EPA 300.0 & SM 2540C)
08/10/17	13:07	W	X	HGWA-113	Radium 226 & 228 (GW-848 9315/8320)
08/10/17	9:30	W	X	HGWC-117	
08/10/17	10:50	W	X	HGWC-118	
08/10/17	12:25	W	X	HGWC-101	
08/10/17	13:25	W	X	HGWC-103	
08/10/17	14:25	W	X	HGWC-105	
08/10/17	14:35	W	X	HGWC-107	
08/10/17	15:20	W	X	HGWC-109	
08/10/17	--	W	X	DUP-1	
08/10/17	15:25	W	X	FB-1	
SAMPLED BY AND TITLE: W.Vingo #77 M.Thomas 307		DATE/TIME: 8/10/17 15:30		RELINQUISHED BY: Will V. Go (EPM)	
RECEIVED BY: M. Thomas		DATE/TIME: 8/10/17 15:30		RELINQUISHED BY: J. J.	
RECEIVED BY LAB: M. Thomas		DATE/TIME: 8/10/17 15:30		RELINQUISHED BY: J. J.	
SHIP TO: NA SHIP FROM: NA SHIP DATE: 8/10/17		SHIP TO: NA SHIP FROM: NA SHIP DATE: 8/10/17		SHIP TO: NA SHIP FROM: NA SHIP DATE: 8/10/17	

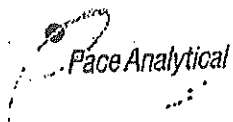


Pace Analytical Services, Inc.
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
 (770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-508-7239 REPORT TO: Lauren Peaty REQUESTED COMPLETION DATE: CC: Maria Padilla Heath McCorrle PO #: laburch@southernco.com PROJECT NAME/STATE: Plant Hammond - AP 3&4 PROJECT #: Phase II - CCR		CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION: 1 - HCl, 56°C 2 - H ₂ SO ₄ , 56°C 3 - HNO ₃ 4 - NaOH, 56°C 5 - NaOH/ZnAs, 56°C 6 - Na ₂ S ₂ O ₃ , 56°C 7 - 56°C not frozen																																																																																																										
CONTAINER TYPE: P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER MATRIX CODES: DW - DRINKING WATER S - SOIL MW - WASTEWATER SL - SLUDGE GW - GROUNDWATER SD - SOLID SW - SURFACE WATER A - AIR ST - STORM WATER L - LIQUID W - WATER P - PRODUCT		ANALYSIS REQUESTED <table border="1"> <thead> <tr> <th>CONTAINER TYPE</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> <th>P</th> </tr> </thead> <tbody> <tr> <td># of</td> <td>3</td> <td>7</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PRESERVATION:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ANALYSIS:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>REMARKS:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		CONTAINER TYPE	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	# of	3	7	3																		PRESERVATION:																					ANALYSIS:																					REMARKS:																				
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RECEIVED BY AND TITLE: W.Viggo 9/17/19 M.Thomas 307 RECEIVED BY:		DATE/TIME: 8/10/19 1530 DATE/TIME:																																																																																																										
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RECEIVED BY DAY: M.Thomas DATE/TIME: 8/10/19 1530		RECEIVED BY DAY: W.Viggo DATE/TIME: 8/10/19 1530																																																																																																										

Sample Condition Upon Receipt



Client Name: GTA power

Project # AAH0439

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 PR

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	30227121
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>GLD</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 TCC 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: _____
 Person Contacted _____ Date/Time _____
 Comments/ Resolution _____

Field Data Required? Y N

Project Manager Review: Wade 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-000007-3 11 September 2006

Sample Condition Upon Receipt Pittsburgh

Face Analytical

Client Name: Pace-GA

Project # 0227121

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 7413 6657 8399, 7413 6657 8414

Label	<u>AMC</u>
LIMS Login	<u>AMC</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 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 Reinquished:	/			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>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



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 8/16/2017
Worklist: 37229
Matrix: DW

Method Blank Assessment	
MB Sample ID	1321109
MB concentration:	0.758
M/B Counting Uncertainty:	0.352
MB MDC:	0.651
MB Numerical Performance Indicator:	4.22
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
Count Date:	8/22/2017
Spike I.D.:	17-005
Spike Concentration (pCi/mL):	23.745
Volume Used (mL):	0.20
Aliquot Volume (L, g, F):	0.808
Target Conc. (pCi/L, g, F):	5.879
Uncertainty (Calculated):	0.423
Result (pCi/L, g, F):	6.433
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.646
Numerical Performance Indicator:	1.41
Percent Recovery:	109.42%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample I.D.:	30226784001
Duplicate Sample I.D.:	30226784007DUP
Sample Result (pCi/L, g, F):	1.034
Sample Result Counting Uncertainty (pCi/L, g, F):	0.360
Sample Duplicate Result (pCi/L, g, F):	0.863
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.352
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	0.588
Duplicate RPD:	15.76%
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:
*The method blank result is below the reporting limit for this analysis and is acceptable.

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):	
MSD Aliquot (L, g, F):	
MS Target Conc. (pCi/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:	
Sample 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:	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
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



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
 Analyst: JC2
 Date: 8/17/2017
 Worklist: 37230
 Matrix: DW

Method Blank Assessment

MB Sample ID: 1321110
 MB concentration: 0.207
 M/B Counting Uncertainty: 0.164
 MB MDC: 0.268
 MB Numerical Performance Indicator: 2.47
 MB Status vs Numerical Indicator: N/A
 MB Status vs. MDC: Pass

Laboratory Control Sample Assessment

Count Date:	LCS#	N
8/18/2017	LCS37230	LCS037230
Spike I.D.:	17-030	
Spike Concentration (pCi/mL):	80.195	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	16.002	
Uncertainty (Calculated):	1.474	
Result (pCi/L, g, F):	12.791	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.073	
Numerical Performance Indicator:	-3.45	
Percent Recovery:	79.94%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Duplicate Sample Assessment

Sample I.D.:	Duplicate Sample I.D.:	Sample Result Counting Uncertainty (pCi/L, g, F):	Duplicate Result Counting Uncertainty (pCi/L, g, F):	Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	Duplicate Numerical Performance Indicator:	Duplicate RPD:	Duplicate Status vs Numerical Indicator:	Duplicate Status vs RPD:
30226784001	30226784001DUP	0.448	0.286	0.303	0.225	0.783	38.71%	N/A
		See Below ##						Fail***

Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
 30226784001
 30226784001DUP

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 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.



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: AAK0534

November 22, 2017

Project: CCR Event

Project #:Plant Hammond

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.

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Georgia Power
2480 Maner Road
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 22, 2017

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HGWA-111	AAK0534-01	Water	11/13/17 15:10	11/15/17 13:15
HGWA-112	AAK0534-02	Water	11/13/17 15:15	11/15/17 13:15
HGWA-113	AAK0534-03	Water	11/14/17 09:10	11/15/17 13:15
HGWC-117	AAK0534-04	Water	11/14/17 10:30	11/15/17 13:15
HGWC-118	AAK0534-05	Water	11/14/17 11:30	11/15/17 13:15
HGWC-101	AAK0534-06	Water	11/14/17 12:32	11/15/17 13:15
HGWC-103	AAK0534-07	Water	11/14/17 12:25	11/15/17 13:15
HGWC-105	AAK0534-08	Water	11/14/17 13:30	11/15/17 13:15
HGWC-107	AAK0534-09	Water	11/14/17 13:35	11/15/17 13:15
HGWC-109	AAK0534-10	Water	11/14/17 14:52	11/15/17 13:15
FB-1	AAK0534-11	Water	11/14/17 14:40	11/15/17 13:15
FERB-1	AAK0534-12	Water	11/14/17 14:45	11/15/17 13:15



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 22, 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

November 22, 2017

Report No.: AAK0534

Project: CCR Event

Client ID: HGWA-111

Lab Number ID: AAK0534-01

Date/Time Sampled: 11/13/2017 3:10:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	158	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	2.5	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 11:56	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 11:56	7110541	RLC
Sulfate	1.3	1.0	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 11:56	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Barium	0.0217	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Boron	0.0103	0.0400	0.0060	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Calcium	17.1	5.00	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 19:30	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:24	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:06	7110549	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 22, 2017

Report No.: AAK0534

Project: CCR Event

Client ID: HGWA-112

Lab Number ID: AAK0534-02

Date/Time Sampled: 11/13/2017 3:15:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	75	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	5.5	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 12:58	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 12:58	7110541	RLC
Sulfate	0.61	1.0	0.02	mg/L	EPA 300.0	J	1	11/18/17 13:24	11/20/17 12:58	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Barium	0.0275	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Boron	0.0089	0.0400	0.0060	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Calcium	6.26	0.500	0.0404	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Chromium	0.0038	0.0100	0.0005	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:47	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:08	7110549	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534
Client ID: HGWA-113
Date/Time Sampled: 11/14/2017 9:10:00AM
Matrix: Water

Project: CCR Event
Lab Number ID: AAK0534-03
Date/Time Received: 11/15/2017 1:15:00PM

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	89	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	2.0	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 13:19	7110541	RLC
Fluoride	0.16	0.30	0.03	mg/L	EPA 300.0	J	1	11/18/17 13:24	11/20/17 13:19	7110541	RLC
Sulfate	11	1.0	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 13:19	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Barium	0.0289	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Boron	0.0120	0.0400	0.0060	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Calcium	7.40	0.500	0.0404	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Chromium	0.0016	0.0100	0.0005	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 19:59	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:10	7110549	MTC



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Georgia Power
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 Atlanta GA, 30339

November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534

Project: CCR Event

Client ID: HGWC-117

Lab Number ID: AAK0534-04

Date/Time Sampled: 11/14/2017 10:30:00AM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	310	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	4.0	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 13:39	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 13:39	7110541	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	11/18/17 13:24	11/21/17 03:50	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Barium	0.0368	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Boron	0.536	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Cadmium	0.0005	0.0010	0.0001	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Calcium	46.9	25.0	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 20:16	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Cobalt	0.0062	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:10	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:17	7110549	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

November 22, 2017

Report No.: AAK0534

Project: CCR Event

Client ID: HGWC-118

Lab Number ID: AAK0534-05

Date/Time Sampled: 11/14/2017 11:30:00AM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	373	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	4.4	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 14:00	7110541	RLC
Fluoride	0.07	0.30	0.03	mg/L	EPA 300.0	J	1	11/18/17 13:24	11/20/17 14:00	7110541	RLC
Sulfate	79	10	0.17	mg/L	EPA 300.0		10	11/18/17 13:24	11/21/17 04:10	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Barium	0.0700	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Boron	0.691	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Calcium	86.7	25.0	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 20:27	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:21	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:20	7110549	MTC



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 Atlanta GA, 30339

November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534

Project: CCR Event

Client ID: HGWC-101

Lab Number ID: AAK0534-06

Date/Time Sampled: 11/14/2017 12:32:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	253	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	5.8	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 14:21	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 14:21	7110541	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	11/18/17 13:24	11/21/17 04:31	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Barium	0.0407	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Boron	0.108	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Calcium	21.7	5.00	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 20:39	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Cobalt	0.0030	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:33	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:22	7110549	MTC



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 Atlanta GA, 30339

November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534

Project: CCR Event

Client ID: HGWC-103

Lab Number ID: AAK0534-07

Date/Time Sampled: 11/14/2017 12:25:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	545	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	6.0	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 15:02	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 15:02	7110541	RLC
Sulfate	310	20	0.34	mg/L	EPA 300.0		20	11/18/17 13:24	11/21/17 04:52	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Barium	0.0385	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Boron	2.32	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Cadmium	0.0007	0.0010	0.0001	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Calcium	79.7	25.0	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 21:01	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Cobalt	0.0020	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Lithium	0.0015	0.0500	0.0015	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 20:56	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:25	7110549	MTC



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November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534

Project: CCR Event

Client ID: HGWC-105

Lab Number ID: AAK0534-08

Date/Time Sampled: 11/14/2017 1:30:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	375	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	4.0	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 16:45	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 16:45	7110541	RLC
Sulfate	170	10	0.17	mg/L	EPA 300.0		10	11/18/17 13:24	11/21/17 05:13	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Barium	0.0643	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Boron	1.29	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Calcium	87.2	25.0	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 21:13	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Lithium	0.0044	0.0500	0.0015	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 21:07	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:27	7110549	MTC



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Georgia Power
 2480 Maner Road
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 22, 2017

Report No.: AAK0534

Project: CCR Event

Client ID: HGWC-107

Lab Number ID: AAK0534-09

Date/Time Sampled: 11/14/2017 1:35:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	313	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	3.4	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:06	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:06	7110541	RLC
Sulfate	130	10	0.17	mg/L	EPA 300.0		10	11/18/17 13:24	11/21/17 05:34	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Barium	0.0390	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Boron	0.780	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Calcium	53.2	25.0	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 21:24	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:19	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:29	7110549	MTC



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 Atlanta GA, 30339

November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534
Client ID: HGWC-109
Date/Time Sampled: 11/14/2017 2:52:00PM
Matrix: Water

Project: CCR Event
Lab Number ID: AAK0534-10
Date/Time Received: 11/15/2017 1:15:00PM

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	252	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	5.6	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:27	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:27	7110541	RLC
Sulfate	40	1.0	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:27	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Arsenic	0.0011	0.0050	0.0005	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Barium	0.0830	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Boron	0.366	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Calcium	37.4	25.0	2.02	mg/L	EPA 6020B		50	11/17/17 10:15	11/21/17 21:36	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Cobalt	0.0014	0.0100	0.0003	mg/L	EPA 6020B	J	1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:30	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:32	7110549	MTC



PACE ANALYTICAL SERVICES, LLC.

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 Atlanta GA, 30339

November 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAK0534

Project: CCR Event

Client ID: FB-1

Lab Number ID: AAK0534-11

Date/Time Sampled: 11/14/2017 2:40:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	ND	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:47	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 17:47	7110541	RLC
Sulfate	0.13	1.0	0.02	mg/L	EPA 300.0	J	1	11/18/17 13:24	11/20/17 17:47	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:41	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:34	7110549	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

November 22, 2017

Report No.: AAK0534

Project: CCR Event

Client ID: FERB-1

Lab Number ID: AAK0534-12

Date/Time Sampled: 11/14/2017 2:45:00PM

Date/Time Received: 11/15/2017 1:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	11/17/17 14:00	11/17/17 14:00	7110506	JPT
Inorganic Anions											
Chloride	ND	0.25	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 18:08	7110541	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 18:08	7110541	RLC
Sulfate	ND	1.0	0.02	mg/L	EPA 300.0		1	11/18/17 13:24	11/20/17 18:08	7110541	RLC
Metals, Total											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	11/17/17 10:15	11/21/17 21:47	7110503	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	11/20/17 12:30	11/21/17 12:37	7110549	MTC



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Report No.: AAK0534

General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110506 - SM 2540 C											
Blank (7110506-BLK1)						Prepared & Analyzed: 11/17/17					
Total Dissolved Solids	ND	25	10	mg/L							
LCS (7110506-BS1)						Prepared & Analyzed: 11/17/17					
Total Dissolved Solids	400	25	10	mg/L	400.00		100	84-108			
Duplicate (7110506-DUP1)						Source: AAK0534-08 Prepared & Analyzed: 11/17/17					
Total Dissolved Solids	392	25	10	mg/L		375			4	10	
Duplicate (7110506-DUP2)						Source: AAK0534-12 Prepared & Analyzed: 11/17/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110541 - EPA 300.0											
Blank (7110541-BLK1)						Prepared: 11/18/17 Analyzed: 11/20/17					
Chloride	ND	0.25	0.02	mg/L							
Fluoride	ND	0.30	0.03	mg/L							
Sulfate	ND	1.0	0.02	mg/L							
LCS (7110541-BS1)						Prepared: 11/18/17 Analyzed: 11/20/17					
Chloride	10.9	0.25	0.02	mg/L	10.000		109	90-110			
Fluoride	10.5	0.30	0.03	mg/L	10.000		105	90-110			
Sulfate	10.2	1.0	0.02	mg/L	10.000		102	90-110			
Matrix Spike (7110541-MS1)						Source: AAK0534-01 Prepared: 11/18/17 Analyzed: 11/20/17					
Chloride	13.1	0.25	0.02	mg/L	10.000	2.54	106	90-110			
Fluoride	10.6	0.30	0.03	mg/L	10.000	ND	106	90-110			
Sulfate	11.5	1.0	0.02	mg/L	10.000	1.25	102	90-110			
Matrix Spike (7110541-MS2)						Source: AAK0534-06 Prepared: 11/18/17 Analyzed: 11/20/17					
Chloride	16.6	0.25	0.02	mg/L	10.000	5.82	108	90-110			
Fluoride	11.5	0.30	0.03	mg/L	10.000	ND	115	90-110			QM-05
Sulfate	101	1.0	0.02	mg/L	10.000	103	NR	90-110			QM-02
Matrix Spike Dup (7110541-MSD1)						Source: AAK0534-01 Prepared: 11/18/17 Analyzed: 11/20/17					
Chloride	13.3	0.25	0.02	mg/L	10.000	2.54	107	90-110	1	15	
Fluoride	10.7	0.30	0.03	mg/L	10.000	ND	107	90-110	1	15	
Sulfate	11.6	1.0	0.02	mg/L	10.000	1.25	103	90-110	1	15	



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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 7110503 - EPA 3005A

Blank (7110503-BLK1)

Prepared: 11/17/17 Analyzed: 11/21/17

Antimony	ND	0.0030	0.0006	mg/L							
Arsenic	ND	0.0050	0.0005	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00009	mg/L							
Boron	ND	0.0400	0.0060	mg/L							
Cadmium	ND	0.0010	0.0001	mg/L							
Calcium	ND	0.500	0.0404	mg/L							
Chromium	ND	0.0100	0.0005	mg/L							
Cobalt	ND	0.0100	0.0003	mg/L							
Copper	ND	0.0250	0.0003	mg/L							
Lead	ND	0.0050	0.00007	mg/L							
Molybdenum	ND	0.0100	0.0010	mg/L							
Nickel	ND	0.0100	0.0005	mg/L							
Selenium	ND	0.0100	0.0018	mg/L							
Silver	ND	0.0100	0.0002	mg/L							
Thallium	ND	0.0010	0.00005	mg/L							
Vanadium	ND	0.0100	0.0012	mg/L							
Zinc	ND	0.0100	0.0012	mg/L							
Lithium	ND	0.0500	0.0015	mg/L							

LCS (7110503-BS1)

Prepared: 11/17/17 Analyzed: 11/21/17

Antimony	0.104	0.0030	0.0006	mg/L	0.10000		104	80-120			
Arsenic	0.0989	0.0050	0.0005	mg/L	0.10000		99	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000		104	80-120			
Cadmium	0.103	0.0010	0.0001	mg/L	0.10000		103	80-120			
Chromium	0.0990	0.0100	0.0005	mg/L	0.10000		99	80-120			
Cobalt	0.0949	0.0100	0.0003	mg/L	0.10000		95	80-120			
Copper	0.0965	0.0250	0.0003	mg/L	0.10000		96	80-120			
Lead	0.100	0.0050	0.00007	mg/L	0.10000		100	80-120			
Nickel	0.0959	0.0100	0.0005	mg/L	0.10000		96	80-120			
Selenium	0.0994	0.0100	0.0018	mg/L	0.10000		99	80-120			
Silver	0.0943	0.0100	0.0002	mg/L	0.10000		94	80-120			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000		103	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	0.101	0.0500	0.0015	mg/L	0.10000		101	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
Batch 7110503 - EPA 3005A											
Matrix Spike (7110503-MS1)			Source: AAK0534-01				Prepared: 11/17/17 Analyzed: 11/21/17				
Antimony	0.107	0.0030	0.0006	mg/L	0.10000	ND	107	75-125			
Arsenic	0.0995	0.0050	0.0005	mg/L	0.10000	ND	99	75-125			
Barium	0.124	0.0100	0.0004	mg/L	0.10000	0.0217	102	75-125			
Beryllium	0.105	0.0030	0.00009	mg/L	0.10000	ND	105	75-125			
Cadmium	0.103	0.0010	0.0001	mg/L	0.10000	ND	103	75-125			
Chromium	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Cobalt	0.0976	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	0.106	0.0050	0.00007	mg/L	0.10000	ND	106	75-125			
Nickel	0.0976	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Selenium	0.101	0.0100	0.0018	mg/L	0.10000	ND	101	75-125			
Silver	0.0950	0.0100	0.0002	mg/L	0.10000	ND	95	75-125			
Thallium	0.108	0.0010	0.00005	mg/L	0.10000	ND	108	75-125			
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125			
Zinc	0.103	0.0100	0.0012	mg/L	0.10000	ND	103	75-125			
Lithium	0.101	0.0500	0.0015	mg/L	0.10000	ND	101	75-125			
Matrix Spike Dup (7110503-MSD1)			Source: AAK0534-01				Prepared: 11/17/17 Analyzed: 11/21/17				
Antimony	0.107	0.0030	0.0006	mg/L	0.10000	ND	107	75-125	0.4	20	
Arsenic	0.0989	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	0.6	20	
Barium	0.124	0.0100	0.0004	mg/L	0.10000	0.0217	102	75-125	0.1	20	
Beryllium	0.103	0.0030	0.00009	mg/L	0.10000	ND	103	75-125	2	20	
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000	ND	104	75-125	0.7	20	
Chromium	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	0.4	20	
Cobalt	0.0944	0.0100	0.0003	mg/L	0.10000	ND	94	75-125	3	20	
Copper	0.0977	0.0250	0.0003	mg/L	0.10000	ND	98	75-125	1	20	
Lead	0.104	0.0050	0.00007	mg/L	0.10000	ND	104	75-125	1	20	
Nickel	0.0954	0.0100	0.0005	mg/L	0.10000	ND	95	75-125	2	20	
Selenium	0.0976	0.0100	0.0018	mg/L	0.10000	ND	98	75-125	4	20	
Silver	0.0929	0.0100	0.0002	mg/L	0.10000	ND	93	75-125	2	20	
Thallium	0.105	0.0010	0.00005	mg/L	0.10000	ND	105	75-125	2	20	
Vanadium	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125	3	20	
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125	2	20	
Lithium	0.0999	0.0500	0.0015	mg/L	0.10000	ND	100	75-125	1	20	



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Report No.: AAK0534

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110503 - EPA 3005A											
Post Spike (7110503-PS1)			Source: AAK0534-01			Prepared: 11/17/17 Analyzed: 11/21/17					
Antimony	105			ug/L	100.00	0.0312	105	80-120			
Arsenic	99.7			ug/L	100.00	-0.252	100	80-120			
Barium	123			ug/L	100.00	21.7	101	80-120			
Beryllium	98.9			ug/L	100.00	0.0069	99	80-120			
Cadmium	101			ug/L	100.00	-0.0009	101	80-120			
Chromium	97.9			ug/L	100.00	0.122	98	80-120			
Cobalt	95.9			ug/L	100.00	0.0083	96	80-120			
Copper	97.3			ug/L	100.00	0.128	97	80-120			
Lead	101			ug/L	100.00	-0.0003	101	80-120			
Nickel	96.2			ug/L	100.00	0.248	96	80-120			
Selenium	99.3			ug/L	100.00	-0.153	99	80-120			
Silver	95.0			ug/L	100.00	-0.0001	95	80-120			
Thallium	103			ug/L	100.00	0.0070	103	80-120			
Vanadium	100			ug/L	100.00	-0.161	100	80-120			
Zinc	102			ug/L	100.00	0.283	102	80-120			
Lithium	101			ug/L	100.00	0.850	100	80-120			

Batch 7110549 - EPA 7470A

Blank (7110549-BLK1)					Prepared: 11/20/17 Analyzed: 11/21/17						
Mercury	ND	0.00050	0.000036	mg/L							
LCS (7110549-BS1)					Prepared: 11/20/17 Analyzed: 11/21/17						
Mercury	0.00240	0.00050	0.000036	mg/L	2.5000E-3		96	80-120			
Matrix Spike (7110549-MS1)					Prepared: 11/20/17 Analyzed: 11/21/17						
Mercury	0.00236	0.00050	0.000036	mg/L	2.5000E-3	ND	94	75-125			



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Report No.: AAK0534

Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110549 - EPA 7470A											
Matrix Spike Dup (7110549-MSD1)			Source: AAK0534-02			Prepared: 11/20/17 Analyzed: 11/21/17					
Mercury	0.00238	0.00050	0.000036	mg/L	2.5000E-3	ND	95	75-125	1	20	
Post Spike (7110549-PS1)			Source: AAK0534-02			Prepared: 11/20/17 Analyzed: 11/21/17					
Mercury	1.66			ug/L	1.6667	-0.0350	99	80-120			



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November 22, 2017

Legend

Definition of Laboratory Terms

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

Sample Information

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

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

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

Definition of Qualifiers

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

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



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

CHAIN OF CUSTODY RECORD

CLIENT NAME: Georgia Power
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 42 Inverness Center Parkway, Birmingham, AL 35242
REPORT TO: Lauren Petty
REQUESTED COMPLETION DATE: laburch@southernco.com
PROJECT NAME/STATE: Plant Hammond - AP 3&4
PROJECT #: Phase II - CCR

Collection DATE	Collection TIME	MATRIX CODE*	C O M P	SAMPLE IDENTIFICATION	ANALYSIS REQUESTED	CONTAINER TYPE	CONTAINER TYPE	PRESERVATION	LAB #
11/13/17	15:10	W	X	HGWA-111	Metals Part 257 App. III & IV (EPA 6020/7470) Cr, Fe, SO ₄ & TDS (EPA 300.0 & SM 2540C) Radon (226 & 228) (SW-846 9315/9320)	P - PLASTIC	P - PLASTIC	1 - HCl, 56°C	1
11/13/17	15:15	W	X	HGWA-112		A - AMBER GLASS	A - AMBER GLASS	2 - H ₂ SO ₄ , 56°C	2
11/14/17	9:10	W	X	HGWA-113		G - CLEAR GLASS	G - CLEAR GLASS	3 - HNO ₃	3
11/14/17	10:30	W	X	HGWC-117		V - VOA VIAL	V - VOA VIAL	4 - NaOH, 56°C	4
11/14/17	11:30	W	X	HGWC-118		S - STERILE	S - STERILE	5 - NaOH/2NAC, 58°C	5
11/14/17	12:32	W	X	HGWC-101		O - OTHER	O - OTHER	6 - Na ₂ S ₂ O ₈ , 58°C	6
11/14/17	12:28	W	X	HGWC-103				7 - 56°C not frozen	7
11/14/17	13:30	W	X	HGWC-105					8
11/14/17	13:35	W	X	HGWC-107					9
11/14/17	14:52	W	X	HGWC-109					10
11/14/17	14:40	W	X	FB-1					11
11/14/17	14:45	W	X	FERB-1					12

RELINQUISHED BY: Will Vign (EIM) **DATE/TIME:** 11/14/17 1400
RELINQUISHED BY: [Signature] **DATE/TIME:** [Signature]

RECEIVED BY LAB: [Signature] **DATE/TIME:** 11/17/17 1315
RECEIVED BY: T. Payne 388 **DATE/TIME:** 11/14/2017 15:30

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

PRESERVATION
 1 - HCl, 56°C
 2 - H₂SO₄, 56°C
 3 - HNO₃
 4 - NaOH, 56°C
 5 - NaOH/2NAC, 58°C
 6 - Na₂S₂O₈, 58°C
 7 - 56°C not frozen

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

REMARKS/ADDITIONAL INFORMATION
 Extra radium volume collected for Lab QA/QC

FOR LAB USE ONLY
 LAB #: AAK05034
 Entered into LIMS: [Signature]
 Tracking #: [Signature]

SAMPLE SHIPPED VIA: UPS
CARRIER: UPS
CLIENT: Pace
OTHER: FS

DATE/TIME: 11/14/17 1400
DATE/TIME: [Signature]

RECEIVED BY LAB: [Signature] **DATE/TIME:** 11/17/17 1315
RECEIVED BY: T. Payne 388 **DATE/TIME:** 11/14/2017 15:30



Sample Condition Upon Receipt

Client Name: GIA power Project # AAK0534

Courier: Fed/Ex UPS USPS Client Commercial Pace Other _____
Tracking #: _____

Optional:
Print ID (Date)
Print Name

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 0.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 11/15/17 MR

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>GIA</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: 11/16/2017 10:30:25AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 11/15/17 13:15

Work Order: AAK0534

Logged In By: Mohammad M. Rahman

OBSERVATIONS

#Samples: 12

#Containers: 50

Minimum Temp(C): 0.5

Maximum Temp(C): 0.5

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:

December 12, 2017

Maria Padilla
GA Power
2480 Maner Rd
Atlanta, GA 30339

RE: Project: AAK0534 Plant Hammond
Pace Project No.: 30236279

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on November 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: AAK0534 Plant Hammond

Pace Project No.: 30236279

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: AAK0534 Plant Hammond

Pace Project No.: 30236279

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30236279001	HGWA-111	Water	11/13/17 15:10	11/16/17 10:00
30236279002	HGWA-112	Water	11/13/17 15:15	11/16/17 10:00
30236279003	HGWA-113	Water	11/14/17 09:10	11/16/17 10:00
30236279004	HGWC-117	Water	11/14/17 10:30	11/16/17 10:00
30236279005	HGWC-118	Water	11/14/17 11:30	11/16/17 10:00
30236279006	HGWC-101	Water	11/14/17 12:32	11/16/17 10:00
30236279007	HGWA-103	Water	11/14/17 12:25	11/16/17 10:00
30236279008	HGWC-105	Water	11/14/17 13:30	11/16/17 10:00
30236279009	HGWC-107	Water	11/14/17 13:35	11/16/17 10:00
30236279010	HGWC-109	Water	11/14/17 14:52	11/16/17 10:00
30236279011	FB-1	Water	11/14/17 14:40	11/16/17 10:00
30236279012	FERB-1	Water	11/14/17 14:45	11/16/17 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AAK0534 Plant Hammond
Pace Project No.: 30236279

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30236279001	HGWA-111	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279002	HGWA-112	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279003	HGWA-113	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279004	HGWC-117	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279005	HGWC-118	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279006	HGWC-101	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279007	HGWA-103	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279008	HGWC-105	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279009	HGWC-107	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279010	HGWC-109	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279011	FB-1	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30236279012	FERB-1	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAK0534 Plant Hammond

Pace Project No.: 30236279

Sample: HGWA-111		Lab ID: 30236279001	Collected: 11/13/17 15:10	Received: 11/16/17 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	0.374 ± 0.210 (0.317)		pCi/L	11/27/17 13:04	13982-63-3	
		C:88% T:NA					
Radium-228	EPA 9320	0.404 ± 0.413 (0.856)		pCi/L	11/29/17 14:49	15262-20-1	
		C:75% T:73%					
Total Radium	Total Radium Calculation	0.778 ± 0.623 (1.17)		pCi/L	12/12/17 12:05	7440-14-4	

Sample: HGWA-112		Lab ID: 30236279002	Collected: 11/13/17 15:15	Received: 11/16/17 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	0.645 ± 0.248 (0.263)		pCi/L	11/27/17 13:04	13982-63-3	
		C:90% T:NA					
Radium-228	EPA 9320	0.141 ± 0.403 (0.906)		pCi/L	11/29/17 14:49	15262-20-1	
		C:70% T:76%					
Total Radium	Total Radium Calculation	0.786 ± 0.651 (1.17)		pCi/L	12/12/17 12:05	7440-14-4	

Sample: HGWA-113		Lab ID: 30236279003	Collected: 11/14/17 09:10	Received: 11/16/17 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	0.0370 ± 0.159 (0.379)		pCi/L	11/27/17 13:04	13982-63-3	
		C:85% T:NA					
Radium-228	EPA 9320	0.0392 ± 0.398 (0.916)		pCi/L	11/29/17 14:49	15262-20-1	
		C:73% T:76%					
Total Radium	Total Radium Calculation	0.0762 ± 0.557 (1.30)		pCi/L	12/12/17 12:05	7440-14-4	

Sample: HGWC-117		Lab ID: 30236279004	Collected: 11/14/17 10:30	Received: 11/16/17 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	0.796 ± 0.289 (0.305)		pCi/L	11/27/17 13:04	13982-63-3	
		C:89% T:NA					
Radium-228	EPA 9320	0.194 ± 0.405 (0.893)		pCi/L	11/29/17 14:49	15262-20-1	
		C:78% T:85%					
Total Radium	Total Radium Calculation	0.990 ± 0.694 (1.20)		pCi/L	12/12/17 12:05	7440-14-4	

Sample: HGWC-118		Lab ID: 30236279005	Collected: 11/14/17 11:30	Received: 11/16/17 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	0.154 ± 0.163 (0.319)		pCi/L	11/27/17 13:04	13982-63-3	
		C:83% T:NA					
Radium-228	EPA 9320	0.181 ± 0.335 (0.736)		pCi/L	11/29/17 14:49	15262-20-1	
		C:75% T:85%					

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAK0534 Plant Hammond
Pace Project No.: 30236279

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-118 Lab ID: 30236279005 Collected: 11/14/17 11:30 Received: 11/16/17 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	0.335 ± 0.498 (1.06)	pCi/L	12/12/17 12:05	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-101 Lab ID: 30236279006 Collected: 11/14/17 12:32 Received: 11/16/17 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	0.450 ± 0.260 (0.435) C:85% T:NA	pCi/L	11/27/17 13:04	13982-63-3	
Radium-228	EPA 9320	0.319 ± 0.371 (0.781) C:72% T:83%	pCi/L	11/29/17 14:49	15262-20-1	
Total Radium	Total Radium Calculation	0.769 ± 0.631 (1.22)	pCi/L	12/12/17 12:05	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-103 Lab ID: 30236279007 Collected: 11/14/17 12:25 Received: 11/16/17 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	0.485 ± 0.248 (0.372) C:87% T:NA	pCi/L	11/27/17 13:04	13982-63-3	
Radium-228	EPA 9320	0.0818 ± 0.371 (0.846) C:73% T:75%	pCi/L	11/29/17 14:49	15262-20-1	
Total Radium	Total Radium Calculation	0.567 ± 0.619 (1.22)	pCi/L	12/12/17 12:05	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-105 Lab ID: 30236279008 Collected: 11/14/17 13:30 Received: 11/16/17 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	0.588 ± 0.249 (0.294) C:86% T:NA	pCi/L	11/27/17 13:04	13982-63-3	
Radium-228	EPA 9320	0.229 ± 0.359 (0.777) C:74% T:81%	pCi/L	11/29/17 14:49	15262-20-1	
Total Radium	Total Radium Calculation	0.817 ± 0.608 (1.07)	pCi/L	12/12/17 12:05	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-107 Lab ID: 30236279009 Collected: 11/14/17 13:35 Received: 11/16/17 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	0.365 ± 0.214 (0.331) C:88% T:NA	pCi/L	11/27/17 13:04	13982-63-3	
Radium-228	EPA 9320	0.646 ± 0.445 (0.851) C:72% T:74%	pCi/L	11/29/17 14:49	15262-20-1	
Total Radium	Total Radium Calculation	1.01 ± 0.659 (1.18)	pCi/L	12/12/17 12:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAK0534 Plant Hammond

Pace Project No.: 30236279

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.494 ± 0.219 (0.268) C:92% T:NA	pCi/L	11/27/17 13:05	13982-63-3	
Radium-228		EPA 9320	0.159 ± 0.338 (0.748) C:70% T:81%	pCi/L	11/29/17 14:49	15262-20-1	
Total Radium		Total Radium Calculation	0.653 ± 0.557 (1.02)	pCi/L	12/12/17 12:05	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.272 ± 0.179 (0.289) C:92% T:NA	pCi/L	11/27/17 13:05	13982-63-3	
Radium-228		EPA 9320	0.110 ± 0.363 (0.822) C:70% T:75%	pCi/L	11/29/17 14:50	15262-20-1	
Total Radium		Total Radium Calculation	0.382 ± 0.542 (1.11)	pCi/L	12/12/17 12:05	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.218 ± 0.163 (0.279) C:88% T:NA	pCi/L	11/27/17 18:41	13982-63-3	
Radium-228		EPA 9320	-0.0620 ± 0.439 (1.03) C:67% T:71%	pCi/L	11/29/17 14:50	15262-20-1	
Total Radium		Total Radium Calculation	0.218 ± 0.602 (1.31)	pCi/L	12/12/17 12:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAK0534 Plant Hammond

Pace Project No.: 30236279

QC Batch:	279888	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30236279001, 30236279002, 30236279003, 30236279004, 30236279005, 30236279006, 30236279007, 30236279008, 30236279009, 30236279010, 30236279011, 30236279012		

METHOD BLANK:	1374797	Matrix:	Water
Associated Lab Samples:	30236279001, 30236279002, 30236279003, 30236279004, 30236279005, 30236279006, 30236279007, 30236279008, 30236279009, 30236279010, 30236279011, 30236279012		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.566 ± 0.420 (0.822) C:79% T:72%	pCi/L	11/29/17 14:48	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AAK0534 Plant Hammond

Pace Project No.: 30236279

QC Batch:	279887	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30236279001, 30236279002, 30236279003, 30236279004, 30236279005, 30236279006, 30236279007, 30236279008, 30236279009, 30236279010, 30236279011, 30236279012		

METHOD BLANK:	1374796	Matrix:	Water
Associated Lab Samples:	30236279001, 30236279002, 30236279003, 30236279004, 30236279005, 30236279006, 30236279007, 30236279008, 30236279009, 30236279010, 30236279011, 30236279012		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.412 ± 0.212 (0.298) C:89% T:NA	pCi/L	11/27/17 13:04	

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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QUALIFIERS

Project: AAK0534 Plant Hammond

Pace Project No.: 30236279

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: AAK0534 Workorder Name: Plant Hammond Owner Received Date: 11/15/2017 Results Requested By: 12/12/2017

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

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			Date/Time	Comments
						NO	HO	LAB USE ONLY		
1	HGWA-111	G	11/13/2017 15:10	AAK0534-01	GW	2			X	
2	HGWA-112	G	11/13/2017 15:15	AAK0534-02	GW	2			X	
3	HGWA-113	G	11/14/2017 9:10	AAK0534-03	GW	2			X	
4	HGWC-117	G	11/14/2017 10:30	AAK0534-04	GW	2	AR		X	
5	HGWC-118	G	11/14/2017 11:30	AAK0534-05	GW	2	11/15/2017		X	
6	HGWC-101	G	11/14/2017 12:32	AAK0534-06	GW	2			X	
7	HGWC-103	G	11/14/2017 12:25	AAK0534-07	GW	2			X	
8	HGWC-105	G	11/14/2017 13:30	AAK0534-08	GW	4			X	
9	HGWC-107	G	11/14/2017 13:35	AAK0534-09	GW	2			X	
10	HGWC-109	G	11/14/2017 14:52	AAK0534-10	GW	2			X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	11/15/17	[Signature]	11/16/17	EQUIS deliverable required (Profile 7564)
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

FMT-ALL-C-00

NO#: 30236279

30236279

Page 1 of 2

Chain of Custody



Workorder: AAK0534 Workorder Name: Plant Hammond Owner Received Date: 11/15/2017 Results Requested By: 12/12/2017

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

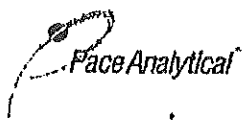
Subcontract To: Pace - Pittsburgh
 1638 Roseytown Road
 Stes. 2,3,4
 Greensburg, PA 15601
 Phone (724) 850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
						CON	HNH		
11	FB-1	G	11/14/2017 14:40	AAK0534-11	W	2			
12	FERB-1	G	11/14/2017 14:45	AAK0534-12	W	2			
13									
14									
15									
16									
17									
18									
19									
20									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. KATHMAN	11/15/17	[Signature]	11/16/17	EQUIS deliverable required (Profile 7564)
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.



Sample Condition Upon Receipt

Client Name: GIA Power

Project # AAK0534

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 0.5 Biological Tissue is Frozen: Yes No Temp should be above freezing to 6°C

Optional: Print Date Print Name

Date and initials of person examining contents: 11/15/17 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>GIA</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)

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace GA

Project # 30236279

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 741366597136

Label	<u>ML</u>
LIMS Login	<u>ZH</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: ZH 11/16/17

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.
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input checked="" 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 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 checked="" type="checkbox"/>	<input 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.
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.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>P42</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"/>	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>ZH</u> Date: <u>11/16/17</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-226
 Analyst: JC2
 Date: 11/27/2017
 Worklist: 38828
 Matrix: DW

Method Blank Assessment	
MB Sample ID	1374796
MB concentration:	0.412
MB Counting Uncertainty:	0.203
MB MDC:	0.298
MB Numerical Performance Indicator:	3.97
MB Status vs Numerical Indicator:	N/A
MB Status vs MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCS38828	11/27/2017
Count Date:	11/27/2017
Spike ID:	17-030
Spike Concentration (pCi/mL):	80.186
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.512
Target Conc. (pCi/L, g, F):	15.784
Uncertainty (Calculated):	1.443
Result (pCi/L, g, F):	13.083
LCSD Counting Uncertainty (pCi/L, g, F):	0.888
Numerical Performance Indicator:	-2.99
Percent Recovery:	83.51%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

Duplicate Sample Assessment	
Sample ID:	LCS38828
Duplicate Sample ID:	LCS38828
Sample Result (pCi/L, g, F):	13.083
Sample Duplicate Result (pCi/L, g, F):	0.888
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	12.786
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.944
Are sample and/or duplicate results below MDC?	NO
Duplicate Numerical Performance Indicator:	0.449
Duplicate RPD:	2.30%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

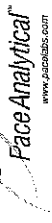
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

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

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD 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 Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample 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:	
Sample Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample 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:	

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: VAL
Date: 11/27/2017
Worklist: 38829
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1374797
MB concentration:	0.566
MB Counting Uncertainty:	0.407
MB MDC:	0.822
MB Numerical Performance Indicator:	2.73
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		Y
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		LCS/38829
Count Date:	11/29/2017	11/29/2017
Spike I.D.:	17-033	17-033
Spike Concentration (pCi/mL):	22.923	22.923
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.811	0.802
Target Conc. (pCi/L, g, F):	5.656	5.714
Uncertainty (Calculated):	0.407	0.411
Result (pCi/L, g, F):	5.835	6.318
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.737	0.698
Numerical Performance Indicator:	0.42	1.46
Percent Recovery:	103.18%	110.57%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Duplicate Sample Assessment	
Sample I.D.:	LCS38829
Duplicate Sample I.D.:	LCS/38829
Sample Result (pCi/L, g, F):	5.835
Sample Duplicate Result (pCi/L, g, F):	0.737
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	6.318
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.698
Are sample and/or duplicate results below MDC?	NO
Duplicate Numerical Performance Indicator:	-0.931
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.92%
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:

Handwritten signature

July 06, 2018

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

RE: Project: Plant Hammond AP
Pace Project No.: 265790

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 265790

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Texas Certification #: T104704397-08-TX
Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 265790

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265790001	HGWA-111	Water	06/04/18 16:00	06/06/18 10:45
265790002	HGWA-112	Water	06/04/18 17:35	06/06/18 10:45
265790003	FB-01	Water	06/04/18 18:35	06/06/18 10:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265790

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265790001	HGWA-111	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265790002	HGWA-112	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265790003	FB-01	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265790

Sample: HGWA-111		Lab ID: 265790001		Collected: 06/04/18 16:00		Received: 06/06/18 10:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/07/18 17:00	06/11/18 16:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/07/18 17:00	06/11/18 16:56	7440-38-2	
Barium	0.025	mg/L	0.010	0.00078	1	06/07/18 17:00	06/11/18 16:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/07/18 17:00	06/11/18 16:56	7440-41-7	
Boron	0.0065J	mg/L	0.040	0.0039	1	06/07/18 17:00	06/11/18 16:56	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/07/18 17:00	06/11/18 16:56	7440-43-9	
Calcium	30.1	mg/L	5.0	0.14	10	06/07/18 17:00	06/11/18 17:02	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	06/07/18 17:00	06/11/18 16:56	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/07/18 17:00	06/11/18 16:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/07/18 17:00	06/11/18 16:56	7439-92-1	
Lithium	0.0016J	mg/L	0.050	0.00097	1	06/07/18 17:00	06/11/18 16:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/07/18 17:00	06/11/18 16:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/07/18 17:00	06/11/18 16:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/07/18 17:00	06/11/18 16:56	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/11/18 11:00	06/12/18 15:26	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	131	mg/L	25.0	10.0	1		06/08/18 16:25		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.6	mg/L	0.25	0.024	1		06/12/18 14:06	16887-00-6	
Fluoride	0.032J	mg/L	0.30	0.029	1		06/12/18 14:06	16984-48-8	
Sulfate	1.4	mg/L	1.0	0.017	1		06/12/18 14:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265790

Sample: HGWA-112		Lab ID: 265790002		Collected: 06/04/18 17:35		Received: 06/06/18 10:45		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/07/18 17:00	06/11/18 18:01	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/07/18 17:00	06/11/18 18:01	7440-38-2		
Barium	0.027	mg/L	0.010	0.00078	1	06/07/18 17:00	06/11/18 18:01	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/07/18 17:00	06/11/18 18:01	7440-41-7		
Boron	0.0070J	mg/L	0.040	0.0039	1	06/07/18 17:00	06/11/18 18:01	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/07/18 17:00	06/11/18 18:01	7440-43-9		
Calcium	7.4	mg/L	0.50	0.014	1	06/07/18 17:00	06/11/18 18:01	7440-70-2		
Chromium	0.0037J	mg/L	0.010	0.0016	1	06/07/18 17:00	06/11/18 18:01	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/07/18 17:00	06/11/18 18:01	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/07/18 17:00	06/11/18 18:01	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	06/07/18 17:00	06/11/18 18:01	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/07/18 17:00	06/11/18 18:01	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/07/18 17:00	06/11/18 18:01	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/07/18 17:00	06/11/18 18:01	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/11/18 11:00	06/12/18 15:28	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	70.0	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	5.3	mg/L	0.25	0.024	1		06/12/18 15:10	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		06/12/18 15:10	16984-48-8		
Sulfate	0.73J	mg/L	1.0	0.017	1		06/12/18 15:10	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265790

Sample: FB-01		Lab ID: 265790003		Collected: 06/04/18 18:35		Received: 06/06/18 10:45		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/07/18 17:00	06/11/18 18:13	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/07/18 17:00	06/11/18 18:13	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	06/07/18 17:00	06/11/18 18:13	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/07/18 17:00	06/11/18 18:13	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	06/07/18 17:00	06/11/18 18:13	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/07/18 17:00	06/11/18 18:13	7440-43-9		
Calcium	0.032J	mg/L	0.50	0.014	1	06/07/18 17:00	06/11/18 18:13	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/07/18 17:00	06/11/18 18:13	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/07/18 17:00	06/11/18 18:13	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/07/18 17:00	06/11/18 18:13	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	06/07/18 17:00	06/11/18 18:13	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/07/18 17:00	06/11/18 18:13	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/07/18 17:00	06/11/18 18:13	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/07/18 17:00	06/11/18 18:13	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/11/18 11:00	06/12/18 15:30	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	13.0J	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.26	mg/L	0.25	0.024	1		06/12/18 15:31	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		06/12/18 15:31	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		06/12/18 15:31	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265790

QC Batch: 7697

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 265790001, 265790002, 265790003

METHOD BLANK: 35960

Matrix: Water

Associated Lab Samples: 265790001, 265790002, 265790003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/12/18 14:24	

LABORATORY CONTROL SAMPLE: 35961

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 35962

35963

Parameter	Units	265856001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0026	98	102	75-125	4	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265790

QC Batch: 7550 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265790001, 265790002, 265790003

METHOD BLANK: 35336 Matrix: Water
Associated Lab Samples: 265790001, 265790002, 265790003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/11/18 15:17	
Arsenic	mg/L	ND	0.0050	0.00057	06/11/18 15:17	
Barium	mg/L	ND	0.010	0.00078	06/11/18 15:17	
Beryllium	mg/L	ND	0.0030	0.000050	06/11/18 15:17	
Boron	mg/L	ND	0.040	0.0039	06/11/18 15:17	
Cadmium	mg/L	ND	0.0010	0.000093	06/11/18 15:17	
Calcium	mg/L	ND	0.50	0.014	06/11/18 15:17	
Chromium	mg/L	ND	0.010	0.0016	06/11/18 15:17	
Cobalt	mg/L	ND	0.010	0.00052	06/11/18 15:17	
Lead	mg/L	ND	0.0050	0.00027	06/11/18 15:17	
Lithium	mg/L	ND	0.050	0.00097	06/11/18 15:17	
Molybdenum	mg/L	ND	0.010	0.0019	06/11/18 15:17	
Selenium	mg/L	ND	0.010	0.0014	06/11/18 15:17	
Thallium	mg/L	ND	0.0010	0.00014	06/11/18 15:17	

LABORATORY CONTROL SAMPLE: 35337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.099	99	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Beryllium	mg/L	.1	0.11	109	80-120	
Boron	mg/L	1	1.1	115	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.11	109	80-120	
Cobalt	mg/L	.1	0.11	107	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Molybdenum	mg/L	.1	0.11	105	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 35358 35359

Parameter	Units	265790001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265790

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 35358		35359		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		265790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	2	20		
Barium	mg/L	0.025	.1	.1	0.12	0.12	99	94	75-125	4	20		
Beryllium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	0	20		
Boron	mg/L	0.0065J	1	1	1.0	1.0	103	104	75-125	1	20		
Cadmium	mg/L	ND	.1	.1	0.10	0.10	100	100	75-125	0	20		
Calcium	mg/L	30.1	1	1	30.8	29.9	71	-19	75-125	3	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.099	101	99	75-125	2	20		
Cobalt	mg/L	ND	.1	.1	0.097	0.096	97	96	75-125	1	20		
Lead	mg/L	ND	.1	.1	0.097	0.096	97	96	75-125	1	20		
Lithium	mg/L	0.0016J	.1	.1	0.10	0.10	102	101	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20		
Thallium	mg/L	ND	.1	.1	0.099	0.096	99	96	75-125	3	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265790

QC Batch: 7772 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265790001, 265790002, 265790003

METHOD BLANK: 36164 Matrix: Water
Associated Lab Samples: 265790001, 265790002, 265790003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/12/18 13:24	
Fluoride	mg/L	ND	0.30	0.029	06/12/18 13:24	
Sulfate	mg/L	ND	1.0	0.017	06/12/18 13:24	

LABORATORY CONTROL SAMPLE: 36165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36166 36167

Parameter	Units	265790001		265790002		36166		36167		% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.6	10	10	12.7	12.8	101	101	90-110	0	15	
Fluoride	mg/L	0.032J	10	10	10.1	10.1	100	100	90-110	0	15	
Sulfate	mg/L	1.4	10	10	11.3	11.5	99	101	90-110	2	15	

MATRIX SPIKE SAMPLE: 36168

Parameter	Units	265790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.3	10	15.5	103	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.73J	10	11.0	102	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265790

Sample: HGWA-111 **Lab ID: 265790001** Collected: 06/04/18 16:00 Received: 06/06/18 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	0.337 ± 0.237 (0.387) C:93% T:NA	pCi/L	06/14/18 09:56	13982-63-3	
Radium-228	EPA 9320	0.300 ± 0.489 (1.06) C:75% T:75%	pCi/L	07/03/18 17:17	15262-20-1	
Total Radium	Total Radium Calculation	0.637 ± 0.726 (1.45)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265790

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.233 ± 0.214 (0.392) C:87% T:NA	pCi/L	06/14/18 08:33	13982-63-3	
Radium-228	EPA 9320	-0.326 ± 0.429 (1.07) C:76% T:75%	pCi/L	07/03/18 17:17	15262-20-1	
Total Radium	Total Radium Calculation	0.233 ± 0.643 (1.46)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265790

Sample: FB-01 **Lab ID: 265790003** Collected: 06/04/18 18:35 Received: 06/06/18 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	-0.0330 ± 0.127 (0.392) C:91% T:NA	pCi/L	06/14/18 08:33	13982-63-3	
Radium-228	EPA 9320	-0.162 ± 0.542 (1.30) C:70% T:65%	pCi/L	07/03/18 17:17	15262-20-1	
Total Radium	Total Radium Calculation	0.000 ± 0.669 (1.69)	pCi/L	07/05/18 14:46	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265790

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265790001, 265790002, 265790003

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265790001, 265790002, 265790003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265790

QC Batch:	301690	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	265790001, 265790002, 265790003		

METHOD BLANK:	1476536	Matrix:	Water
Associated Lab Samples:	265790001, 265790002, 265790003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.215 (0.375) C:88% T:NA	pCi/L	06/14/18 08:33	

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 265790

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA
PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 265790

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265790001	HGWA-111	EPA 3005A	7550	EPA 6020B	7736
265790002	HGWA-112	EPA 3005A	7550	EPA 6020B	7736
265790003	FB-01	EPA 3005A	7550	EPA 6020B	7736
265790001	HGWA-111	EPA 7470A	7697	EPA 7470A	7747
265790002	HGWA-112	EPA 7470A	7697	EPA 7470A	7747
265790003	FB-01	EPA 7470A	7697	EPA 7470A	7747
265790001	HGWA-111	EPA 9315	301690		
265790002	HGWA-112	EPA 9315	301690		
265790003	FB-01	EPA 9315	301690		
265790001	HGWA-111	EPA 9320	301898		
265790002	HGWA-112	EPA 9320	301898		
265790003	FB-01	EPA 9320	301898		
265790001	HGWA-111	Total Radium Calculation	304777		
265790002	HGWA-112	Total Radium Calculation	304777		
265790003	FB-01	Total Radium Calculation	304777		
265790001	HGWA-111	SM 2540C	7599		
265790002	HGWA-112	SM 2540C	7599		
265790003	FB-01	SM 2540C	7599		
265790001	HGWA-111	EPA 300.0	7772		
265790002	HGWA-112	EPA 300.0	7772		
265790003	FB-01	EPA 300.0	7772		

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Sample Condition Upon Receipt

WO#: 265790

Client Name: GA Power

PM: BM

Due Date: 07/05/18

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Proj. Due Date:
Proj. Name:

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used JHR082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.6 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/6/18 COJ

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>GU</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input 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 type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

July 06, 2018

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

RE: Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265794

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265794

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Texas Certification #: T104704397-08-TX
Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265794001	HGWA-113	Water	06/05/18 11:05	06/06/18 10:45
265794002	HGWC-121A	Water	06/05/18 13:03	06/06/18 10:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265794001	HGWA-113	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265794002	HGWC-121A	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Sample: HGWA-113		Lab ID: 265794001		Collected: 06/05/18 11:05		Received: 06/06/18 10:45		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/13/18 09:18	06/18/18 18:31	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 18:31	7440-38-2		
Barium	0.028	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 18:31	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/13/18 09:18	06/18/18 18:31	7440-41-7		
Boron	0.0085J	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 18:31	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 18:31	7440-43-9		
Calcium	7.4	mg/L	0.50	0.014	1	06/13/18 09:18	06/18/18 18:31	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/13/18 09:18	06/18/18 18:31	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 18:31	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/13/18 09:18	06/18/18 18:31	7439-92-1		
Lithium	0.0010J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 18:31	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 18:31	7439-98-7		
Selenium	0.0019J	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 18:31	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 18:31	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:20	06/12/18 16:39	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	92.0	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	1.7	mg/L	0.25	0.024	1		06/12/18 19:24	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		06/12/18 19:24	16984-48-8		
Sulfate	9.9	mg/L	1.0	0.017	1		06/12/18 19:24	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265794

Sample: HGWC-121A		Lab ID: 265794002		Collected: 06/05/18 13:03		Received: 06/06/18 10:45		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/13/18 09:18	06/18/18 18:42	7440-36-0		
Arsenic	0.0014J	mg/L	0.0050	0.00057	1	06/13/18 09:18	06/18/18 18:42	7440-38-2		
Barium	0.078	mg/L	0.010	0.00078	1	06/13/18 09:18	06/18/18 18:42	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/13/18 09:18	06/18/18 18:42	7440-41-7		
Boron	2.6	mg/L	0.040	0.0039	1	06/13/18 09:18	06/18/18 18:42	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/13/18 09:18	06/18/18 18:42	7440-43-9		
Calcium	195	mg/L	25.0	0.69	50	06/13/18 09:18	06/20/18 13:31	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/13/18 09:18	06/18/18 18:42	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/13/18 09:18	06/18/18 18:42	7440-48-4		
Lead	0.00036J	mg/L	0.0050	0.00027	1	06/13/18 09:18	06/18/18 18:42	7439-92-1		
Lithium	0.0092J	mg/L	0.050	0.00097	1	06/13/18 09:18	06/18/18 18:42	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/13/18 09:18	06/18/18 18:42	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/13/18 09:18	06/18/18 18:42	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/13/18 09:18	06/18/18 18:42	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:20	06/12/18 16:42	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	823	mg/L	25.0	10.0	1		06/08/18 16:25			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	40.4	mg/L	0.25	0.024	1		06/12/18 20:06	16887-00-6		
Fluoride	0.19J	mg/L	0.30	0.029	1		06/12/18 20:06	16984-48-8		
Sulfate	241	mg/L	5.0	0.085	5		06/21/18 23:51	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

QC Batch: 7778

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 265794001, 265794002

METHOD BLANK: 36180

Matrix: Water

Associated Lab Samples: 265794001, 265794002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/12/18 15:40	

LABORATORY CONTROL SAMPLE: 36181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36182

36183

Parameter	Units	265874002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	4.6 ug/L	.0025	.0025	0.0065	0.0061	78	59	75-125	7	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

QC Batch: 7923 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265794001, 265794002

METHOD BLANK: 36780 Matrix: Water

Associated Lab Samples: 265794001, 265794002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/18/18 16:50	
Arsenic	mg/L	ND	0.0050	0.00057	06/18/18 16:50	
Barium	mg/L	ND	0.010	0.00078	06/18/18 16:50	
Beryllium	mg/L	ND	0.0030	0.000050	06/18/18 16:50	
Boron	mg/L	ND	0.040	0.0039	06/18/18 16:50	
Cadmium	mg/L	ND	0.0010	0.000093	06/18/18 16:50	
Calcium	mg/L	ND	0.50	0.014	06/18/18 16:50	
Chromium	mg/L	ND	0.010	0.0016	06/18/18 16:50	
Cobalt	mg/L	ND	0.010	0.00052	06/18/18 16:50	
Lead	mg/L	ND	0.0050	0.00027	06/18/18 16:50	
Lithium	mg/L	ND	0.050	0.00097	06/18/18 16:50	
Molybdenum	mg/L	ND	0.010	0.0019	06/18/18 16:50	
Selenium	mg/L	ND	0.010	0.0014	06/18/18 16:50	
Thallium	mg/L	ND	0.0010	0.00014	06/18/18 16:50	

LABORATORY CONTROL SAMPLE: 36781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	100	80-120	
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Beryllium	mg/L	.1	0.10	103	80-120	
Boron	mg/L	1	1.1	110	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.11	109	80-120	
Cobalt	mg/L	.1	0.10	104	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36825 36826

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Antimony	mg/L	.1	.1	.1	.1	101	99	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Parameter	Units	36825		36826		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		265792001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	0.00088J	.1	.1	0.10	0.10	102	99	75-125	3	20		
Barium	mg/L	0.11	.1	.1	0.23	0.22	113	111	75-125	1	20		
Beryllium	mg/L		.1	.1	0.10	0.099	102	98	75-125	4	20		
Boron	mg/L	0.036J	1	1	1.1	1.1	108	102	75-125	6	20		
Cadmium	mg/L	0.00014J	.1	.1	0.10	0.099	101	99	75-125	2	20		
Calcium	mg/L	19.1	1	1	19.4	19.3	37	30	75-125	0	20	M6	
Chromium	mg/L		.1	.1	0.10	0.10	103	101	75-125	2	20		
Cobalt	mg/L	0.025	.1	.1	0.13	0.12	101	97	75-125	3	20		
Lead	mg/L		.1	.1	0.099	0.098	99	98	75-125	1	20		
Lithium	mg/L	0.0016J	.1	.1	0.11	0.099	103	98	75-125	6	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.10	0.10	101	99	75-125	1	20		
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

QC Batch: 7599

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 265794001, 265794002

LABORATORY CONTROL SAMPLE: 35647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

SAMPLE DUPLICATE: 35648

Parameter	Units	265789026 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	65.0	5	10	

SAMPLE DUPLICATE: 35649

Parameter	Units	265791003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	723	714	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265794

QC Batch: 7772 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265794001, 265794002

METHOD BLANK: 36164 Matrix: Water
Associated Lab Samples: 265794001, 265794002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/12/18 13:24	
Fluoride	mg/L	ND	0.30	0.029	06/12/18 13:24	
Sulfate	mg/L	ND	1.0	0.017	06/12/18 13:24	

LABORATORY CONTROL SAMPLE: 36165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36166 36167

Parameter	Units	265790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	2.6	10	10	12.7	12.8	101	101	90-110	0	15	
Fluoride	mg/L	0.032J	10	10	10.1	10.1	100	100	90-110	0	15	
Sulfate	mg/L	1.4	10	10	11.3	11.5	99	101	90-110	2	15	

MATRIX SPIKE SAMPLE: 36168

Parameter	Units	265790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.3	10	15.5	103	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.73J	10	11.0	102	90-110	

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-113 Lab ID: 265794001 Collected: 06/05/18 11:05 Received: 06/06/18 10:45 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.0960 ± 0.190 (0.440) C:92% T:NA	pCi/L	06/14/18 08:21	13982-63-3	
Radium-228	EPA 9320	0.498 ± 0.518 (1.08) C:79% T:67%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.594 ± 0.708 (1.52)	pCi/L	07/05/18 14:46	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Sample: HGWC-121A **Lab ID: 265794002** Collected: 06/05/18 13:03 Received: 06/06/18 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	0.948 ± 0.374 (0.378) C:84% T:NA	pCi/L	06/14/18 08:21	13982-63-3	
Radium-228	EPA 9320	-0.0750 ± 0.358 (0.863) C:73% T:80%	pCi/L	07/03/18 17:18	15262-20-1	
Total Radium	Total Radium Calculation	0.948 ± 0.732 (1.24)	pCi/L	07/05/18 14:46	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265794001, 265794002

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265794001, 265794002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

QC Batch: 301690

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265794001, 265794002

METHOD BLANK: 1476536

Matrix: Water

Associated Lab Samples: 265794001, 265794002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.215 (0.375) C:88% T:NA	pCi/L	06/14/18 08:33	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 1&2, 3&4
Pace Project No.: 265794

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA
PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 1&2, 3&4

Pace Project No.: 265794

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265794001	HGWA-113	EPA 3005A	7923	EPA 6020B	8195
265794002	HGWC-121A	EPA 3005A	7923	EPA 6020B	8195
265794001	HGWA-113	EPA 7470A	7778	EPA 7470A	7839
265794002	HGWC-121A	EPA 7470A	7778	EPA 7470A	7839
265794001	HGWA-113	EPA 9315	301690		
265794002	HGWC-121A	EPA 9315	301690		
265794001	HGWA-113	EPA 9320	301898		
265794002	HGWC-121A	EPA 9320	301898		
265794001	HGWA-113	Total Radium Calculation	304777		
265794002	HGWC-121A	Total Radium Calculation	304777		
265794001	HGWA-113	SM 2540C	7599		
265794002	HGWC-121A	SM 2540C	7599		
265794001	HGWA-113	EPA 300.0	7772		
265794002	HGWC-121A	EPA 300.0	7772		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: 265794

PM: BM

Due Date: 07/05/18

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used THR082 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.6

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 6/6/18 COJ

Temp should be above freezing to 6°C

Comments:

Table with 16 rows of inspection items and checkboxes. Items include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

July 09, 2018

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

RE: Project: Plant Hammond AP
Pace Project No.: 265859

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265859

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 265859

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265859001	HGWC-109	Water	06/06/18 10:32	06/07/18 11:30
265859002	HGWC-105	Water	06/06/18 13:40	06/07/18 11:30
265859003	HGWC-103	Water	06/06/18 15:45	06/07/18 11:30
265859004	FD-02	Water	06/06/18 00:00	06/07/18 11:30
265859005	HGWC-101	Water	06/06/18 17:50	06/07/18 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265859

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265859001	HGWC-109	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA
265859002	HGWC-105	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
265859003	HGWC-103	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
265859004	FD-02	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA
265859005	HGWC-101	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265859

Sample: HGWC-109		Lab ID: 265859001		Collected: 06/06/18 10:32		Received: 06/07/18 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/19/18 17:44	06/20/18 19:49	7440-36-0	
Arsenic	0.0018J	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 19:49	7440-38-2	
Barium	0.095	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 19:49	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/19/18 17:44	06/20/18 19:49	7440-41-7	
Boron	0.48	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 19:49	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 19:49	7440-43-9	
Calcium	41.1	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 19:55	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/19/18 17:44	06/20/18 19:49	7440-47-3	
Cobalt	0.0014J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 19:49	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/19/18 17:44	06/20/18 19:49	7439-92-1	
Lithium	0.0013J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 19:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 19:49	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 19:49	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 19:49	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:26	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	224	mg/L	25.0	10.0	1		06/11/18 18:41		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.3	mg/L	0.25	0.024	1		06/14/18 19:12	16887-00-6	
Fluoride	0.15J	mg/L	0.30	0.029	1		06/14/18 19:12	16984-48-8	
Sulfate	49.7	mg/L	1.0	0.017	1		06/14/18 19:12	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 265859

Sample: HGWC-105		Lab ID: 265859002		Collected: 06/06/18 13:40		Received: 06/07/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/19/18 17:44	06/20/18 20:01	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 20:01	7440-38-2		
Barium	0.068	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 20:01	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/19/18 17:44	06/20/18 20:01	7440-41-7		
Boron	1.4	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 20:01	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 20:01	7440-43-9		
Calcium	81.0	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 20:06	7440-70-2	M6	
Chromium	ND	mg/L	0.010	0.0016	1	06/19/18 17:44	06/20/18 20:01	7440-47-3		
Cobalt	0.00056J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 20:01	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/19/18 17:44	06/20/18 20:01	7439-92-1		
Lithium	0.0041J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 20:01	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 20:01	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 20:01	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 20:01	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:29	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	385	mg/L	25.0	10.0	1		06/11/18 18:41			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	2.9	mg/L	0.25	0.024	1		06/14/18 19:35	16887-00-6		
Fluoride	0.074J	mg/L	0.30	0.029	1		06/14/18 19:35	16984-48-8		
Sulfate	168	mg/L	5.0	0.085	5		06/26/18 10:08	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265859

Sample: HGWC-103		Lab ID: 265859003		Collected: 06/06/18 15:45	Received: 06/07/18 11:30	Matrix: Water			
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	0.0022J	mg/L	0.0030	0.00078	1	06/19/18 17:44	06/20/18 20:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 20:52	7440-38-2	
Barium	0.043	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 20:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/19/18 17:44	06/20/18 20:52	7440-41-7	
Boron	2.5	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 20:52	7440-42-8	
Cadmium	0.00073J	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 20:52	7440-43-9	
Calcium	88.3	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 20:58	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/19/18 17:44	06/20/18 20:52	7440-47-3	
Cobalt	0.0031J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 20:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/19/18 17:44	06/20/18 20:52	7439-92-1	
Lithium	0.0017J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 20:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 20:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 20:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 20:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:31	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	559	mg/L	25.0	10.0	1		06/11/18 18:41		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.4	mg/L	0.25	0.024	1		06/14/18 19:57	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		06/14/18 19:57	16984-48-8	
Sulfate	351	mg/L	10.0	0.17	10		07/06/18 13:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 265859

Sample: FD-02		Lab ID: 265859004		Collected: 06/06/18 00:00		Received: 06/07/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/19/18 17:44	06/20/18 21:04	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 21:04	7440-38-2		
Barium	0.041	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 21:04	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/19/18 17:44	06/20/18 21:04	7440-41-7		
Boron	2.5	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 21:04	7440-42-8		
Cadmium	0.00067J	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 21:04	7440-43-9		
Calcium	87.6	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 21:09	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/19/18 17:44	06/20/18 21:04	7440-47-3		
Cobalt	0.0031J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 21:04	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/19/18 17:44	06/20/18 21:04	7439-92-1		
Lithium	0.0017J	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 21:04	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 21:04	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 21:04	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 21:04	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:33	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	533	mg/L	25.0	10.0	1		06/11/18 18:42			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	6.4	mg/L	0.25	0.024	1		06/14/18 20:19	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		06/14/18 20:19	16984-48-8		
Sulfate	343	mg/L	10.0	0.17	10		07/06/18 14:05	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 265859

Sample: HGWC-101		Lab ID: 265859005		Collected: 06/06/18 17:50		Received: 06/07/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/19/18 17:44	06/20/18 21:27	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/19/18 17:44	06/20/18 21:27	7440-38-2		
Barium	0.043	mg/L	0.010	0.00078	1	06/19/18 17:44	06/20/18 21:27	7440-39-3		
Beryllium	0.000059J	mg/L	0.0030	0.000050	1	06/19/18 17:44	06/20/18 21:27	7440-41-7		
Boron	0.081	mg/L	0.040	0.0039	1	06/19/18 17:44	06/20/18 21:27	7440-42-8		
Cadmium	0.000095J	mg/L	0.0010	0.000093	1	06/19/18 17:44	06/20/18 21:27	7440-43-9		
Calcium	17.0	mg/L	5.0	0.14	10	06/19/18 17:44	06/20/18 21:32	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/19/18 17:44	06/20/18 21:27	7440-47-3		
Cobalt	0.0016J	mg/L	0.010	0.00052	1	06/19/18 17:44	06/20/18 21:27	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/19/18 17:44	06/20/18 21:27	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	06/19/18 17:44	06/20/18 21:27	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/19/18 17:44	06/20/18 21:27	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/19/18 17:44	06/20/18 21:27	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/19/18 17:44	06/20/18 21:27	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:36	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	188	mg/L	25.0	10.0	1		06/11/18 18:42			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	5.3	mg/L	0.25	0.024	1		06/14/18 20:42	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		06/14/18 20:42	16984-48-8		
Sulfate	95.5	mg/L	5.0	0.085	5		06/26/18 11:12	14808-79-8		

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265859

QC Batch: 7784

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

METHOD BLANK: 36205

Matrix: Water

Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/13/18 08:51	

LABORATORY CONTROL SAMPLE: 36206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36207

36208

Parameter	Units	265795001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0025	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265859

QC Batch: 8297 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

METHOD BLANK: 38325 Matrix: Water
Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/20/18 18:11	
Arsenic	mg/L	ND	0.0050	0.00057	06/20/18 18:11	
Barium	mg/L	ND	0.010	0.00078	06/20/18 18:11	
Beryllium	mg/L	ND	0.0030	0.000050	06/20/18 18:11	
Boron	mg/L	ND	0.040	0.0039	06/20/18 18:11	
Cadmium	mg/L	ND	0.0010	0.000093	06/20/18 18:11	
Calcium	mg/L	ND	0.50	0.014	06/20/18 18:11	
Chromium	mg/L	ND	0.010	0.0016	06/20/18 18:11	
Cobalt	mg/L	ND	0.010	0.00052	06/20/18 18:11	
Lead	mg/L	ND	0.0050	0.00027	06/20/18 18:11	
Lithium	mg/L	ND	0.050	0.00097	06/20/18 18:11	
Molybdenum	mg/L	ND	0.010	0.0019	06/20/18 18:11	
Selenium	mg/L	ND	0.010	0.0014	06/20/18 18:11	
Thallium	mg/L	ND	0.0010	0.00014	06/20/18 18:11	

LABORATORY CONTROL SAMPLE: 38326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	104	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.099	99	80-120	
Beryllium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.10	103	80-120	
Cobalt	mg/L	.1	0.10	105	80-120	
Lead	mg/L	.1	0.099	99	80-120	
Lithium	mg/L	.1	0.10	101	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38482 38483

Parameter	Units	265859002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Antimony	mg/L	ND	.1	.1	0.10	0.10	105	104	75-125	1	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265859

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		38482			38483							
Parameter	Units	265859002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	.1	.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.068	.1	.1	0.17	0.17	106	104	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.093	0.093	93	93	75-125	1	20	
Boron	mg/L	1.4	1	1	2.3	2.3	97	91	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Calcium	mg/L	81.0	1	1	82.7	80.6	168	-43	75-125	3	20	M6
Chromium	mg/L	ND	.1	.1	0.095	0.095	95	95	75-125	1	20	
Cobalt	mg/L	0.00056J	.1	.1	0.096	0.098	96	98	75-125	2	20	
Lead	mg/L	ND	.1	.1	0.090	0.091	90	91	75-125	2	20	
Lithium	mg/L	0.0041J	.1	.1	0.097	0.098	93	94	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.099	0.099	99	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.092	0.091	92	91	75-125	0	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265859

QC Batch: 7994 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

METHOD BLANK: 36997 Matrix: Water
Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/14/18 16:54	
Fluoride	mg/L	ND	0.30	0.029	06/14/18 16:54	
Sulfate	mg/L	ND	1.0	0.017	06/14/18 16:54	

LABORATORY CONTROL SAMPLE: 36998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36999 37000

Parameter	Units	265797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.3	10	10	15.9	15.9	96	96	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.1	10.1	101	101	90-110	0	15	
Sulfate	mg/L	46.6	10	10	52.3	52.3	57	57	90-110	0	15 E	

MATRIX SPIKE SAMPLE: 37001

Parameter	Units	265797002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.5	10	14.4	98	90-110	
Fluoride	mg/L	0.097J	10	10.2	101	90-110	
Sulfate	mg/L	4.9	10	17.4	125	90-110 M1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.205 ± 0.228 (0.458) C:84% T:NA	pCi/L	06/28/18 08:13	13982-63-3	
Radium-228	EPA 9320	0.734 ± 0.465 (0.884) C:68% T:92%	pCi/L	07/02/18 17:24	15262-20-1	
Total Radium	Total Radium Calculation	0.939 ± 0.693 (1.34)	pCi/L	07/05/18 14:48	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

Sample: HGWC-105 **Lab ID: 265859002** Collected: 06/06/18 13:40 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.378 ± 0.254 (0.389) C:82% T:NA	pCi/L	06/28/18 08:13	13982-63-3	
Radium-228	EPA 9320	0.181 ± 0.446 (0.994) C:74% T:78%	pCi/L	07/02/18 17:24	15262-20-1	
Total Radium	Total Radium Calculation	0.559 ± 0.700 (1.38)	pCi/L	07/05/18 14:48	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

Sample: HGWC-103 **Lab ID: 265859003** Collected: 06/06/18 15:45 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.299 ± 0.238 (0.420) C:85% T:NA	pCi/L	06/28/18 08:13	13982-63-3	
Radium-228	EPA 9320	0.537 ± 0.469 (0.951) C:71% T:81%	pCi/L	07/02/18 17:24	15262-20-1	
Total Radium	Total Radium Calculation	0.836 ± 0.707 (1.37)	pCi/L	07/05/18 14:48	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

Sample: FD-02 **Lab ID: 265859004** Collected: 06/06/18 00:00 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.252 ± 0.251 (0.500) C:85% T:NA	pCi/L	06/28/18 08:13	13982-63-3	
Radium-228	EPA 9320	0.0938 ± 0.606 (1.37) C:75% T:70%	pCi/L	07/02/18 17:24	15262-20-1	
Total Radium	Total Radium Calculation	0.346 ± 0.857 (1.87)	pCi/L	07/05/18 14:48	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.281 ± 0.224 (0.395) C:92% T:NA	pCi/L	06/28/18 08:14	13982-63-3	
Radium-228	EPA 9320	0.996 ± 0.575 (1.05) C:69% T:77%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	1.28 ± 0.799 (1.45)	pCi/L	07/05/18 14:48	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

QC Batch: 302916

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265859005

METHOD BLANK: 1482110

Matrix: Water

Associated Lab Samples: 265859005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.166 ± 0.207 (0.428) C:81% T:NA	pCi/L	06/28/18 08:14	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

QC Batch: 302388

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

METHOD BLANK: 1479692

Matrix: Water

Associated Lab Samples: 265859001, 265859002, 265859003, 265859004, 265859005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.11 ± 0.508 (0.850) C:78% T:75%	pCi/L	07/02/18 17:21	1A

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265859

QC Batch: 302779

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265859001, 265859002, 265859003, 265859004

METHOD BLANK: 1481497

Matrix: Water

Associated Lab Samples: 265859001, 265859002, 265859003, 265859004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.234 ± 0.205 (0.355) C:82% T:NA	pCi/L	06/28/18 08:12	

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 265859

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA
PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1A Ra-228 detected in Method Blank above the associated MDC. Sample results are reportable without qualification if their activity is below the RL of 1.0 pCi/L.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 265859

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265859001	HGWC-109	EPA 3005A	8297	EPA 6020B	8415
265859002	HGWC-105	EPA 3005A	8297	EPA 6020B	8415
265859003	HGWC-103	EPA 3005A	8297	EPA 6020B	8415
265859004	FD-02	EPA 3005A	8297	EPA 6020B	8415
265859005	HGWC-101	EPA 3005A	8297	EPA 6020B	8415
265859001	HGWC-109	EPA 7470A	7784	EPA 7470A	7846
265859002	HGWC-105	EPA 7470A	7784	EPA 7470A	7846
265859003	HGWC-103	EPA 7470A	7784	EPA 7470A	7846
265859004	FD-02	EPA 7470A	7784	EPA 7470A	7846
265859005	HGWC-101	EPA 7470A	7784	EPA 7470A	7846
265859001	HGWC-109	EPA 9315	302779		
265859002	HGWC-105	EPA 9315	302779		
265859003	HGWC-103	EPA 9315	302779		
265859004	FD-02	EPA 9315	302779		
265859005	HGWC-101	EPA 9315	302916		
265859001	HGWC-109	EPA 9320	302388		
265859002	HGWC-105	EPA 9320	302388		
265859003	HGWC-103	EPA 9320	302388		
265859004	FD-02	EPA 9320	302388		
265859005	HGWC-101	EPA 9320	302388		
265859001	HGWC-109	Total Radium Calculation	304778		
265859002	HGWC-105	Total Radium Calculation	304778		
265859003	HGWC-103	Total Radium Calculation	304778		
265859004	FD-02	Total Radium Calculation	304778		
265859005	HGWC-101	Total Radium Calculation	304778		
265859001	HGWC-109	SM 2540C	7692		
265859002	HGWC-105	SM 2540C	7692		
265859003	HGWC-103	SM 2540C	7692		
265859004	FD-02	SM 2540C	7692		
265859005	HGWC-101	SM 2540C	7692		
265859001	HGWC-109	EPA 300.0	7994		
265859002	HGWC-105	EPA 300.0	7994		
265859003	HGWC-103	EPA 300.0	7994		
265859004	FD-02	EPA 300.0	7994		
265859005	HGWC-101	EPA 300.0	7994		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 265859

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

PM: BM Due Date: 07/06/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other

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

Cooler Temperature 2.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/7/18 MR

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

July 09, 2018

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

RE: Project: Plant Hammond AP
Pace Project No.: 265864

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265864

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 265864

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265864001	HGWC-107	Water	06/06/18 12:58	06/07/18 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265864

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265864001	HGWC-107	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	MWB, RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265864

Sample: HGWC-107 Lab ID: 265864001 Collected: 06/06/18 12:58 Received: 06/07/18 11:30 Matrix: Water											
Parameters	Results	Units	Report Limit			MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A											
Antimony	ND	mg/L	0.0030	0.00078	1		06/20/18 11:50	06/22/18 17:59	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1		06/20/18 11:50	06/22/18 17:59	7440-38-2		
Barium	0.039	mg/L	0.010	0.00078	1		06/20/18 11:50	06/22/18 17:59	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1		06/20/18 11:50	06/22/18 17:59	7440-41-7		
Boron	0.87	mg/L	0.040	0.0039	1		06/20/18 11:50	06/22/18 17:59	7440-42-8		
Cadmium	0.00012J	mg/L	0.0010	0.000093	1		06/20/18 11:50	06/22/18 17:59	7440-43-9		
Calcium	55.0	mg/L	25.0	0.69	50		06/20/18 11:50	06/22/18 18:05	7440-70-2	M6	
Chromium	ND	mg/L	0.010	0.0016	1		06/20/18 11:50	06/22/18 17:59	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1		06/20/18 11:50	06/22/18 17:59	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1		06/20/18 11:50	06/22/18 17:59	7439-92-1		
Lithium	0.00099J	mg/L	0.050	0.00097	1		06/20/18 11:50	06/22/18 17:59	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1		06/20/18 11:50	06/22/18 17:59	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1		06/20/18 11:50	06/22/18 17:59	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1		06/20/18 11:50	06/22/18 17:59	7440-28-0		
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A											
Mercury	ND	mg/L	0.00050	0.000036	1		06/12/18 09:50	06/13/18 09:55	7439-97-6		
2540C Total Dissolved Solids Analytical Method: SM 2540C											
Total Dissolved Solids	278	mg/L	25.0	10.0	1			06/11/18 18:51			
300.0 IC Anions 28 Days Analytical Method: EPA 300.0											
Chloride	2.8	mg/L	0.25	0.024	1			06/15/18 01:54	16887-00-6		
Fluoride	0.057J	mg/L	0.30	0.029	1			06/15/18 01:54	16984-48-8		
Sulfate	132	mg/L	5.0	0.085	5			06/26/18 15:47	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265864

QC Batch: 7784	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 265864001	

METHOD BLANK: 36205 Matrix: Water
Associated Lab Samples: 265864001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/13/18 08:51	

LABORATORY CONTROL SAMPLE: 36206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36207 36208

Parameter	Units	265795001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0025	100	99	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265864

QC Batch: 8374 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265864001

METHOD BLANK: 38651 Matrix: Water
Associated Lab Samples: 265864001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/22/18 17:48	
Arsenic	mg/L	ND	0.0050	0.00057	06/22/18 17:48	
Barium	mg/L	ND	0.010	0.00078	06/22/18 17:48	
Beryllium	mg/L	ND	0.0030	0.000050	06/22/18 17:48	
Boron	mg/L	ND	0.040	0.0039	06/22/18 17:48	
Cadmium	mg/L	ND	0.0010	0.000093	06/22/18 17:48	
Calcium	mg/L	ND	0.50	0.014	06/22/18 17:48	
Chromium	mg/L	ND	0.010	0.0016	06/22/18 17:48	
Cobalt	mg/L	ND	0.010	0.00052	06/22/18 17:48	
Lead	mg/L	ND	0.0050	0.00027	06/22/18 17:48	
Lithium	mg/L	ND	0.050	0.00097	06/22/18 17:48	
Molybdenum	mg/L	ND	0.010	0.0019	06/22/18 17:48	
Selenium	mg/L	ND	0.010	0.0014	06/22/18 17:48	
Thallium	mg/L	ND	0.0010	0.00014	06/22/18 17:48	

LABORATORY CONTROL SAMPLE: 38652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	109	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	105	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38708 38709

Parameter	Units	265864001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result					
Antimony	mg/L	ND	.1	0.11	.1	0.11	106	106	75-125	0	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265864

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38708		38709		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		265864001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	0	20		
Barium	mg/L	0.039	.1	.1	0.14	0.14	105	101	75-125	3	20		
Beryllium	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	5	20		
Boron	mg/L	0.87	1	1	2.0	1.8	111	88	75-125	12	20		
Cadmium	mg/L	0.00012J	.1	.1	0.10	0.10	104	101	75-125	3	20		
Calcium	mg/L	55.0	1	1	55.4	52.6	44	-235	75-125	5	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20		
Cobalt	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	.1	.1	0.10	0.098	101	98	75-125	3	20		
Lithium	mg/L	0.00099J	.1	.1	0.10	0.10	104	102	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.099	101	99	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20		
Thallium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265864

QC Batch: 7739

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 265864001

LABORATORY CONTROL SAMPLE: 36105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 36106

Parameter	Units	265916001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	127	127	0	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265864

QC Batch: 7994 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265864001

METHOD BLANK: 36997 Matrix: Water
Associated Lab Samples: 265864001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/14/18 16:54	
Fluoride	mg/L	ND	0.30	0.029	06/14/18 16:54	
Sulfate	mg/L	ND	1.0	0.017	06/14/18 16:54	

LABORATORY CONTROL SAMPLE: 36998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36999 37000

Parameter	Units	265797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.3	10	10	15.9	15.9	96	96	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.1	10.1	101	101	90-110	0	15	
Sulfate	mg/L	46.6	10	10	52.3	52.3	57	57	90-110	0	15 E	

MATRIX SPIKE SAMPLE: 37001

Parameter	Units	265797002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.5	10	14.4	98	90-110	
Fluoride	mg/L	0.097J	10	10.2	101	90-110	
Sulfate	mg/L	4.9	10	17.4	125	90-110 M1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265864

Sample: HGWC-107 **Lab ID: 265864001** Collected: 06/06/18 12:58 Received: 06/07/18 11:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.268 ± 0.236 (0.429) C:83% T:NA	pCi/L	06/28/18 08:13	13982-63-3	
Radium-228	EPA 9320	0.0973 ± 0.446 (1.02) C:65% T:75%	pCi/L	07/02/18 17:24	15262-20-1	
Total Radium	Total Radium Calculation	0.365 ± 0.682 (1.45)	pCi/L	07/05/18 14:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265864

QC Batch: 302388

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265864001

METHOD BLANK: 1479692

Matrix: Water

Associated Lab Samples: 265864001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.11 ± 0.508 (0.850) C:78% T:75%	pCi/L	07/02/18 17:21	1A

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265864

QC Batch: 302779

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265864001

METHOD BLANK: 1481497

Matrix: Water

Associated Lab Samples: 265864001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.234 ± 0.205 (0.355) C:82% T:NA	pCi/L	06/28/18 08:12	

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 265864

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1A Ra-228 detected in Method Blank above the associated MDC. Sample results are reportable without qualification if their activity is below the RL of 1.0 pCi/L.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 265864

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265864001	HGWC-107	EPA 3005A	8374	EPA 6020B	8605
265864001	HGWC-107	EPA 7470A	7784	EPA 7470A	7846
265864001	HGWC-107	EPA 9315	302779		
265864001	HGWC-107	EPA 9320	302388		
265864001	HGWC-107	Total Radium Calculation	304778		
265864001	HGWC-107	SM 2540C	7739		
265864001	HGWC-107	EPA 300.0	7994		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jbrahams@southernco.com
 Phone: (404)506-7239
 Requested Due Date: **SALVAGED TAT**

Section B

Required Project Information:

Report To: Jett Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP
 Project #:

Section C

Invoice Information:

Attention: scs@invoices@southernco.com
 Company Name
 Address
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacebiolabs.com
 Pace Profile #: 327

ITEM #	MATRIX	MATRIX CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYST	RECEIVED BY / AFFILIATION	DATE	TIME	RECEIVED ON	TEMP IN C	Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Int'd (Y/N)
			START DATE	END DATE														
1	DW	DW	6/6/18	12:08	G	M6	5	H2SO4 Unpreserved	Y	Moelia Muehlen	6/6/18	12:58	6/6/18	21:10				
2	Waste Water	WW	6/6/18	6/6/18	G		2	HCl NaOH Na2S2O3 Methanol Other	Y	Moelia Muehlen	6/7/18	10:06	6/7/18	10:06				
3	Product	P								Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
4	Sect/Solid	SS								Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
5	Wipe	WP								Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
6	Air	AR								Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
7	Other	OT								Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
8	Tissue	TS								Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
9										Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
10										Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
11										Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				
12										Moelia Muehlen	6/7/18	11:30	6/7/18	11:30				

MO#: 265864



265864

ASPI ITEM NMM 06/06/18

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Moelia Muehlen**
 SIGNATURE of SAMPLER: *Moelia Muehlen*

DATE Signed: **06/06/18**

Sample Condition Upon Receipt



Client Name: GIA POWER

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

WO# : 265864

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

PM: **BM** Due Date: **07/06/18**
CLIENT: **GAPower-CCR**

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.2 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/7/18 BM

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>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Field Data Required? Y N

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

July 09, 2018

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

RE: Project: Plant Hammond AP
Pace Project No.: 265888

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265888

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 265888

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265888001	HGWC-117	Water	06/07/18 10:04	06/08/18 10:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265888

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265888001	HGWC-117	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265888

Sample: HGWC-117		Lab ID: 265888001		Collected: 06/07/18 10:04		Received: 06/08/18 10:40		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/20/18 11:50	06/22/18 18:51	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/20/18 11:50	06/22/18 18:51	7440-38-2		
Barium	0.036	mg/L	0.010	0.00078	1	06/20/18 11:50	06/22/18 18:51	7440-39-3		
Beryllium	0.000068J	mg/L	0.0030	0.000050	1	06/20/18 11:50	06/22/18 18:51	7440-41-7		
Boron	0.50	mg/L	0.040	0.0039	1	06/20/18 11:50	06/22/18 18:51	7440-42-8		
Cadmium	0.00049J	mg/L	0.0010	0.000093	1	06/20/18 11:50	06/22/18 18:51	7440-43-9		
Calcium	37.7	mg/L	25.0	0.69	50	06/20/18 11:50	06/22/18 18:56	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/20/18 11:50	06/22/18 18:51	7440-47-3		
Cobalt	0.0083J	mg/L	0.010	0.00052	1	06/20/18 11:50	06/22/18 18:51	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/20/18 11:50	06/22/18 18:51	7439-92-1		
Lithium	0.0011J	mg/L	0.050	0.00097	1	06/20/18 11:50	06/22/18 18:51	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/20/18 11:50	06/22/18 18:51	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/20/18 11:50	06/22/18 18:51	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/20/18 11:50	06/22/18 18:51	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 09:50	06/13/18 09:57	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	223	mg/L	25.0	10.0	1		06/12/18 10:17			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.6	mg/L	0.25	0.024	1		06/22/18 18:10	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		06/22/18 18:10	16984-48-8		
Sulfate	103	mg/L	10.0	0.17	10		07/09/18 11:16	14808-79-8		

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265888

QC Batch: 7784 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 265888001

METHOD BLANK: 36205 Matrix: Water
Associated Lab Samples: 265888001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/13/18 08:51	

LABORATORY CONTROL SAMPLE: 36206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36207 36208

Parameter	Units	265795001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0025	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265888

QC Batch: 8374 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265888001

METHOD BLANK: 38651 Matrix: Water
Associated Lab Samples: 265888001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/22/18 17:48	
Arsenic	mg/L	ND	0.0050	0.00057	06/22/18 17:48	
Barium	mg/L	ND	0.010	0.00078	06/22/18 17:48	
Beryllium	mg/L	ND	0.0030	0.000050	06/22/18 17:48	
Boron	mg/L	ND	0.040	0.0039	06/22/18 17:48	
Cadmium	mg/L	ND	0.0010	0.000093	06/22/18 17:48	
Calcium	mg/L	ND	0.50	0.014	06/22/18 17:48	
Chromium	mg/L	ND	0.010	0.0016	06/22/18 17:48	
Cobalt	mg/L	ND	0.010	0.00052	06/22/18 17:48	
Lead	mg/L	ND	0.0050	0.00027	06/22/18 17:48	
Lithium	mg/L	ND	0.050	0.00097	06/22/18 17:48	
Molybdenum	mg/L	ND	0.010	0.0019	06/22/18 17:48	
Selenium	mg/L	ND	0.010	0.0014	06/22/18 17:48	
Thallium	mg/L	ND	0.0010	0.00014	06/22/18 17:48	

LABORATORY CONTROL SAMPLE: 38652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	109	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	105	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38708 38709

Parameter	Units	265864001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Antimony	mg/L	ND	.1	0.11	.1	0.11	106	106	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265888

Parameter	Units	38708		38709		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		265864001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	0	20		
Barium	mg/L	0.039	.1	.1	0.14	0.14	105	101	75-125	3	20		
Beryllium	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	5	20		
Boron	mg/L	0.87	1	1	2.0	1.8	111	88	75-125	12	20		
Cadmium	mg/L	0.00012J	.1	.1	0.10	0.10	104	101	75-125	3	20		
Calcium	mg/L	55.0	1	1	55.4	52.6	44	-235	75-125	5	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20		
Cobalt	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	.1	.1	0.10	0.098	101	98	75-125	3	20		
Lithium	mg/L	0.00099J	.1	.1	0.10	0.10	104	102	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.099	101	99	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20		
Thallium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265888

QC Batch: 7764	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 265888001	

LABORATORY CONTROL SAMPLE: 36149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	410	102	84-108	

SAMPLE DUPLICATE: 36150

Parameter	Units	265888001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	223	226	1	10	

SAMPLE DUPLICATE: 36151

Parameter	Units	265933001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	63.0	74.0	16	10	D6

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265888

QC Batch: 8546 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265888001

METHOD BLANK: 39316 Matrix: Water
Associated Lab Samples: 265888001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.27	0.25	0.024	06/22/18 15:46	
Fluoride	mg/L	ND	0.30	0.029	06/22/18 15:46	
Sulfate	mg/L	ND	1.0	0.017	06/22/18 15:46	

LABORATORY CONTROL SAMPLE: 39317

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.5	95	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39318 39319

Parameter	Units	265917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.7	10	10	11.2	11.2	95	95	90-110	0	15	
Fluoride	mg/L	0.13J	10	10	9.9	9.9	98	98	90-110	0	15	
Sulfate	mg/L	6.1	10	10	15.4	15.5	94	94	90-110	0	15	

MATRIX SPIKE SAMPLE: 39320

Parameter	Units	265917002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.7	10	12.3	97	90-110	
Fluoride	mg/L	ND	10	9.9	99	90-110	
Sulfate	mg/L	0.049J	10	9.8	98	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265888

Sample: HGWC-117 **Lab ID: 265888001** Collected: 06/07/18 10:04 Received: 06/08/18 10:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.276 ± 0.229 (0.403) C:84% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.759 ± 0.479 (0.893) C:73% T:74%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	1.04 ± 0.708 (1.30)	pCi/L	07/06/18 13:27	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265888

QC Batch: 302916

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265888001

METHOD BLANK: 1482110

Matrix: Water

Associated Lab Samples: 265888001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.166 ± 0.207 (0.428) C:81% T:NA	pCi/L	06/28/18 08:14	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265888

QC Batch: 302388

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265888001

METHOD BLANK: 1479692

Matrix: Water

Associated Lab Samples: 265888001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.11 ± 0.508 (0.850) C:78% T:75%	pCi/L	07/02/18 17:21	1A

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 265888

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA
PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1A Ra-228 detected in Method Blank above the associated MDC. Sample results are reportable without qualification if their activity is below the RL of 1.0 pCi/L.
D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 265888

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265888001	HGWC-117	EPA 3005A	8374	EPA 6020B	8605
265888001	HGWC-117	EPA 7470A	7784	EPA 7470A	7846
265888001	HGWC-117	EPA 9315	302916		
265888001	HGWC-117	EPA 9320	302388		
265888001	HGWC-117	Total Radium Calculation	304880		
265888001	HGWC-117	SM 2540C	7764		
265888001	HGWC-117	EPA 300.0	8546		

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: **265888**

PM: **BM** Due Date: **07/09/18**

CLIENT: **GAPower-CCR**

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

Cooler Temperature 1.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/8/18 MK

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>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

Project Manager Review: _____ Date: _____

July 09, 2018

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

RE: Project: Plant Hammond AP
Pace Project No.: 265889

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265889

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 265889

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265889001	HGWC-118	Water	06/07/18 10:14	06/08/18 10:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265889

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265889001	HGWC-118	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265889

Sample: HGWC-118		Lab ID: 265889001		Collected: 06/07/18 10:14		Received: 06/08/18 10:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/20/18 11:50	06/22/18 19:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/20/18 11:50	06/22/18 19:02	7440-38-2	
Barium	0.059	mg/L	0.010	0.00078	1	06/20/18 11:50	06/22/18 19:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/20/18 11:50	06/22/18 19:02	7440-41-7	
Boron	0.57	mg/L	0.040	0.0039	1	06/20/18 11:50	06/22/18 19:02	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/20/18 11:50	06/22/18 19:02	7440-43-9	
Calcium	79.7	mg/L	25.0	0.69	50	06/20/18 11:50	06/22/18 19:08	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/20/18 11:50	06/22/18 19:02	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/20/18 11:50	06/22/18 19:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/20/18 11:50	06/22/18 19:02	7439-92-1	
Lithium	0.0015J	mg/L	0.050	0.00097	1	06/20/18 11:50	06/22/18 19:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/20/18 11:50	06/22/18 19:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/20/18 11:50	06/22/18 19:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/20/18 11:50	06/22/18 19:02	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 11:05	06/13/18 10:26	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	338	mg/L	25.0	10.0	1		06/12/18 10:17		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	4.1	mg/L	0.25	0.024	1		06/22/18 18:31	16887-00-6	
Fluoride	0.30	mg/L	0.30	0.029	1		06/22/18 18:31	16984-48-8	
Sulfate	60.1	mg/L	10.0	0.17	10		07/09/18 11:39	14808-79-8	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265889

QC Batch: 7789 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 265889001

METHOD BLANK: 36223 Matrix: Water
Associated Lab Samples: 265889001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/13/18 10:07	

LABORATORY CONTROL SAMPLE: 36224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36225 36226

Parameter	Units	265863001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0023	0.0022	90	89	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265889

QC Batch: 8374 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265889001

METHOD BLANK: 38651 Matrix: Water
Associated Lab Samples: 265889001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/22/18 17:48	
Arsenic	mg/L	ND	0.0050	0.00057	06/22/18 17:48	
Barium	mg/L	ND	0.010	0.00078	06/22/18 17:48	
Beryllium	mg/L	ND	0.0030	0.000050	06/22/18 17:48	
Boron	mg/L	ND	0.040	0.0039	06/22/18 17:48	
Cadmium	mg/L	ND	0.0010	0.000093	06/22/18 17:48	
Calcium	mg/L	ND	0.50	0.014	06/22/18 17:48	
Chromium	mg/L	ND	0.010	0.0016	06/22/18 17:48	
Cobalt	mg/L	ND	0.010	0.00052	06/22/18 17:48	
Lead	mg/L	ND	0.0050	0.00027	06/22/18 17:48	
Lithium	mg/L	ND	0.050	0.00097	06/22/18 17:48	
Molybdenum	mg/L	ND	0.010	0.0019	06/22/18 17:48	
Selenium	mg/L	ND	0.010	0.0014	06/22/18 17:48	
Thallium	mg/L	ND	0.0010	0.00014	06/22/18 17:48	

LABORATORY CONTROL SAMPLE: 38652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	109	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	105	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38708 38709

Parameter	Units	265864001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result					
Antimony	mg/L	ND	.1	0.11	.1	0.11	106	106	75-125	0	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265889

Parameter	Units	38708		38709		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		265864001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	0	20		
Barium	mg/L	0.039	.1	.1	0.14	0.14	105	101	75-125	3	20		
Beryllium	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	5	20		
Boron	mg/L	0.87	1	1	2.0	1.8	111	88	75-125	12	20		
Cadmium	mg/L	0.00012J	.1	.1	0.10	0.10	104	101	75-125	3	20		
Calcium	mg/L	55.0	1	1	55.4	52.6	44	-235	75-125	5	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20		
Cobalt	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	.1	.1	0.10	0.098	101	98	75-125	3	20		
Lithium	mg/L	0.00099J	.1	.1	0.10	0.10	104	102	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.099	101	99	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20		
Thallium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265889

QC Batch: 7764	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 265889001	

LABORATORY CONTROL SAMPLE: 36149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	410	102	84-108	

SAMPLE DUPLICATE: 36150

Parameter	Units	265888001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	223	226	1	10	

SAMPLE DUPLICATE: 36151

Parameter	Units	265933001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	63.0	74.0	16	10	D6

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265889

QC Batch: 8546 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265889001

METHOD BLANK: 39316 Matrix: Water
Associated Lab Samples: 265889001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.27	0.25	0.024	06/22/18 15:46	
Fluoride	mg/L	ND	0.30	0.029	06/22/18 15:46	
Sulfate	mg/L	ND	1.0	0.017	06/22/18 15:46	

LABORATORY CONTROL SAMPLE: 39317

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.5	95	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39318 39319

Parameter	Units	265917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	1.7	10	10	11.2	11.2	95	95	90-110	0	15	
Fluoride	mg/L	0.13J	10	10	9.9	9.9	98	98	90-110	0	15	
Sulfate	mg/L	6.1	10	10	15.4	15.5	94	94	90-110	0	15	

MATRIX SPIKE SAMPLE: 39320

Parameter	Units	265917002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.7	10	12.3	97	90-110	
Fluoride	mg/L	ND	10	9.9	99	90-110	
Sulfate	mg/L	0.049J	10	9.8	98	90-110	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265889

Sample: HGWC-118 **Lab ID: 265889001** Collected: 06/07/18 10:14 Received: 06/08/18 10:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.328 ± 0.267 (0.492) C:87% T:NA	pCi/L	06/28/18 09:46	13982-63-3	
Radium-228	EPA 9320	0.368 ± 0.420 (0.882) C:76% T:73%	pCi/L	07/02/18 17:25	15262-20-1	
Total Radium	Total Radium Calculation	0.696 ± 0.687 (1.37)	pCi/L	07/06/18 13:27	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265889

QC Batch: 302916

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265889001

METHOD BLANK: 1482110

Matrix: Water

Associated Lab Samples: 265889001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.166 ± 0.207 (0.428) C:81% T:NA	pCi/L	06/28/18 08:14	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265889

QC Batch: 302388

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265889001

METHOD BLANK: 1479692

Matrix: Water

Associated Lab Samples: 265889001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.11 ± 0.508 (0.850) C:78% T:75%	pCi/L	07/02/18 17:21	1A

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 265889

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA
PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1A Ra-228 detected in Method Blank above the associated MDC. Sample results are reportable without qualification if their activity is below the RL of 1.0 pCi/L.
D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 265889

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265889001	HGWC-118	EPA 3005A	8374	EPA 6020B	8605
265889001	HGWC-118	EPA 7470A	7789	EPA 7470A	7847
265889001	HGWC-118	EPA 9315	302916		
265889001	HGWC-118	EPA 9320	302388		
265889001	HGWC-118	Total Radium Calculation	304880		
265889001	HGWC-118	SM 2540C	7764		
265889001	HGWC-118	EPA 300.0	8546		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Face Analytical

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 33 Type of Ice: Wet Blue None

Cooler Temperature 1.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

WO#: 265889

PM: BM Due Date: 07/09/18

CLIENT: GA Power-CCR

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 6/8/18 MK

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>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y N

Project Manager Review: _____

Date: _____

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

July 09, 2018

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

RE: Project: Plant Hammond AP
Pace Project No.: 265890

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 265890

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 265890

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265890001	EB-02	Water	06/07/18 08:55	06/08/18 10:40
265890002	FB-02	Water	06/07/18 09:58	06/08/18 10:40
265890003	FB-03	Water	06/07/18 10:11	06/08/18 10:40

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 265890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
265890001	EB-02	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
265890002	FB-02	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
265890003	FB-03	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	JPT	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 265890

Sample: EB-02		Lab ID: 265890001		Collected: 06/07/18 08:55		Received: 06/08/18 10:40		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/20/18 11:50	06/22/18 19:14	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/20/18 11:50	06/22/18 19:14	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	06/20/18 11:50	06/22/18 19:14	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/20/18 11:50	06/22/18 19:14	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	06/20/18 11:50	06/22/18 19:14	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/20/18 11:50	06/22/18 19:14	7440-43-9		
Calcium	0.026J	mg/L	0.50	0.014	1	06/20/18 11:50	06/22/18 19:14	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/20/18 11:50	06/22/18 19:14	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/20/18 11:50	06/22/18 19:14	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/20/18 11:50	06/22/18 19:14	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	06/20/18 11:50	06/22/18 19:14	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/20/18 11:50	06/22/18 19:14	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/20/18 11:50	06/22/18 19:14	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/20/18 11:50	06/22/18 19:14	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 11:05	06/13/18 10:28	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	18.0J	mg/L	25.0	10.0	1		06/12/18 10:17			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.29	mg/L	0.25	0.024	1		06/22/18 18:51	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		06/22/18 18:51	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		06/22/18 18:51	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP
Pace Project No.: 265890

Sample: FB-02		Lab ID: 265890002		Collected: 06/07/18 09:58		Received: 06/08/18 10:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/20/18 11:50	06/22/18 19:19	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/20/18 11:50	06/22/18 19:19	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	06/20/18 11:50	06/22/18 19:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/20/18 11:50	06/22/18 19:19	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	06/20/18 11:50	06/22/18 19:19	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/20/18 11:50	06/22/18 19:19	7440-43-9	
Calcium	0.037J	mg/L	0.50	0.014	1	06/20/18 11:50	06/22/18 19:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/20/18 11:50	06/22/18 19:19	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/20/18 11:50	06/22/18 19:19	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/20/18 11:50	06/22/18 19:19	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/20/18 11:50	06/22/18 19:19	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/20/18 11:50	06/22/18 19:19	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/20/18 11:50	06/22/18 19:19	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/20/18 11:50	06/22/18 19:19	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 11:05	06/13/18 10:35	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	58.0	mg/L	25.0	10.0	1		06/12/18 10:17		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	0.30	mg/L	0.25	0.024	1		06/22/18 19:12	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		06/22/18 19:12	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		06/22/18 19:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 265890

Sample: FB-03		Lab ID: 265890003		Collected: 06/07/18 10:11		Received: 06/08/18 10:40		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/20/18 11:50	06/22/18 19:25	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	06/20/18 11:50	06/22/18 19:25	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	06/20/18 11:50	06/22/18 19:25	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	06/20/18 11:50	06/22/18 19:25	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	06/20/18 11:50	06/22/18 19:25	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	06/20/18 11:50	06/22/18 19:25	7440-43-9		
Calcium	0.027J	mg/L	0.50	0.014	1	06/20/18 11:50	06/22/18 19:25	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	06/20/18 11:50	06/22/18 19:25	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	06/20/18 11:50	06/22/18 19:25	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	06/20/18 11:50	06/22/18 19:25	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	06/20/18 11:50	06/22/18 19:25	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	06/20/18 11:50	06/22/18 19:25	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	06/20/18 11:50	06/22/18 19:25	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	06/20/18 11:50	06/22/18 19:25	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/12/18 11:05	06/13/18 10:37	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	20.0J	mg/L	25.0	10.0	1		06/12/18 10:17			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.28	mg/L	0.25	0.024	1		06/22/18 19:33	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		06/22/18 19:33	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		06/22/18 19:33	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265890

QC Batch: 7789 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 265890001, 265890002, 265890003

METHOD BLANK: 36223 Matrix: Water
Associated Lab Samples: 265890001, 265890002, 265890003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	06/13/18 10:07	

LABORATORY CONTROL SAMPLE: 36224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 36225 36226

Parameter	Units	265863001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0023	0.0022	90	89	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265890

QC Batch: 8374 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265890001, 265890002, 265890003

METHOD BLANK: 38651 Matrix: Water
Associated Lab Samples: 265890001, 265890002, 265890003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/22/18 17:48	
Arsenic	mg/L	ND	0.0050	0.00057	06/22/18 17:48	
Barium	mg/L	ND	0.010	0.00078	06/22/18 17:48	
Beryllium	mg/L	ND	0.0030	0.000050	06/22/18 17:48	
Boron	mg/L	ND	0.040	0.0039	06/22/18 17:48	
Cadmium	mg/L	ND	0.0010	0.000093	06/22/18 17:48	
Calcium	mg/L	ND	0.50	0.014	06/22/18 17:48	
Chromium	mg/L	ND	0.010	0.0016	06/22/18 17:48	
Cobalt	mg/L	ND	0.010	0.00052	06/22/18 17:48	
Lead	mg/L	ND	0.0050	0.00027	06/22/18 17:48	
Lithium	mg/L	ND	0.050	0.00097	06/22/18 17:48	
Molybdenum	mg/L	ND	0.010	0.0019	06/22/18 17:48	
Selenium	mg/L	ND	0.010	0.0014	06/22/18 17:48	
Thallium	mg/L	ND	0.0010	0.00014	06/22/18 17:48	

LABORATORY CONTROL SAMPLE: 38652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	109	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	105	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	106	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38708 38709

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		265864001	Spike Conc.	Spike Conc.	Result						
Antimony	mg/L	ND	.1	.1	0.11	0.11	106	106	75-125	0	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 265890

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		38708		38709									
Parameter	Units	265864001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Arsenic	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	0	20		
Barium	mg/L	0.039	.1	.1	0.14	0.14	105	101	75-125	3	20		
Beryllium	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	5	20		
Boron	mg/L	0.87	1	1	2.0	1.8	111	88	75-125	12	20		
Cadmium	mg/L	0.00012J	.1	.1	0.10	0.10	104	101	75-125	3	20		
Calcium	mg/L	55.0	1	1	55.4	52.6	44	-235	75-125	5	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20		
Cobalt	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		
Lead	mg/L	ND	.1	.1	0.10	0.098	101	98	75-125	3	20		
Lithium	mg/L	0.00099J	.1	.1	0.10	0.10	104	102	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.10	0.099	101	99	75-125	1	20		
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20		
Thallium	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 265890

QC Batch: 8546 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265890001, 265890002, 265890003

METHOD BLANK: 39316 Matrix: Water
Associated Lab Samples: 265890001, 265890002, 265890003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.27	0.25	0.024	06/22/18 15:46	
Fluoride	mg/L	ND	0.30	0.029	06/22/18 15:46	
Sulfate	mg/L	ND	1.0	0.017	06/22/18 15:46	

LABORATORY CONTROL SAMPLE: 39317

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.5	95	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39318 39319

Parameter	Units	265917001		39319		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Chloride	mg/L	1.7	10	11.2	11.2	95	95	90-110	0	15			
Fluoride	mg/L	0.13J	10	9.9	9.9	98	98	90-110	0	15			
Sulfate	mg/L	6.1	10	15.4	15.5	94	94	90-110	0	15			

MATRIX SPIKE SAMPLE: 39320

Parameter	Units	265917002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.7	10	12.3	97	90-110	
Fluoride	mg/L	ND	10	9.9	99	90-110	
Sulfate	mg/L	0.049J	10	9.8	98	90-110	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265890

Sample: EB-02 **Lab ID: 265890001** Collected: 06/07/18 08:55 Received: 06/08/18 10:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.226 ± 0.191 (0.331) C:90% T:NA	pCi/L	06/21/18 08:24	13982-63-3	
Radium-228	EPA 9320	0.380 ± 0.429 (0.897) C:74% T:80%	pCi/L	07/03/18 17:19	15262-20-1	
Total Radium	Total Radium Calculation	0.606 ± 0.620 (1.23)	pCi/L	07/06/18 13:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265890

Sample: FB-02 **Lab ID: 265890002** Collected: 06/07/18 09:58 Received: 06/08/18 10:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.211 ± 0.236 (0.484) C:89% T:NA	pCi/L	06/21/18 08:24	13982-63-3	
Radium-228	EPA 9320	0.282 ± 0.558 (1.23) C:66% T:71%	pCi/L	07/03/18 17:19	15262-20-1	
Total Radium	Total Radium Calculation	0.493 ± 0.794 (1.71)	pCi/L	07/06/18 13:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265890

Sample: FB-03 **Lab ID: 265890003** Collected: 06/07/18 10:11 Received: 06/08/18 10:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.279 ± 0.210 (0.350) C:93% T:NA	pCi/L	06/21/18 08:24	13982-63-3	
Radium-228	EPA 9320	0.745 ± 0.531 (1.03) C:73% T:77%	pCi/L	07/03/18 17:17	15262-20-1	
Total Radium	Total Radium Calculation	1.02 ± 0.741 (1.38)	pCi/L	07/06/18 13:27	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265890

QC Batch: 301898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 265890001, 265890002, 265890003

METHOD BLANK: 1477325

Matrix: Water

Associated Lab Samples: 265890001, 265890002, 265890003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.419 (0.883) C:76% T:77%	pCi/L	07/03/18 17:17	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 265890

QC Batch: 301864

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 265890001, 265890002, 265890003

METHOD BLANK: 1477267

Matrix: Water

Associated Lab Samples: 265890001, 265890002, 265890003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.252 ± 0.187 (0.281) C:92% T:NA	pCi/L	06/21/18 08:22	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 265890

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-GA Pace Analytical Services - Atlanta, GA

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 265890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265890001	EB-02	EPA 3005A	8374	EPA 6020B	8605
265890002	FB-02	EPA 3005A	8374	EPA 6020B	8605
265890003	FB-03	EPA 3005A	8374	EPA 6020B	8605
265890001	EB-02	EPA 7470A	7789	EPA 7470A	7847
265890002	FB-02	EPA 7470A	7789	EPA 7470A	7847
265890003	FB-03	EPA 7470A	7789	EPA 7470A	7847
265890001	EB-02	EPA 9315	301864		
265890002	FB-02	EPA 9315	301864		
265890003	FB-03	EPA 9315	301864		
265890001	EB-02	EPA 9320	301898		
265890002	FB-02	EPA 9320	301898		
265890003	FB-03	EPA 9320	301898		
265890001	EB-02	Total Radium Calculation	304880		
265890002	FB-02	Total Radium Calculation	304880		
265890003	FB-03	Total Radium Calculation	304880		
265890001	EB-02	SM 2540C	7764		
265890002	FB-02	SM 2540C	7764		
265890003	FB-03	SM 2540C	7764		
265890001	EB-02	EPA 300.0	8546		
265890002	FB-02	EPA 300.0	8546		
265890003	FB-03	EPA 300.0	8546		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GA Power

Project # _____

WO#: 265890

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

PM: BM Due Date: 07/09/18
CLIENT: GAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 1.2 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 6/8/18 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution:

Field Data Required? Y N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

October 09, 2018

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

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 269951

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269951001	HGWA-111	Water	10/01/18 14:05	10/02/18 12:00
269951002	HGWA-112	Water	10/01/18 15:26	10/02/18 12:00
269951003	HGWA-113	Water	10/01/18 16:45	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269951001	HGWA-111	EPA 6020B	CSW	14
		EPA 7470A	AAP	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269951002	HGWA-112	EPA 6020B	CSW	14
		EPA 7470A	AAP	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269951003	HGWA-113	EPA 6020B	CSW	14
		EPA 7470A	AAP	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Sample: HGWA-111		Lab ID: 269951001		Collected: 10/01/18 14:05		Received: 10/02/18 12:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/04/18 11:09	10/08/18 22:53	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/08/18 22:53	7440-38-2	
Barium	0.021	mg/L	0.010	0.00078	1	10/04/18 11:09	10/08/18 22:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/04/18 11:09	10/08/18 22:53	7440-41-7	
Boron	0.0054J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/08/18 22:53	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/08/18 22:53	7440-43-9	
Calcium	14.2J	mg/L	25.0	0.69	50	10/04/18 11:09	10/08/18 22:58	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	10/04/18 11:09	10/08/18 22:53	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/08/18 22:53	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/04/18 11:09	10/08/18 22:53	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/04/18 11:09	10/08/18 22:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/08/18 22:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/08/18 22:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/08/18 22:53	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	0.000043J	mg/L	0.00050	0.000036	1	10/04/18 09:35	10/04/18 17:35	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	101	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.2	mg/L	0.25	0.024	1		10/04/18 21:53	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/04/18 21:53	16984-48-8	
Sulfate	1.0	mg/L	1.0	0.017	1		10/04/18 21:53	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Sample: HGWA-112		Lab ID: 269951002		Collected: 10/01/18 15:26		Received: 10/02/18 12:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/04/18 11:09	10/08/18 23:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/08/18 23:04	7440-38-2	
Barium	0.026	mg/L	0.010	0.00078	1	10/04/18 11:09	10/08/18 23:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/04/18 11:09	10/08/18 23:04	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/04/18 11:09	10/08/18 23:04	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/08/18 23:04	7440-43-9	
Calcium	5.8	mg/L	0.50	0.014	1	10/04/18 11:09	10/08/18 23:04	7440-70-2	
Chromium	0.0036J	mg/L	0.010	0.0016	1	10/04/18 11:09	10/08/18 23:04	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/08/18 23:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/04/18 11:09	10/08/18 23:04	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/04/18 11:09	10/08/18 23:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/08/18 23:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/08/18 23:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/08/18 23:04	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	0.000039J	mg/L	0.00050	0.000036	1	10/04/18 09:35	10/04/18 17:38	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	76.0	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.6	mg/L	0.25	0.024	1		10/04/18 22:54	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/04/18 22:54	16984-48-8	
Sulfate	0.52J	mg/L	1.0	0.017	1		10/04/18 22:54	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Sample: HGWA-113		Lab ID: 269951003		Collected: 10/01/18 16:45		Received: 10/02/18 12:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/04/18 11:09	10/08/18 23:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/08/18 23:15	7440-38-2	
Barium	0.025	mg/L	0.010	0.00078	1	10/04/18 11:09	10/08/18 23:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/04/18 11:09	10/08/18 23:15	7440-41-7	
Boron	0.0042J	mg/L	0.040	0.0039	1	10/04/18 11:09	10/08/18 23:15	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/08/18 23:15	7440-43-9	
Calcium	6.2	mg/L	0.50	0.014	1	10/04/18 11:09	10/08/18 23:15	7440-70-2	M1
Chromium	0.0023J	mg/L	0.010	0.0016	1	10/04/18 11:09	10/08/18 23:15	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/08/18 23:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/04/18 11:09	10/08/18 23:15	7439-92-1	
Lithium	0.0010J	mg/L	0.050	0.00097	1	10/04/18 11:09	10/08/18 23:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/08/18 23:15	7439-98-7	
Selenium	0.0024J	mg/L	0.010	0.0014	1	10/04/18 11:09	10/08/18 23:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/08/18 23:15	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	0.000043J	mg/L	0.00050	0.000036	1	10/04/18 09:35	10/04/18 17:40	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	91.0	mg/L	25.0	10.0	1		10/03/18 17:16		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	1.6	mg/L	0.25	0.024	1		10/04/18 23:15	16887-00-6	
Fluoride	0.078J	mg/L	0.30	0.029	1		10/04/18 23:15	16984-48-8	
Sulfate	6.7	mg/L	1.0	0.017	1		10/04/18 23:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

QC Batch: 14730

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 269951001, 269951002, 269951003

METHOD BLANK: 65812

Matrix: Water

Associated Lab Samples: 269951001, 269951002, 269951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.000042J	0.00050	0.000036	10/04/18 17:11	

LABORATORY CONTROL SAMPLE: 65813

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65814

65815

Parameter	Units	65814		65815		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Mercury	mg/L	ND	.0025	0.0021	0.0023	82	90	75-125	10	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4
Pace Project No.: 269951

QC Batch: 14744 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 269951001, 269951002, 269951003

METHOD BLANK: 65855 Matrix: Water
Associated Lab Samples: 269951001, 269951002, 269951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/08/18 22:41	
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 22:41	
Barium	mg/L	ND	0.010	0.00078	10/08/18 22:41	
Beryllium	mg/L	ND	0.0030	0.000050	10/08/18 22:41	
Boron	mg/L	ND	0.040	0.0039	10/08/18 22:41	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 22:41	
Calcium	mg/L	ND	0.50	0.014	10/08/18 22:41	
Chromium	mg/L	ND	0.010	0.0016	10/08/18 22:41	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 22:41	
Lead	mg/L	ND	0.0050	0.00027	10/08/18 22:41	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 22:41	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 22:41	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 22:41	

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.10	105	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857 65858

Parameter	Units	269951003 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857		65858		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	102	75-125	3	20		
Barium	mg/L	0.025	.1	.1	0.13	0.12	101	100	75-125	0	20		
Beryllium	mg/L	ND	.1	.1	0.095	0.094	95	94	75-125	1	20		
Boron	mg/L	0.0042J	1	1	0.93	0.91	93	91	75-125	2	20		
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20		
Calcium	mg/L	6.2	1	1	7.0	7.0	76	74	75-125	0	20	M1	
Chromium	mg/L	0.0023J	.1	.1	0.10	0.10	102	102	75-125	0	20		
Cobalt	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20		
Lead	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20		
Lithium	mg/L	0.0010J	.1	.1	0.095	0.094	94	93	75-125	1	20		
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20		
Selenium	mg/L	0.0024J	.1	.1	0.11	0.10	103	98	75-125	5	20		
Thallium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	3	20		

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4
Pace Project No.: 269951

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 269951001, 269951002, 269951003

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 269951001, 269951002, 269951003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		65947		65948		% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15	
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15	

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 3&4

Pace Project No.: 269951

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269951001	HGWA-111	EPA 3005A	14744	EPA 6020B	14814
269951002	HGWA-112	EPA 3005A	14744	EPA 6020B	14814
269951003	HGWA-113	EPA 3005A	14744	EPA 6020B	14814
269951001	HGWA-111	EPA 7470A	14730	EPA 7470A	14777
269951002	HGWA-112	EPA 7470A	14730	EPA 7470A	14777
269951003	HGWA-113	EPA 7470A	14730	EPA 7470A	14777
269951001	HGWA-111	SM 2540C	14690		
269951002	HGWA-112	SM 2540C	14690		
269951003	HGWA-113	SM 2540C	14690		
269951001	HGWA-111	EPA 300.0	14765		
269951002	HGWA-112	EPA 300.0	14765		
269951003	HGWA-113	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.5

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

WO# : 269951

PM: BM Due Date: 10/09/18

CLIENT: GAPower-CCR

Date and Initials of person examining contents: 10/02/18 MW

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>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):	_____			

Client Notification/ Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

Project Manager Review: _____ **Date:** _____

October 25, 2018

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

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 269952

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4
Pace Project No.: 269952

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 3&4
Pace Project No.: 269952

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269952001	HGWA-111	Water	10/01/18 14:05	10/02/18 12:00
269952002	HGWA-112	Water	10/01/18 15:26	10/02/18 12:00
269952003	HGWA-113	Water	10/01/18 16:45	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269952001	HGWA-111	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269952002	HGWA-112	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269952003	HGWA-113	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

Sample: HGWA-111 **Lab ID: 269952001** Collected: 10/01/18 14:05 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0867 ± 0.142 (0.318) C:99% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.364 ± 0.422 (0.890) C:68% T:80%	pCi/L	10/16/18 11:22	15262-20-1	
Total Radium	Total Radium Calculation	0.451 ± 0.564 (1.21)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

Sample: HGWA-112 **Lab ID: 269952002** Collected: 10/01/18 15:26 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.183 ± 0.161 (0.296) C:99% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.311 ± 0.375 (0.794) C:68% T:90%	pCi/L	10/16/18 11:23	15262-20-1	
Total Radium	Total Radium Calculation	0.494 ± 0.536 (1.09)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

Sample: HGWA-113 **Lab ID: 269952003** Collected: 10/01/18 16:45 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.370 ± 0.202 (0.272) C:98% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.612 ± 0.372 (0.694) C:79% T:85%	pCi/L	10/16/18 11:23	15262-20-1	
Total Radium	Total Radium Calculation	0.982 ± 0.574 (0.966)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

QC Batch:	315900	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	269952001, 269952002, 269952003		

METHOD BLANK:	1541949	Matrix:	Water
Associated Lab Samples:	269952001, 269952002, 269952003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 269952001, 269952002, 269952003

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 269952001, 269952002, 269952003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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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QUALIFIERS

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 3&4

Pace Project No.: 269952

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269952001	HGWA-111	EPA 9315	315900		
269952002	HGWA-112	EPA 9315	315900		
269952003	HGWA-113	EPA 9315	315900		
269952001	HGWA-111	EPA 9320	315901		
269952002	HGWA-112	EPA 9320	315901		
269952003	HGWA-113	EPA 9320	315901		
269952001	HGWA-111	Total Radium Calculation	317509		
269952002	HGWA-112	Total Radium Calculation	317509		
269952003	HGWA-113	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

WO# : 269952
PM: BM Due Date: 10/30/18
CLIENT: CAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/22/18 PWA

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>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):	_____			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

October 22, 2018

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

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 2610033

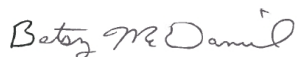
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the report issued on October 10, 2018. The report has been revised to add mercury analysis per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610033001	HGWC-109	Water	10/02/18 14:28	10/03/18 13:00
2610033002	HGWC-107	Water	10/02/18 15:35	10/03/18 13:00
2610033003	HGWC-105	Water	10/02/18 16:42	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610033001	HGWC-109	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610033002	HGWC-107	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610033003	HGWC-105	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Sample: HGWC-109 Lab ID: 2610033001 Collected: 10/02/18 14:28 Received: 10/03/18 13:00 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 20:01	7440-36-0	
Arsenic	0.0014J	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 20:01	7440-38-2	
Barium	0.089	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 20:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 20:01	7440-41-7	
Boron	0.43	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 20:01	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 20:01	7440-43-9	
Calcium	42.5	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 20:07	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 20:01	7440-47-3	
Cobalt	0.00081J	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 20:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 20:01	7439-92-1	
Lithium	0.0013J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 20:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 20:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 20:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 20:01	7440-28-0	
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.000036	1	10/18/18 13:25	10/19/18 12:21	7439-97-6	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	230	mg/L	25.0	10.0	1		10/08/18 17:34		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	5.3	mg/L	0.25	0.024	1		10/05/18 05:28	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 05:28	16984-48-8	
Sulfate	42.3	mg/L	1.0	0.017	1		10/05/18 05:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Sample: HGWC-107		Lab ID: 2610033002		Collected: 10/02/18 15:35		Received: 10/03/18 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	0.0011J	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 20:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 20:52	7440-38-2	
Barium	0.038	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 20:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 20:52	7440-41-7	
Boron	0.82	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 20:52	7440-42-8	
Cadmium	0.00010J	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 20:52	7440-43-9	
Calcium	55.4	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 20:58	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 20:52	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 20:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 20:52	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 20:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 20:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 20:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 20:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/18/18 13:25	10/19/18 12:31	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	274	mg/L	25.0	10.0	1		10/08/18 17:34		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.2	mg/L	0.25	0.024	1		10/05/18 05:49	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 05:49	16984-48-8	
Sulfate	132	mg/L	10.0	0.17	10		10/05/18 10:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Sample: HGWC-105		Lab ID: 2610033003		Collected: 10/02/18 16:42		Received: 10/03/18 13:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 21:04	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 21:04	7440-38-2		
Barium	0.066	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 21:04	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 21:04	7440-41-7		
Boron	1.2	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 21:04	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 21:04	7440-43-9		
Calcium	84.7	mg/L	25.0	0.69	50	10/05/18 13:39	10/08/18 21:09	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 21:04	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 21:04	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 21:04	7439-92-1		
Lithium	0.0041J	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 21:04	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 21:04	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 21:04	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 21:04	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/18/18 13:25	10/19/18 12:38	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	374	mg/L	25.0	10.0	1		10/08/18 17:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.5	mg/L	0.25	0.024	1		10/05/18 07:35	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 07:35	16984-48-8		
Sulfate	173	mg/L	10.0	0.17	10		10/05/18 15:01	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

QC Batch: 15612

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610033001, 2610033002, 2610033003

METHOD BLANK: 69682

Matrix: Water

Associated Lab Samples: 2610033001, 2610033002, 2610033003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/19/18 12:16	

LABORATORY CONTROL SAMPLE: 69683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0027	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 69684

69685

Parameter	Units	2610033001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Mercury	mg/L	ND	.0025	0.0026	.0025	0.0027	103	107	75-125	4	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4
Pace Project No.: 2610033

QC Batch: 14855 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610033001, 2610033002, 2610033003

METHOD BLANK: 66522 Matrix: Water
Associated Lab Samples: 2610033001, 2610033002, 2610033003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/08/18 18:29	
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 18:29	
Barium	mg/L	ND	0.010	0.00078	10/08/18 18:29	
Beryllium	mg/L	ND	0.0030	0.000050	10/08/18 18:29	
Boron	mg/L	ND	0.040	0.0039	10/08/18 18:29	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 18:29	
Calcium	mg/L	ND	0.50	0.014	10/08/18 18:29	
Chromium	mg/L	ND	0.010	0.0016	10/08/18 18:29	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 18:29	
Lead	mg/L	ND	0.0050	0.00027	10/08/18 18:29	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 18:29	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 18:29	

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	106	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.10	103	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lead	mg/L	.1	0.10	102	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66524 66525

Parameter	Units	2610033001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result					
Antimony	mg/L	ND	.1	.1	0.11	0.10	109	102	75-125	7	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Parameter	Units	66524		66525		MS % Rec	MSD % Rec	% Rec	Limits	RPD	Max RPD	Qual
		2610033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.10	104	102	75-125	2	20	
Barium	mg/L	0.089	.1	.1	0.19	0.18	102	94	75-125	4	20	
Beryllium	mg/L	ND	.1	.1	0.095	0.094	95	94	75-125	1	20	
Boron	mg/L	0.43	1	1	1.3	1.3	89	90	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Calcium	mg/L	42.5	1	1	41.5	42.3	-94	-14	75-125	2	20	M6
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20	
Cobalt	mg/L	0.00081J	.1	.1	0.099	0.096	98	95	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.10	0.097	100	97	75-125	3	20	
Lithium	mg/L	0.0013J	.1	.1	0.095	0.096	93	95	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	106	101	75-125	5	20	
Selenium	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	2	20	
Thallium	mg/L	ND	.1	.1	0.10	0.096	101	96	75-125	5	20	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

QC Batch: 14909

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 2610033001, 2610033002, 2610033003

LABORATORY CONTROL SAMPLE: 66853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 66854

Parameter	Units	2610027005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	699	1	10	

SAMPLE DUPLICATE: 66855

Parameter	Units	2610112002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	330	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

QC Batch: 14765 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2610033001, 2610033002, 2610033003

METHOD BLANK: 65945 Matrix: Water

Associated Lab Samples: 2610033001, 2610033002, 2610033003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		269951002		269951003		269951004		% Rec Limits	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec			
Chloride	mg/L	2.2	10	10	10	12.4	12.4	102	101	90-110	0	15
Fluoride	mg/L	ND	10	10	10	10.4	10.3	104	103	90-110	0	15
Sulfate	mg/L	1.0	10	10	10	11.3	11.1	102	100	90-110	2	15

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 3&4

Pace Project No.: 2610033

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610033001	HGWC-109	EPA 3005A	14855	EPA 6020B	14882
2610033002	HGWC-107	EPA 3005A	14855	EPA 6020B	14882
2610033003	HGWC-105	EPA 3005A	14855	EPA 6020B	14882
2610033001	HGWC-109	EPA 7470A	15612	EPA 7470A	15644
2610033002	HGWC-107	EPA 7470A	15612	EPA 7470A	15644
2610033003	HGWC-105	EPA 7470A	15612	EPA 7470A	15644
2610033001	HGWC-109	SM 2540C	14909		
2610033002	HGWC-107	SM 2540C	14909		
2610033003	HGWC-105	SM 2540C	14909		
2610033001	HGWC-109	EPA 300.0	14765		
2610033002	HGWC-107	EPA 300.0	14765		
2610033003	HGWC-105	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manor Road, Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: _____

Section B
Required Project Information:
 Report To: Jolu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Hammond AP 3 & 4
 Project #: _____

Section C
Invoice Information:
 Attention: SCSINVOICES@southernco.com
 Company Name: _____
 Address: _____
 Pace Quote: _____
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327.1.2
 Regulatory Agency: _____
 State / Location: GA

Page: 1 of 1

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
			START	END								
1	HGWC-109	G	10/2/18 14:13	10/2/18 14:28	10-02-2018	14:28	10/2/18 18:30	Nardos T. Lahur	10/2/18 18:30			
2	HGWC-107	G	10/2/18 15:20	10/2/18 15:35	10-02-2018	15:35	10/2/18 20:30	Betsy Lew	10/2/18 20:30			
3	HGWC-105	G	10/2/18 16:26	10/2/18 16:42	10-02-2018	16:42	10/3/18 10:00	Mites Nayyar / Pace	10/3/18 10:00			
4												
5												
6												
7												
8												
9												
10												
11												
12												

Requested Analysis Filtered (Y/N)

Residual Chrome (Y/N)	Y
TDS, Chloride Fluoride, Sulfate	X
Metals *	X
Other	
Methanol	
Na2S2O3	
NaOH	
HCl	
HNO3	3
H2SO4	3
Unpreserved	3
# OF CONTAINERS	4
SAMPLE TEMP AT COLLECTION	

RELINQUISHED BY / AFFILIATION: Nardos T. Lahur
 DATE: 10-02-2018
 TIME: 18:30

ACCEPTED BY / AFFILIATION: Betsy Lew
 DATE: 10/2/18
 TIME: 20:30

DATE Signed: 10-02-2018

DATE Signed: 10-02-2018

DATE Signed: 10-03-18 13:00

DATE Signed: 10-02-2018

W0#: 2610033

2610033

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Sample Condition Upon Receipt



Client Name: GA Power

Project # _____

WO# : 2610033
 PM: BM Due Date: 10/10/18
 CLIENT: CAPower-CCR

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 33

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/03/18 MR

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input 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>GW</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:** _____

October 26, 2018

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

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 2610034

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4
Pace Project No.: 2610034

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610034001	HGWC-109	Water	10/02/18 14:28	10/03/18 13:00
2610034002	HGWC-107	Water	10/02/18 15:35	10/03/18 13:00
2610034003	HGWC-105	Water	10/02/18 16:42	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610034001	HGWC-109	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610034002	HGWC-107	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610034003	HGWC-105	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

Sample: HGWC-109 **Lab ID: 2610034001** Collected: 10/02/18 14:28 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.225 ± 0.163 (0.252) C:91% T:NA	pCi/L	10/17/18 07:58	13982-63-3	
Radium-228	EPA 9320	-0.153 ± 0.290 (0.712) C:69% T:92%	pCi/L	10/16/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	0.225 ± 0.453 (0.964)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

Sample: HGWC-107 **Lab ID: 2610034002** Collected: 10/02/18 15:35 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.445 ± 0.247 (0.391) C:98% T:NA	pCi/L	10/17/18 07:58	13982-63-3	
Radium-228	EPA 9320	0.785 ± 0.440 (0.800) C:68% T:85%	pCi/L	10/16/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	1.23 ± 0.687 (1.19)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

Sample: HGWC-105 **Lab ID: 2610034003** Collected: 10/02/18 16:42 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.194 ± 0.154 (0.256) C:97% T:NA	pCi/L	10/17/18 07:58	13982-63-3	
Radium-228	EPA 9320	0.142 ± 0.376 (0.840) C:71% T:78%	pCi/L	10/16/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	0.336 ± 0.530 (1.10)	pCi/L	10/22/18 12:11	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

QC Batch: 315900

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610034001, 2610034002, 2610034003

METHOD BLANK: 1541949

Matrix: Water

Associated Lab Samples: 2610034001, 2610034002, 2610034003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610034001, 2610034002, 2610034003

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 2610034001, 2610034002, 2610034003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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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QUALIFIERS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 3&4

Pace Project No.: 2610034

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610034001	HGWC-109	EPA 9315	315900		
2610034002	HGWC-107	EPA 9315	315900		
2610034003	HGWC-105	EPA 9315	315900		
2610034001	HGWC-109	EPA 9320	315901		
2610034002	HGWC-107	EPA 9320	315901		
2610034003	HGWC-105	EPA 9320	315901		
2610034001	HGWC-109	Total Radium Calculation	317509		
2610034002	HGWC-107	Total Radium Calculation	317509		
2610034003	HGWC-105	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date:

Section B

Required Project Information:
 Report To: Joju Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS103-48606
 Project Name: Hammond AP 3 & 4
 Project #:

Section C

Invoice Information:
 Attention: SCSinVoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@ppacelabs.com
 Pace Profile #: 327.1.2
 Regulatory Agency:
 State / Location: GA

Page: 1 of 3

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
			START DATE	END DATE													
1	Drinking Water	DW	10/21/18 17:13	10/22/18 14:28	3	3	H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Metals * TDS Chloride, Fluoride, Sulfate Radium 226/228	Y								
2	Waste Water	WW	10/21/18 15:20	10/22/18 15:35	3	3			Y								
3	Product	P	10/21/18 16:26	10/22/18 16:42	3	3			Y								
4	Solid/Solid	SS															
5	Oil	OL															
6	Wipe	WP															
7	Air	AR															
8	Other	OT															
9	Tissue	TS															
10																	
11																	
12																	

ADDITIONAL COMMENTS

10-02-2018 1830 Nardos Tilahun
 10/2/18 2030 *leBlew*
 10/3/18 1000 *Mitte Nagon / Pace*
 10/03/18 190048 *M. Dalrymple*

RECEIVED BY / AFFILIATION

10/18/1830
 10/2/18 2030
 10/3/18 1000
 10/03/18 190048

TEMP in C

Received on

Ice (Y/N)

Custody Sealed (Y/N)

Cooler (Y/N)

Samples Intact (Y/N)

DATE SIGNED: 10-02-2018

SIGNATURE OF SAMPLER: DAN GIBBS

PRINT NAME OF SAMPLER: DAN GIBBS

SAMPLER NAME AND SIGNATURE

WO#: 2610034

2610034



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2610034**

PM: BM

Due Date: 10/31/18

CLIENT: CAPower-CCR

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 33

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/03/18 ma

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input 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>GW</u>				
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

October 15, 2018

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

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 2610112

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610112001	HGWC-117	Water	10/03/18 10:44	10/04/18 12:30
2610112002	HGWC-118	Water	10/03/18 11:54	10/04/18 12:30
2610112003	HGWC-101	Water	10/03/18 13:25	10/04/18 12:30
2610112004	HGWC-103	Water	10/03/18 14:40	10/04/18 12:30
2610112005	FD-03	Water	10/03/18 00:00	10/04/18 12:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610112001	HGWC-117	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610112002	HGWC-118	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610112003	HGWC-101	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610112004	HGWC-103	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610112005	FD-03	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4
Pace Project No.: 2610112

Sample: HGWC-117		Lab ID: 2610112001		Collected: 10/03/18 10:44		Received: 10/04/18 12:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 17:54	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 17:54	7440-38-2		
Barium	0.047	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 17:54	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 17:54	7440-41-7		
Boron	0.85	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 17:54	7440-42-8		
Cadmium	0.00079J	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 17:54	7440-43-9		
Calcium	68.0	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 18:00	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 17:54	7440-47-3		
Cobalt	0.0050J	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 17:54	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 17:54	7439-92-1		
Lithium	0.0021J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 17:54	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 17:54	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 17:54	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 17:54	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:03	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	337	mg/L	25.0	10.0	1		10/08/18 17:35			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	7.6	mg/L	0.25	0.024	1		10/08/18 23:05	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/08/18 23:05	16984-48-8		
Sulfate	169	mg/L	10.0	0.17	10		10/08/18 22:42	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4
Pace Project No.: 2610112

Sample: HGWC-118		Lab ID: 2610112002		Collected: 10/03/18 11:54		Received: 10/04/18 12:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 18:06	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 18:06	7440-38-2		
Barium	0.056	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 18:06	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 18:06	7440-41-7		
Boron	0.51	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 18:06	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 18:06	7440-43-9		
Calcium	77.1	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 18:12	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 18:06	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 18:06	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 18:06	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 18:06	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 18:06	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 18:06	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 18:06	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:05	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	328	mg/L	25.0	10.0	1		10/08/18 17:35			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	4.4	mg/L	0.25	0.024	1		10/08/18 23:50	16887-00-6		
Fluoride	0.12J	mg/L	0.30	0.029	1		10/08/18 23:50	16984-48-8		
Sulfate	91.5	mg/L	10.0	0.17	10		10/08/18 23:27	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Sample: HGWC-101 Lab ID: 2610112003 Collected: 10/03/18 13:25 Received: 10/04/18 12:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 18:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 18:17	7440-38-2	
Barium	0.041	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 18:17	7440-39-3	
Beryllium	0.000065J	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 18:17	7440-41-7	
Boron	0.092	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 18:17	7440-42-8	
Cadmium	0.00018J	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 18:17	7440-43-9	
Calcium	19.1J	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 18:23	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 18:17	7440-47-3	
Cobalt	0.0028J	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 18:17	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 18:17	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 18:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 18:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 18:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 18:17	7440-28-0	
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:13	7439-97-6	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	238	mg/L	25.0	10.0	1		10/08/18 17:47		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	5.8	mg/L	0.25	0.024	1		10/09/18 00:35	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 00:35	16984-48-8	
Sulfate	121	mg/L	10.0	0.17	10		10/09/18 00:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Sample: HGWC-103		Lab ID: 2610112004		Collected: 10/03/18 14:40		Received: 10/04/18 12:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 18:29	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 18:29	7440-38-2		
Barium	0.040	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 18:29	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 18:29	7440-41-7		
Boron	2.4	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 18:29	7440-42-8		
Cadmium	0.00078J	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 18:29	7440-43-9		
Calcium	85.3	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 18:34	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 18:29	7440-47-3		
Cobalt	0.0023J	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 18:29	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 18:29	7439-92-1		
Lithium	0.0016J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 18:29	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 18:29	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 18:29	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 18:29	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:15	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	582	mg/L	25.0	10.0	1		10/08/18 17:47			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	6.3	mg/L	0.25	0.024	1		10/09/18 01:21	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 01:21	16984-48-8		
Sulfate	381	mg/L	10.0	0.17	10		10/09/18 00:58	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Sample: FD-03		Lab ID: 2610112005		Collected: 10/03/18 00:00		Received: 10/04/18 12:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 18:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 18:52	7440-38-2	
Barium	0.047	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 18:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 18:52	7440-41-7	
Boron	0.87	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 18:52	7440-42-8	
Cadmium	0.00057J	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 18:52	7440-43-9	
Calcium	71.4	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 18:57	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 18:52	7440-47-3	
Cobalt	0.0046J	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 18:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 18:52	7439-92-1	
Lithium	0.0022J	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 18:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 18:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 18:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 18:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:17	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	366	mg/L	25.0	10.0	1		10/08/18 17:47		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.4	mg/L	0.25	0.024	1		10/09/18 03:59	16887-00-6	
Fluoride	0.10J	mg/L	0.30	0.029	1		10/09/18 03:59	16984-48-8	
Sulfate	157	mg/L	10.0	0.17	10		10/09/18 02:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

QC Batch: 15032

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610112001, 2610112002, 2610112003, 2610112004, 2610112005

METHOD BLANK: 67254

Matrix: Water

Associated Lab Samples: 2610112001, 2610112002, 2610112003, 2610112004, 2610112005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256

67257

Parameter	Units	269791027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4
Pace Project No.: 2610112

QC Batch: 15013 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610112001, 2610112002, 2610112003, 2610112004, 2610112005

METHOD BLANK: 67190 Matrix: Water
Associated Lab Samples: 2610112001, 2610112002, 2610112003, 2610112004, 2610112005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/11/18 17:43	
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43	
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43	
Beryllium	mg/L	ND	0.0030	0.000050	10/11/18 17:43	
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43	
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43	
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43	
Chromium	mg/L	ND	0.010	0.0016	10/11/18 17:43	
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43	
Lead	mg/L	ND	0.0050	0.00027	10/11/18 17:43	
Lithium	mg/L	ND	0.050	0.00097	10/11/18 17:43	
Molybdenum	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43	
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43	

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.097	97	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67194 67195

Parameter	Units	2610117002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Antimony	mg/L	ND	.1	.1	0.11	0.11	108	110	75-125	2	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Parameter	Units	67194		67195		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2610117002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20
Beryllium	mg/L	ND	.1	.1	0.096	0.096	96	96	75-125	0	20
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20 R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20 M6
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20
Lead	mg/L	ND	.1	.1	0.098	0.099	98	99	75-125	1	20
Lithium	mg/L	ND	.1	.1	0.099	0.097	98	97	75-125	1	20
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	109	108	75-125	1	20
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

QC Batch: 14909	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610112001, 2610112002	

LABORATORY CONTROL SAMPLE: 66853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 66854

Parameter	Units	2610027005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	699	1	10	

SAMPLE DUPLICATE: 66855

Parameter	Units	2610112002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	330	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4
Pace Project No.: 2610112

QC Batch: 14910 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610112003, 2610112004, 2610112005

LABORATORY CONTROL SAMPLE: 66856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 66857

Parameter	Units	2610112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	232	3	10	

SAMPLE DUPLICATE: 66858

Parameter	Units	2610117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	615	13	10	D6

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QUALITY CONTROL DATA

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

QC Batch: 14939 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2610112001, 2610112002, 2610112003, 2610112004, 2610112005

METHOD BLANK: 66933 Matrix: Water
 Associated Lab Samples: 2610112001, 2610112002, 2610112003, 2610112004, 2610112005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15	
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15	
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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QUALIFIERS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 3&4

Pace Project No.: 2610112

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610112001	HGWC-117	EPA 3005A	15013	EPA 6020B	15073
2610112002	HGWC-118	EPA 3005A	15013	EPA 6020B	15073
2610112003	HGWC-101	EPA 3005A	15013	EPA 6020B	15073
2610112004	HGWC-103	EPA 3005A	15013	EPA 6020B	15073
2610112005	FD-03	EPA 3005A	15013	EPA 6020B	15073
2610112001	HGWC-117	EPA 7470A	15032	EPA 7470A	15116
2610112002	HGWC-118	EPA 7470A	15032	EPA 7470A	15116
2610112003	HGWC-101	EPA 7470A	15032	EPA 7470A	15116
2610112004	HGWC-103	EPA 7470A	15032	EPA 7470A	15116
2610112005	FD-03	EPA 7470A	15032	EPA 7470A	15116
2610112001	HGWC-117	SM 2540C	14909		
2610112002	HGWC-118	SM 2540C	14909		
2610112003	HGWC-101	SM 2540C	14910		
2610112004	HGWC-103	SM 2540C	14910		
2610112005	FD-03	SM 2540C	14910		
2610112001	HGWC-117	EPA 300.0	14939		
2610112002	HGWC-118	EPA 300.0	14939		
2610112003	HGWC-101	EPA 300.0	14939		
2610112004	HGWC-103	EPA 300.0	14939		
2610112005	FD-03	EPA 300.0	14939		

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: 2610112
PM: BM Due Date: 10/11/18
CLIENT: GAPower-CCR

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 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.0C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6C

Date and Initials of person examining contents: 10/4/18 cm

Table with 16 rows and 3 columns. Columns: Question, Yes/No/N/A checkboxes, and Numbered item. Rows include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: Field Data Required? Y / N
Person Contacted: Date/Time:
Comments/ Resolution:

Project Manager Review: Date:

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

November 05, 2018

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

RE: Project: Plant Hammond AP 3&4
Pace Project No.: 2610113

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610113001	HGWC-117	Water	10/03/18 10:44	10/04/18 12:30
2610113002	HGWC-118	Water	10/03/18 11:54	10/04/18 12:30
2610113003	HGWC-101	Water	10/03/18 13:25	10/04/18 12:30
2610113004	HGWC-103	Water	10/03/18 14:40	10/04/18 12:30
2610113005	FD-03	Water	10/03/18 00:00	10/04/18 12:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610113001	HGWC-117	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610113002	HGWC-118	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610113003	HGWC-101	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610113004	HGWC-103	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610113005	FD-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Sample: HGWC-117		Lab ID: 2610113001	Collected: 10/03/18 10:44	Received: 10/04/18 12:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.198 ± 0.190 (0.352)		pCi/L	10/25/18 08:03	13982-63-3	
		C:92% T:NA					
Radium-228	EPA 9320	-0.531 ± 0.851 (2.02)		pCi/L	10/24/18 20:04	15262-20-1	
		C:67% T:86%					
Total Radium	Total Radium Calculation	0.198 ± 1.04 (2.37)		pCi/L	11/01/18 11:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Sample: HGWC-118 **Lab ID: 2610113002** Collected: 10/03/18 11:54 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.255 ± 0.208 (0.362) C:93% T:NA	pCi/L	10/25/18 08:03	13982-63-3	
Radium-228	EPA 9320	1.34 ± 0.926 (1.81) C:58% T:92%	pCi/L	10/24/18 20:04	15262-20-1	
Total Radium	Total Radium Calculation	1.60 ± 1.13 (2.17)	pCi/L	11/01/18 11:41	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Sample: HGWC-101 **Lab ID: 2610113003** Collected: 10/03/18 13:25 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.302 ± 0.211 (0.325) C:93% T:NA	pCi/L	10/25/18 08:03	13982-63-3	
Radium-228	EPA 9320	-0.150 ± 0.969 (2.24) C:62% T:81%	pCi/L	10/24/18 20:04	15262-20-1	
Total Radium	Total Radium Calculation	0.302 ± 1.18 (2.57)	pCi/L	11/01/18 11:41	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Sample: HGWC-103 **Lab ID: 2610113004** Collected: 10/03/18 14:40 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.111 ± 0.168 (0.366) C:94% T:NA	pCi/L	10/25/18 08:03	13982-63-3	
Radium-228	EPA 9320	-0.228 ± 0.680 (1.60) C:66% T:99%	pCi/L	10/24/18 20:04	15262-20-1	
Total Radium	Total Radium Calculation	0.111 ± 0.848 (1.97)	pCi/L	11/01/18 11:41	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Sample: FD-03 **Lab ID: 2610113005** Collected: 10/03/18 00:00 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.156 ± 0.175 (0.340) C:87% T:NA	pCi/L	10/25/18 08:03	13982-63-3	
Radium-228	EPA 9320	1.10 ± 0.521 (0.836) C:72% T:78%	pCi/L	11/01/18 16:38	15262-20-1	
Total Radium	Total Radium Calculation	1.26 ± 0.696 (1.18)	pCi/L	11/05/18 12:00	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

QC Batch:	316709	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2610113001, 2610113002, 2610113003, 2610113004		

METHOD BLANK:	1545548	Matrix:	Water
Associated Lab Samples:	2610113001, 2610113002, 2610113003, 2610113004		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.551 ± 0.333 (0.601) C:73% T:90%	pCi/L	10/24/18 16:02	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

QC Batch: 318171

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610113005

METHOD BLANK: 1551991

Matrix: Water

Associated Lab Samples: 2610113005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.652 ± 0.370 (0.662) C:74% T:87%	pCi/L	11/01/18 16:36	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

QC Batch: 317135

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2610113001, 2610113002, 2610113003, 2610113004, 2610113005

METHOD BLANK: 1547224

Matrix: Water

Associated Lab Samples: 2610113001, 2610113002, 2610113003, 2610113004, 2610113005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0781 ± 0.155 (0.358) C:99% T:NA	pCi/L	10/25/18 08:03	

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.

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QUALIFIERS

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP 3&4

Pace Project No.: 2610113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610113001	HGWC-117	EPA 9315	317135		
2610113002	HGWC-118	EPA 9315	317135		
2610113003	HGWC-101	EPA 9315	317135		
2610113004	HGWC-103	EPA 9315	317135		
2610113005	FD-03	EPA 9315	317135		
2610113001	HGWC-117	EPA 9320	316709		
2610113002	HGWC-118	EPA 9320	316709		
2610113003	HGWC-101	EPA 9320	316709		
2610113004	HGWC-103	EPA 9320	316709		
2610113005	FD-03	EPA 9320	318171		
2610113001	HGWC-117	Total Radium Calculation	318821		
2610113002	HGWC-118	Total Radium Calculation	318821		
2610113003	HGWC-101	Total Radium Calculation	318821		
2610113004	HGWC-103	Total Radium Calculation	318821		
2610113005	FD-03	Total Radium Calculation	319181		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: Georgia Power - Coal Combustion Residuals, Address: 2480 Maner Road, Atlanta, GA 30339, Email: jakraham@southernco.com, Phone: (404) 506-7239, Fax: [blank], Requested Due Date: **STANDARD TAT**

Section B Required Project Information: Report To: Joju Abraham / Lauren Petty, Copy To: Geosyntec, Purchase Order #: SCS10348506, Project Name: Hammond AP 3 & 4, Project #: **GW06B1**

Section C Invoice Information: Attention: SCSINVOICES@southernco.com, Company Name: [blank], Address: [blank], Pace Quote: [blank], Pace Project Manager: betsy.mcdaniel@pacelabs.com, Pace Profile #: 327.1.2, State/Location: GA, Regulatory Agency: [blank]

Page: 1 Of 1

ITEM #	MATRIX CODE DW: Drinking Water WW: Wastewater PW: Process Water PS: Product SS: Soil/Solid OI: Oil WI: Wipe AL: Air OT: Other TI: Tissue	SAMPLE ID One Character per box. (A-Z, 0-9 / . -)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		DATE	TIME	DATE	TIME	# OF CONTAINERS	PRESERVATIVES Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	ANALYSES TEST Y/N	Metals *	TDS Chloride Fluoride Sulfate	Radium 226/228	Residual Chlorine (Y/N)
				START DATE	END DATE											
1		H6WC-117	G	10/21	10/21	10:44	10:44	10/21/18	17:25	4	3	X	X	X	N	1
2		H6WC-118	G	10/21	10/21	11:54	11:54	10/21/18	17:25	4	3	X	X	X	N	2
3		H6WC-101	G	10/28	10/28	13:25	13:25	10/28/18	17:45	4	3	X	X	X	N	3
4		H6WC-103	G	10/28	10/28	14:40	14:40	10/28/18	17:45	4	3	X	X	X	N	4
5		FD-03	G	10/28	10/28	-	-	10/28/18	17:25	4	3	X	X	X	N	5
6																
7																
8																
9																
10																
11																
12																

OG - 10-03-2018

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP °C	Received on	Intact (Y/N)	Samples (Y/N)	Cooler (Y/N)	Sealed (Y/N)	Custody (Y/N)
JAN GEBBS	Molic Muehlen	10/23/2018	17:25	Molic Muehlen	10/23/18	17:25							
Molic Muehlen	Nardos Tilahun	10/23/2018	17:45	Nardos Tilahun	10/23/18	17:45							
Nardos Tilahun	WTS Law	10/23/18	19:30	WTS Law	10/23/18	19:30							
WTS Law	Mike Nguyen/Pace	10/24/18	10:00	Mike Nguyen/Pace	10/24/18	10:00							
SAMPLER NAME AND SIGNATURE	PRINT Name of SAMPLER:	DATE SIGNED:		DATE SIGNED:		TEMP °C		Received on		Intact (Y/N)		Samples (Y/N)	
<i>[Signature]</i>	JAN GEBBS	10-23-2018		10-23-2018		20		10/23/18		Y		Y	

WO#: 2610113

2610113

Client Name: GA Power

WO#: **2610113**

PM: BM

Due Date: 11/01/18

CLIENT: **GA Power-CCR**

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 082

Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.0°C

Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 10/4/18 cm

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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

October 09, 2018

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

RE: Project: Plant Hammond - GW6581
Pace Project No.: 269953

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - GW6581

Pace Project No.: 269953

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond - GW6581

Pace Project No.: 269953

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269953001	FB-01	Water	10/01/18 18:20	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - GW6581
Pace Project No.: 269953

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269953001	FB-01	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - GW6581

Pace Project No.: 269953

Sample: FB-01		Lab ID: 269953001		Collected: 10/01/18 18:20		Received: 10/02/18 12:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/04/18 11:09	10/09/18 00:07	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/04/18 11:09	10/09/18 00:07	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/04/18 11:09	10/09/18 00:07	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/04/18 11:09	10/09/18 00:07	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/04/18 11:09	10/09/18 00:07	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/04/18 11:09	10/09/18 00:07	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/04/18 11:09	10/09/18 00:07	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/04/18 11:09	10/09/18 00:07	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/04/18 11:09	10/09/18 00:07	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/04/18 11:09	10/09/18 00:07	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/04/18 11:09	10/09/18 00:07	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/04/18 11:09	10/09/18 00:07	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:07	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/04/18 11:09	10/09/18 00:07	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/04/18 11:09	10/09/18 00:07	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/04/18 11:09	10/09/18 00:07	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/04/18 11:09	10/09/18 00:07	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/04/18 11:09	10/09/18 00:07	7440-62-2		
Zinc	0.0035J	mg/L	0.010	0.0021	1	10/04/18 11:09	10/09/18 00:07	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/09/18 10:40	10/09/18 14:29	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		10/03/18 17:16			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.064J	mg/L	0.25	0.024	1		10/04/18 23:36	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/04/18 23:36	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/04/18 23:36	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581

Pace Project No.: 269953

QC Batch: 14995	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 269953001	

METHOD BLANK: 67141 Matrix: Water
Associated Lab Samples: 269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/09/18 13:40	

LABORATORY CONTROL SAMPLE: 67142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0027	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67143 67144

Parameter	Units	269871003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0022	101	87	75-125	15	20	

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581

Pace Project No.: 269953

QC Batch: 14744	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
Associated Lab Samples: 269953001	

METHOD BLANK: 65855 Matrix: Water

Associated Lab Samples: 269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/08/18 22:41	
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 22:41	
Barium	mg/L	ND	0.010	0.00078	10/08/18 22:41	
Beryllium	mg/L	ND	0.0030	0.000050	10/08/18 22:41	
Boron	mg/L	ND	0.040	0.0039	10/08/18 22:41	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 22:41	
Calcium	mg/L	ND	0.50	0.014	10/08/18 22:41	
Chromium	mg/L	ND	0.010	0.0016	10/08/18 22:41	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 22:41	
Copper	mg/L	ND	0.025	0.0013	10/08/18 22:41	
Lead	mg/L	ND	0.0050	0.00027	10/08/18 22:41	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 22:41	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Nickel	mg/L	ND	0.010	0.00095	10/08/18 22:41	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 22:41	
Silver	mg/L	ND	0.010	0.00095	10/08/18 22:41	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 22:41	
Vanadium	mg/L	ND	0.010	0.0019	10/08/18 22:41	
Zinc	mg/L	0.0027J	0.010	0.0021	10/08/18 22:41	

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.10	105	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.10	104	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Copper	mg/L	.1	0.10	101	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Nickel	mg/L	.1	0.099	99	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Silver	mg/L	.1	0.10	101	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581
Pace Project No.: 269953

LABORATORY CONTROL SAMPLE: 65856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	104	80-120	
Zinc	mg/L	.1	0.11	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65857 65858

Parameter	Units	269951003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Antimony	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	102	75-125	3	20	
Barium	mg/L	0.025	.1	.1	0.13	0.12	101	100	75-125	0	20	
Beryllium	mg/L	ND	.1	.1	0.095	0.094	95	94	75-125	1	20	
Boron	mg/L	0.0042J	1	1	0.93	0.91	93	91	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Calcium	mg/L	6.2	1	1	7.0	7.0	76	74	75-125	0	20	M1
Chromium	mg/L	0.0023J	.1	.1	0.10	0.10	102	102	75-125	0	20	
Cobalt	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Copper	mg/L	ND	.1	.1	0.099	0.10	98	102	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Lithium	mg/L	0.0010J	.1	.1	0.095	0.094	94	93	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	0.0024J	.1	.1	0.11	0.10	103	98	75-125	5	20	
Silver	mg/L	ND	.1	.1	0.10	0.10	103	100	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	3	20	
Vanadium	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	1	20	
Zinc	mg/L	0.0052J	.1	.1	0.11	0.11	101	103	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581

Pace Project No.: 269953

QC Batch: 14690	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 269953001	

LABORATORY CONTROL SAMPLE: 65578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 65579

Parameter	Units	269910001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2490	2740	10	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - GW6581
Pace Project No.: 269953

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 269953001

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001 Result	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	2.2	10	10	12.4	12.4	102	101	90-110	0	15		
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	0	15		
Sulfate	mg/L	1.0	10	10	11.3	11.1	102	100	90-110	2	15		

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - GW6581

Pace Project No.: 269953

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - GW6581
Pace Project No.: 269953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269953001	FB-01	EPA 3005A	14744	EPA 6020B	14814
269953001	FB-01	EPA 7470A	14995	EPA 7470A	15035
269953001	FB-01	SM 2540C	14690		
269953001	FB-01	EPA 300.0	14765		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 269953

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

PM: BM

Due Date: 10/09/18

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

CLIENT: CAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.5

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/02/18 [initials]

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

October 25, 2018

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

RE: Project: Plant Hammond - GW6581
Pace Project No.: 269954

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - GW6581

Pace Project No.: 269954

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269954001	FB-01	Water	10/01/18 18:20	10/02/18 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - GW6581

Pace Project No.: 269954

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269954001	FB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

Sample: FB-01 **Lab ID: 269954001** Collected: 10/01/18 18:20 Received: 10/02/18 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.148 ± 0.142 (0.264) C:99% T:NA	pCi/L	10/17/18 08:08	13982-63-3	
Radium-228	EPA 9320	0.422 ± 0.333 (0.649) C:72% T:81%	pCi/L	10/16/18 11:24	15262-20-1	
Total Radium	Total Radium Calculation	0.570 ± 0.475 (0.913)	pCi/L	10/22/18 12:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

QC Batch: 315900

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 269954001

METHOD BLANK: 1541949

Matrix: Water

Associated Lab Samples: 269954001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.141 (0.260) C:98% T:NA	pCi/L	10/17/18 08:08	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - GW6581

Pace Project No.: 269954

QC Batch: 315901

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 269954001

METHOD BLANK: 1541950

Matrix: Water

Associated Lab Samples: 269954001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.315 (0.619) C:82% T:86%	pCi/L	10/16/18 11:20	

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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QUALIFIERS

Project: Plant Hammond - GW6581
Pace Project No.: 269954

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - GW6581
Pace Project No.: 269954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269954001	FB-01	EPA 9315	315900		
269954001	FB-01	EPA 9320	315901		
269954001	FB-01	Total Radium Calculation	317509		

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 0.5 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

WO# : 269954

PM: BM Due Date: 10/30/18

CLIENT: CAPower-CCR

Date and Initials of person examining contents: 10/02/18 MA

		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>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

Project Manager Review: _____ **Date:** _____

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

October 10, 2018

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

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610031001	EB-01	Water	10/02/18 18:15	10/03/18 13:00
2610031002	FB-02	Water	10/02/18 18:00	10/03/18 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610031001	EB-01	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610031002	FB-02	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Sample: EB-01		Lab ID: 2610031001		Collected: 10/02/18 18:15		Received: 10/03/18 13:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 19:49	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:49	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:49	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 19:49	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 19:49	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 19:49	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/05/18 13:39	10/08/18 19:49	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 19:49	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:49	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/05/18 13:39	10/08/18 19:49	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 19:49	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:49	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:49	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:49	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:49	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:49	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:49	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:49	7440-62-2		
Zinc	0.0046J	mg/L	0.010	0.0021	1	10/05/18 13:39	10/08/18 19:49	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/09/18 10:40	10/09/18 14:43	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	12.0J	mg/L	25.0	10.0	1		10/08/18 17:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.089J	mg/L	0.25	0.024	1		10/05/18 04:46	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 04:46	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/05/18 04:46	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

Sample: FB-02		Lab ID: 2610031002		Collected: 10/02/18 18:00	Received: 10/03/18 13:00	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/05/18 13:39	10/08/18 19:55	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/05/18 13:39	10/08/18 19:55	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/05/18 13:39	10/08/18 19:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/05/18 13:39	10/08/18 19:55	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/05/18 13:39	10/08/18 19:55	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/05/18 13:39	10/08/18 19:55	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/05/18 13:39	10/08/18 19:55	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/05/18 13:39	10/08/18 19:55	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/05/18 13:39	10/08/18 19:55	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/05/18 13:39	10/08/18 19:55	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/05/18 13:39	10/08/18 19:55	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/05/18 13:39	10/08/18 19:55	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:55	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:55	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/05/18 13:39	10/08/18 19:55	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/05/18 13:39	10/08/18 19:55	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/18 13:39	10/08/18 19:55	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/05/18 13:39	10/08/18 19:55	7440-62-2		
Zinc	0.0032J	mg/L	0.010	0.0021	1	10/05/18 13:39	10/08/18 19:55	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/09/18 10:40	10/09/18 14:50	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	14.0J	mg/L	25.0	10.0	1		10/08/18 17:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.073J	mg/L	0.25	0.024	1		10/05/18 05:06	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/05/18 05:06	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/05/18 05:06	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

QC Batch: 14995 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2610031001, 2610031002

METHOD BLANK: 67141 Matrix: Water
Associated Lab Samples: 2610031001, 2610031002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/09/18 13:40	

LABORATORY CONTROL SAMPLE: 67142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0027	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67143 67144

Parameter	Units	269871003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0022	101	87	75-125	15	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

QC Batch: 14855 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610031001, 2610031002

METHOD BLANK: 66522 Matrix: Water
Associated Lab Samples: 2610031001, 2610031002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/08/18 18:29	
Arsenic	mg/L	ND	0.0050	0.00057	10/08/18 18:29	
Barium	mg/L	ND	0.010	0.00078	10/08/18 18:29	
Beryllium	mg/L	ND	0.0030	0.000050	10/08/18 18:29	
Boron	mg/L	ND	0.040	0.0039	10/08/18 18:29	
Cadmium	mg/L	ND	0.0010	0.000093	10/08/18 18:29	
Calcium	mg/L	ND	0.50	0.014	10/08/18 18:29	
Chromium	mg/L	ND	0.010	0.0016	10/08/18 18:29	
Cobalt	mg/L	ND	0.010	0.00052	10/08/18 18:29	
Copper	mg/L	ND	0.025	0.0013	10/08/18 18:29	
Lead	mg/L	ND	0.0050	0.00027	10/08/18 18:29	
Lithium	mg/L	ND	0.050	0.00097	10/08/18 18:29	
Molybdenum	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Nickel	mg/L	ND	0.010	0.00095	10/08/18 18:29	
Selenium	mg/L	ND	0.010	0.0014	10/08/18 18:29	
Silver	mg/L	ND	0.010	0.00095	10/08/18 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/08/18 18:29	
Vanadium	mg/L	ND	0.010	0.0019	10/08/18 18:29	
Zinc	mg/L	0.0030J	0.010	0.0021	10/08/18 18:29	

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	106	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	102	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.10	103	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.10	102	80-120	
Lithium	mg/L	.1	0.11	110	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.099	99	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Silver	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

LABORATORY CONTROL SAMPLE: 66523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	104	80-120	
Zinc	mg/L	.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66524 66525

Parameter	Units	2610033001		MS	MSD	MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	mg/L	ND	.1	.1	0.11	0.10	109	102	75-125	7	20		
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.10	104	102	75-125	2	20		
Barium	mg/L	0.089	.1	.1	0.19	0.18	102	94	75-125	4	20		
Beryllium	mg/L	ND	.1	.1	0.095	0.094	95	94	75-125	1	20		
Boron	mg/L	0.43	1	1	1.3	1.3	89	90	75-125	0	20		
Cadmium	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	1	20		
Calcium	mg/L	42.5	1	1	41.5	42.3	-94	-14	75-125	2	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	3	20		
Cobalt	mg/L	0.00081J	.1	.1	0.099	0.096	98	95	75-125	3	20		
Copper	mg/L	ND	.1	.1	0.098	0.095	98	95	75-125	4	20		
Lead	mg/L	ND	.1	.1	0.10	0.097	100	97	75-125	3	20		
Lithium	mg/L	0.0013J	.1	.1	0.095	0.096	93	95	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	106	101	75-125	5	20		
Nickel	mg/L	ND	.1	.1	0.098	0.096	97	96	75-125	2	20		
Selenium	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	2	20		
Silver	mg/L	ND	.1	.1	0.10	0.098	101	98	75-125	3	20		
Thallium	mg/L	ND	.1	.1	0.10	0.096	101	96	75-125	5	20		
Vanadium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	2	20		
Zinc	mg/L	0.0041J	.1	.1	0.11	0.10	102	99	75-125	3	20		

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

QC Batch: 14765 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610031001, 2610031002

METHOD BLANK: 65945 Matrix: Water
Associated Lab Samples: 2610031001, 2610031002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/04/18 21:11	
Fluoride	mg/L	ND	0.30	0.029	10/04/18 21:11	
Sulfate	mg/L	ND	1.0	0.017	10/04/18 21:11	

LABORATORY CONTROL SAMPLE: 65946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65947 65948

Parameter	Units	269951001		65948		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Chloride	mg/L	2.2	10	12.4	12.4	102	101	90-110	0	15			
Fluoride	mg/L	ND	10	10.4	10.3	104	103	90-110	0	15			
Sulfate	mg/L	1.0	10	11.3	11.1	102	100	90-110	2	15			

MATRIX SPIKE SAMPLE: 65949

Parameter	Units	269951002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.6	10	15.5	99	90-110	
Fluoride	mg/L	ND	10	10.4	104	90-110	
Sulfate	mg/L	0.52J	10	10.7	101	90-110	

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610031

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610031

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610031001	EB-01	EPA 3005A	14855	EPA 6020B	14882
2610031002	FB-02	EPA 3005A	14855	EPA 6020B	14882
2610031001	EB-01	EPA 7470A	14995	EPA 7470A	15035
2610031002	FB-02	EPA 7470A	14995	EPA 7470A	15035
2610031001	EB-01	SM 2540C	14909		
2610031002	FB-02	SM 2540C	14909		
2610031001	EB-01	EPA 300.0	14765		
2610031002	FB-02	EPA 300.0	14765		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Marner Road, Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: _____

Section B
Required Project Information:
 Report To: Joy Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Huffaker Road
 Project #: _____

Section C
Invoice Information:
 Attention: SCSINVOICES@southernco.com
 Company Name: _____
 Address: _____
 Pace Quote: _____
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 328 3
 State / Location: GA
 Regulatory Agency: _____

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analyses Test	Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)
			START DATE	START TIME			END DATE	END TIME				Y/N	Y/N	
1	Drinking Water	DW	10/21/18	1805	G	WT	10/21/18	1815	4	Unpreserved	Metals (App. III + State)	N	N	
2	Waste Water	WW	10/21/18	1750	G	WT	10/21/18	1800	3	NaOH	TDS Chloride, Fluoride, Sulfate	N	N	
3	Spill/Solid	SL								HCl	Metals (App IV)**	N	N	
4	Wipe	WP								HNO3				
5	Other	OT								H2SO4				
6	Other	OT								Na2S2O3				
7	Tissue	TS								Mehtanol				
8										Other				
9														
10														
11														
12														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Medicia Moshes	10/21/18	1825	Nardos Titahua	10/21/18	1830	Sealed, Cooled, Custody (Y/N), Received on Ice (Y/N)
** Metals App IV: Li, Hg, Mo	Nardos Titahua	10/21/18	2030	Lea Law	10/21/18	2035	
	Lea Law	10/21/18	1000	Medicia Moshes/Pace	10/21/18	1000	
				Medicia Moshes	10/21/18	1300	

WO#: 2610031

2610031

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Noelia Moshes
 SIGNATURE of SAMPLER: Noelia Moshes
 DATE Signed: 10/21/18



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: 2610031

PM: BM Due Date: 10/10/18

CLIENT: GA Power-CCR

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 33 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/03/18 MA

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>GW</u>				
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

October 26, 2018

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

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610032001	EB-01	Water	10/02/18 18:15	10/03/18 13:00
2610032002	FB-02	Water	10/02/18 18:00	10/03/18 13:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610032001	EB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610032002	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

Sample: EB-01 **Lab ID: 2610032001** Collected: 10/02/18 18:15 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.144 ± 0.145 (0.277) C:93% T:NA	pCi/L	10/17/18 10:01	13982-63-3	
Radium-228	EPA 9320	0.169 ± 0.285 (0.620) C:74% T:84%	pCi/L	10/18/18 16:10	15262-20-1	
Total Radium	Total Radium Calculation	0.313 ± 0.430 (0.897)	pCi/L	10/22/18 12:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

Sample: FB-02 **Lab ID: 2610032002** Collected: 10/02/18 18:00 Received: 10/03/18 13:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.313 ± 0.257 (0.436) C:96% T:NA	pCi/L	10/17/18 10:01	13982-63-3	
Radium-228	EPA 9320	0.521 ± 0.421 (0.842) C:75% T:82%	pCi/L	10/18/18 16:24	15262-20-1	
Total Radium	Total Radium Calculation	0.834 ± 0.678 (1.28)	pCi/L	10/22/18 12:11	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

QC Batch: 315903

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610032001, 2610032002

METHOD BLANK: 1541952

Matrix: Water

Associated Lab Samples: 2610032001, 2610032002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.882 ± 0.409 (0.676) C:77% T:84%	pCi/L	10/18/18 16:11	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610032

QC Batch:	315902	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2610032001, 2610032002		

METHOD BLANK:	1541951	Matrix:	Water
Associated Lab Samples:	2610032001, 2610032002		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0238 ± 0.0883 (0.229) C:97% T:NA	pCi/L	10/17/18 10:01	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610032

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610032001	EB-01	EPA 9315	315902		
2610032002	FB-02	EPA 9315	315902		
2610032001	EB-01	EPA 9320	315903		
2610032002	FB-02	EPA 9320	315903		
2610032001	EB-01	Total Radium Calculation	317509		
2610032002	FB-02	Total Radium Calculation	317509		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To	Joju Abraham / Lauren Petty	Attention	SCSinvoices@southernco.com
Address	2480 Manner Road Atlanta, GA 30339	Copy To	Geosyntec	Company Name	
Email	jabraham@southernco.com	Purchase Order #	SCS10348606	Pace Quote	
Phone	(404)506-7239	Project Name	Plant Hammond - Huffaker Road	Pace Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date		Project #		Pace Profile #	3283
Regulatory Agency			State / Location		
			GA		

#	ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)	SAMPLE CONDITIONS
				START	END						DATE	TIME		
1	FB-01	Drinking Water	DW	10/12/18	1805	G	WT	4	H2SO4	Metals (App. III + State) *	Y	2		
2	FB-02	Drinking Water	DW	10/12/18	1750	G	WT	4	HCl	TDS, Chloride, Fluoride, Sulfate	Y	2		
3		Water	WW	10/12/18	1815	C		3	NaOH	Metals (App IV) **	Y	2		
4		Water	WW	10/12/18	1800	C		3	NaOH		Y	2		
5		Product	P						HNO3					
6		Solid	SL						HNO3					
7		Wipe	WP						H2SO4					
8		Air	AR						Unpreserved					
9		Other	OT											
10		Tissue	TS											

RELEASING BY/AFFILIATION	DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Custody	Sealed	Cooler (Y/N)	Samples Intact (Y/N)
Melicia Myshyn	10/12/18	1820	Nardos Tilahun	10/2/18	1830							
Nardos Tilahun	10/2/18	2030	EST Low	10/2/18	2030							
EST Low	10/3/18	1000	Mitra Nagam/Pace	10/2/18	1000							
	10/3/18	1300	Madhavan	10/3/18	1300							

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Noelia Moskus
 SIGNATURE of SAMPLER: Noelia Moskus
 DATE Signed: 10/02/18

WO# : 2610032

2610032



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO# : 2610032
PM: BM Due Date: 10/31/18
CLIENT: GAPower-CCR

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 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/31/18 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 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>GW</u>				
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

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SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610116001	FB-03	Water	10/03/18 16:49	10/04/18 12:30
2610116002	EB-02	Water	10/03/18 17:01	10/04/18 12:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610116001	FB-03	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610116002	EB-02	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

Sample: FB-03		Lab ID: 2610116001		Collected: 10/03/18 16:49		Received: 10/04/18 12:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 20:00	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:00	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:00	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 20:00	7440-41-7		
Boron	0.0048J	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:00	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:00	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 14:10	10/11/18 20:00	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 20:00	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:00	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 20:00	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 20:00	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:00	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:00	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:00	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:00	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:00	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:00	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:00	7440-62-2		
Zinc	0.0026J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 20:00	7440-66-6		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:29	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	15.0J	mg/L	25.0	10.0	1		10/08/18 17:48			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.071J	mg/L	0.25	0.024	1		10/09/18 07:23	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 07:23	16984-48-8		
Sulfate	0.056J	mg/L	1.0	0.017	1		10/09/18 07:23	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Sample: EB-02		Lab ID: 2610116002		Collected: 10/03/18 17:01		Received: 10/04/18 12:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 20:06	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:06	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:06	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 20:06	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:06	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:06	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 14:10	10/11/18 20:06	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 20:06	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:06	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 20:06	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 20:06	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:06	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:06	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:06	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:06	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:06	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:06	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:06	7440-62-2		
Zinc	0.0029J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 20:06	7440-66-6		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:32	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.098J	mg/L	0.25	0.024	1		10/09/18 09:16	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 09:16	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/09/18 09:16	14808-79-8		

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

QC Batch: 15032

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 67254

Matrix: Water

Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256

67257

Parameter	Units	67256		67257		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20

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

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

QC Batch: 15013 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 67190 Matrix: Water
Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/11/18 17:43	
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43	
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43	
Beryllium	mg/L	ND	0.0030	0.000050	10/11/18 17:43	
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43	
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43	
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43	
Chromium	mg/L	ND	0.010	0.0016	10/11/18 17:43	
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43	
Copper	mg/L	ND	0.025	0.0013	10/11/18 17:43	
Lead	mg/L	ND	0.0050	0.00027	10/11/18 17:43	
Lithium	mg/L	ND	0.050	0.00097	10/11/18 17:43	
Molybdenum	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Nickel	mg/L	ND	0.010	0.00095	10/11/18 17:43	
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43	
Silver	mg/L	ND	0.010	0.00095	10/11/18 17:43	
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43	
Vanadium	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Zinc	mg/L	ND	0.010	0.0021	10/11/18 17:43	

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	101	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.097	97	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Nickel	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.097	97	80-120	
Thallium	mg/L	.1	0.098	98	80-120	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	100	80-120	
Zinc	mg/L	.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67194 67195

Parameter	Units	2610117002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	
Antimony	mg/L	ND	.1	.1	0.11	0.11	108	110	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.096	96	96	75-125	0	20	
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20	R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20	
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20	M6
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.10	0.096	100	96	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.098	0.099	98	99	75-125	1	20	
Lithium	mg/L	ND	.1	.1	0.099	0.097	98	97	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	109	108	75-125	1	20	
Nickel	mg/L	0.0024J	.1	.1	0.10	0.10	101	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	
Silver	mg/L	ND	.1	.1	0.097	0.097	97	97	75-125	0	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	105	106	75-125	1	20	
Zinc	mg/L	0.0034J	.1	.1	0.10	0.10	98	99	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

QC Batch: 14910	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610116001	

LABORATORY CONTROL SAMPLE: 66856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 66857

Parameter	Units	2610112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	232	3	10	

SAMPLE DUPLICATE: 66858

Parameter	Units	2610117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	615	13	10 D6	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

QC Batch: 14939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	0.25	0.024	10/08/18 16:40	
Fluoride	mg/L	ND	0.30	0.029	10/08/18 16:40	
Sulfate	mg/L	ND	1.0	0.017	10/08/18 16:40	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001		66936		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15		
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15		
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15	M1	

MATRIX SPIKE SAMPLE: 66937

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610116

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610116001	FB-03	EPA 3005A	15013	EPA 6020B	15073
2610116002	EB-02	EPA 3005A	15013	EPA 6020B	15073
2610116001	FB-03	EPA 7470A	15032	EPA 7470A	15116
2610116002	EB-02	EPA 7470A	15032	EPA 7470A	15116
2610116001	FB-03	SM 2540C	14910		
2610116001	FB-03	EPA 300.0	14939		
2610116002	EB-02	EPA 300.0	14939		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 2610116
PM: BM Due Date: 10/11/18
CLIENT: CAPower-CCR

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 _____ Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2°C Biological Tissue is Frozen: Yes No

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

Date and Initials of person examining contents: 10/04/18 MR

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

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

October 29, 2018

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

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610118

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610118

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610118001	FB-03	Water	10/03/18 16:49	10/04/18 12:30
2610118002	EB-02	Water	10/03/18 17:01	10/04/18 12:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2610118001	FB-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2610118002	EB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Sample: FB-03 **Lab ID: 2610118001** Collected: 10/03/18 16:49 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0651 ± 0.149 (0.353) C:96% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.355 ± 0.346 (0.706) C:71% T:82%	pCi/L	10/19/18 14:21	15262-20-1	
Total Radium	Total Radium Calculation	0.420 ± 0.495 (1.06)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Sample: EB-02 **Lab ID: 2610118002** Collected: 10/03/18 17:01 Received: 10/04/18 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0323 ± 0.0875 (0.217) C:97% T:NA	pCi/L	10/17/18 09:37	13982-63-3	
Radium-228	EPA 9320	0.0225 ± 0.322 (0.748) C:74% T:84%	pCi/L	10/19/18 14:21	15262-20-1	
Total Radium	Total Radium Calculation	0.0548 ± 0.410 (0.965)	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

QC Batch: 316253

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2610118001, 2610118002

METHOD BLANK: 1543390

Matrix: Water

Associated Lab Samples: 2610118001, 2610118002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.293 ± 0.309 (0.637) C:77% T:81%	pCi/L	10/19/18 11:16	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

QC Batch:	316252	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2610118001, 2610118002		

METHOD BLANK:	1543389	Matrix:	Water
Associated Lab Samples:	2610118001, 2610118002		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.132 ± 0.137 (0.260) C:96% T:NA	pCi/L	10/17/18 09:36	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610118

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610118001	FB-03	EPA 9315	316252		
2610118002	EB-02	EPA 9315	316252		
2610118001	FB-03	EPA 9320	316253		
2610118002	EB-02	EPA 9320	316253		
2610118001	FB-03	Total Radium Calculation	317515		
2610118002	EB-02	Total Radium Calculation	317515		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GCA Power

Project # _____

WO#: 2610118
 PM: BM Due Date: 11/01/18
 CLIENT: GCA Power-CCR

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

Cooler Temperature 2°C Biological Tissue is Frozen: Yes No Date and Initials of person examining contents: 10/04/18 MK
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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	see comment.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: The Radiums were not on the COC but samples were present.

Project Manager Review: _____ Date: _____

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610161001	FB-04	Water	10/04/18 17:00	10/05/18 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610161001	FB-04	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Sample: FB-04		Lab ID: 2610161001		Collected: 10/04/18 17:00		Received: 10/05/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 17:42	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 17:42	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 17:42	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 17:42	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 17:42	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 17:42	7440-43-9		
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 16:23	10/12/18 17:42	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 17:42	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 17:42	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 17:42	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 17:42	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 16:23	10/12/18 17:42	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:42	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:42	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 17:42	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:42	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 17:42	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:42	7440-62-2		
Zinc	0.0042J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 17:42	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:34	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		10/08/18 18:02			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.17J	mg/L	0.25	0.024	1		10/10/18 19:43	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/10/18 19:43	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/10/18 19:43	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 15032	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 2610161001	

METHOD BLANK: 67254 Matrix: Water
Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256 67257

Parameter	Units	269791027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

QC Batch: 15051 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610161001

METHOD BLANK: 67344 Matrix: Water
Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 16:10	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 16:10	
Barium	mg/L	ND	0.010	0.00078	10/12/18 16:10	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 16:10	
Boron	mg/L	ND	0.040	0.0039	10/12/18 16:10	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 16:10	
Calcium	mg/L	ND	0.50	0.014	10/12/18 16:10	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 16:10	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 16:10	
Copper	mg/L	ND	0.025	0.0013	10/12/18 16:10	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 16:10	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 16:10	
Molybdenum	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 16:10	
Silver	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 16:10	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Zinc	mg/L	0.0029J	0.010	0.0021	10/12/18 16:10	

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.11	106	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Copper	mg/L	.1	0.11	105	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Lithium	mg/L	.1	0.10	105	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	104	80-120	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.11	105	80-120	
Zinc	mg/L	.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67346 67347

Parameter	Units	2610159001		67346		67347		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Antimony	mg/L	ND	.1	.1	0.11	0.11	109	107	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	105	75-125	1	20	
Barium	mg/L	0.18	.1	.1	0.29	0.29	116	107	75-125	3	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.094	96	94	75-125	2	20	
Boron	mg/L	0.082	1	1	1.0	1.0	95	92	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	2	20	
Calcium	mg/L	41.7	1	1	50.9	43.6	917	191	75-125	15	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	103	75-125	5	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	3	20	
Copper	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Lithium	mg/L	0.011J	.1	.1	0.11	0.11	97	95	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	107	102	75-125	5	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	2	20	
Silver	mg/L	ND	.1	.1	0.10	0.099	104	99	75-125	4	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	100	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	109	106	75-125	3	20	
Zinc	mg/L	0.0041J	.1	.1	0.11	0.10	101	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 14931	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610161001	

LABORATORY CONTROL SAMPLE: 66900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	406	102	84-108	

SAMPLE DUPLICATE: 66901

Parameter	Units	2610164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.0J	17.0J	43	10	D6

SAMPLE DUPLICATE: 66902

Parameter	Units	2610162002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	128	5	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 15084	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610161001	

METHOD BLANK: 67495 Matrix: Water

Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.16J	0.25	0.024	10/10/18 14:23	
Fluoride	mg/L	ND	0.30	0.029	10/10/18 14:23	
Sulfate	mg/L	ND	1.0	0.017	10/10/18 14:23	

LABORATORY CONTROL SAMPLE: 67496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67497 67498

Parameter	Units	2610158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	6.1	10	10	16.5	16.5	104	105	90-110	0	15	
Fluoride	mg/L	0.24J	10	10	10.3	10.3	100	100	90-110	0	15	
Sulfate	mg/L	209	10	10	154	154	-555	-554	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE: 67499

Parameter	Units	2610158002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.4	10	11.9	105	90-110	
Fluoride	mg/L	0.17J	10	10.2	100	90-110	
Sulfate	mg/L	5.2	10	15.6	104	90-110	

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610161

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610161001	FB-04	EPA 3005A	15051	EPA 6020B	15111
2610161001	FB-04	EPA 7470A	15032	EPA 7470A	15116
2610161001	FB-04	SM 2540C	14931		
2610161001	FB-04	EPA 300.0	15084		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section B

Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: Standard TAT

Report To: Jolu Abraham / Lauren Petty
Copy To: Geosyntec
Purchase Order #: SCS10348606
Project Name: Plant Hammond - Hurflaker Road
Project #:

Invoice Information:
 Attention: SCSinvoices@southernco.com
 Company Name: Pace Analytical
 Address: Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Quote: 328.3
 Pace Profile #:

Regulatory Agency:
 State / Location: GA

Section C

Requested Analysis Filtered (Y/N)

Metals (App. III + State)	Y
TDS, Chloride, Fluoride, Sulfate	N
Metals App IV **	N
Residual Chlorine (Y/N)	2

ITEM #	MATRIX	CODE	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
			START	END												
1	Drinking Water	DW	10/14/18	1700	10/14/18	1800	10/4/18	1800	Nardos Tilahun	10/4/18	1800					
2	Waste Water	WW														
3	Product	P														
4	Soil/Solid	SL														
5	Oil	OL														
6	Wipe	WP														
7	Air	AR														
8	Other	OT														
9	Tissue	TS														
10																
11																
12																

ADDITIONAL COMMENTS:
 * Metals list: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Pb, Ni, Se, Ag, Ti, V, Zn
 ** Metals App IV: Li, Hg, Mo

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: Noelia Moskor
 SIGNATURE of SAMPLER: Noelia Moskor
 DATE Signed: 10/04/18

WO#: 2610161

2610161



Sample Condition Upon Receipt

Client Name: GFA Power

Project # _____

WO#: 2610161

PM: **BM** Due Date: **10/12/18**

CLIENT: **GAPower-CCR**

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 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/05/18 MR

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

October 17, 2018

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

RE: Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

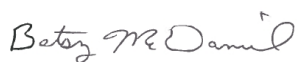
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the report issued on October 15, 2018. The report has been revised to remove mercury, lithium, and molybdenum data from GWC-23 per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Maria Padilla, Georgia Power
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610209001	GWC-23	Water	10/05/18 12:18	10/08/18 11:00
2610209002	FB-05	Water	10/05/18 13:05	10/08/18 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610209001	GWC-23	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610209002	FB-05	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: GWC-23		Lab ID: 2610209001		Collected: 10/05/18 12:18	Received: 10/08/18 11:00	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 20:32	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:32	7440-38-2		
Barium	0.065	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:32	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:32	7440-41-7		
Boron	0.039J	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:32	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:32	7440-43-9		
Calcium	39.3	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 20:38	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:32	7440-47-3		
Cobalt	0.00058J	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:32	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:32	7440-50-8		
Lead	0.00042J	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:32	7439-92-1		
Nickel	0.0014J	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:32	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:32	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:32	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:32	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:32	7440-62-2		
Zinc	0.0048J	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:32	7440-66-6	B	
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	210	mg/L	25.0	10.0	1		10/09/18 16:57			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	1.6	mg/L	0.25	0.024	1		10/11/18 09:35	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		10/11/18 09:35	16984-48-8		
Sulfate	9.3	mg/L	1.0	0.017	1		10/11/18 09:35	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: FB-05		Lab ID: 2610209002		Collected: 10/05/18 13:05		Received: 10/08/18 11:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 20:44	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:44	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:44	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:44	7440-41-7		
Boron	ND	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:44	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:44	7440-43-9		
Calcium	0.021J	mg/L	0.50	0.014	1	10/10/18 13:15	10/12/18 20:44	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:44	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:44	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:44	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:44	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	10/10/18 13:15	10/12/18 20:44	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:44	7439-98-7		
Nickel	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:44	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:44	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:44	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:44	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:44	7440-62-2		
Zinc	0.010	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:44	7440-66-6	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/11/18 10:20	10/11/18 17:32	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	31.0	mg/L	25.0	10.0	1		10/09/18 16:57			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.17J	mg/L	0.25	0.024	1		10/11/18 09:58	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/11/18 09:58	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/11/18 09:58	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

QC Batch: 15185	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 2610209002	

METHOD BLANK: 67911 Matrix: Water
Associated Lab Samples: 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/11/18 16:47	

LABORATORY CONTROL SAMPLE: 67912

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67913 67914

Parameter	Units	2610090002		67914		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	0.95 ug/L	.0025	.0025	0.0032	0.0031	89	88	75-125	1	20

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

QC Batch: 15129 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610209001, 2610209002

METHOD BLANK: 67679 Matrix: Water
Associated Lab Samples: 2610209001, 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 19:18	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 19:18	
Barium	mg/L	ND	0.010	0.00078	10/12/18 19:18	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 19:18	
Boron	mg/L	ND	0.040	0.0039	10/12/18 19:18	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 19:18	
Calcium	mg/L	ND	0.50	0.014	10/12/18 19:18	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 19:18	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 19:18	
Copper	mg/L	ND	0.025	0.0013	10/12/18 19:18	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 19:18	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 19:18	
Molybdenum	mg/L	ND	0.010	0.0019	10/12/18 19:18	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 19:18	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 19:18	
Silver	mg/L	ND	0.010	0.00095	10/12/18 19:18	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 19:18	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 19:18	
Zinc	mg/L	0.0024J	0.010	0.0021	10/12/18 19:18	

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.096	96	80-120	
Beryllium	mg/L	.1	0.098	98	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.096	96	80-120	
Lithium	mg/L	.1	0.099	99	80-120	
Molybdenum	mg/L	.1	0.096	96	80-120	
Nickel	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.099	99	80-120	
Thallium	mg/L	.1	0.095	95	80-120	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road
Pace Project No.: 2610209

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	102	80-120	
Zinc	mg/L	.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67681 67682

Parameter	Units	2610208001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Antimony	mg/L	ND	.1	.1	.1	0.12	0.12	119	117	75-125	2	20			
Arsenic	mg/L	ND	.1	.1	.1	0.11	0.11	106	105	75-125	1	20			
Barium	mg/L	0.081	.1	.1	.1	0.18	0.17	95	91	75-125	2	20			
Beryllium	mg/L	ND	.1	.1	.1	0.11	0.11	107	105	75-125	2	20			
Boron	mg/L	0.15	1	1	1	1.2	1.2	106	106	75-125	0	20			
Cadmium	mg/L	ND	.1	.1	.1	0.11	0.11	107	108	75-125	1	20			
Calcium	mg/L	39.6	1	1	1	41.8	41.2	229	168	75-125	1	20	M6		
Chromium	mg/L	ND	.1	.1	.1	0.11	0.10	107	105	75-125	2	20			
Cobalt	mg/L	ND	.1	.1	.1	0.11	0.10	105	103	75-125	2	20			
Copper	mg/L	ND	.1	.1	.1	0.11	0.10	106	104	75-125	3	20			
Lead	mg/L	ND	.1	.1	.1	0.10	0.099	100	99	75-125	1	20			
Lithium	mg/L	0.016J	.1	.1	.1	0.12	0.12	106	102	75-125	3	20			
Molybdenum	mg/L	ND	.1	.1	.1	0.11	0.11	106	107	75-125	1	20			
Nickel	mg/L	ND	.1	.1	.1	0.11	0.10	107	104	75-125	3	20			
Selenium	mg/L	ND	.1	.1	.1	0.11	0.11	106	105	75-125	1	20			
Silver	mg/L	ND	.1	.1	.1	0.11	0.10	106	105	75-125	1	20			
Thallium	mg/L	ND	.1	.1	.1	0.10	0.098	100	98	75-125	2	20			
Vanadium	mg/L	ND	.1	.1	.1	0.11	0.11	111	111	75-125	1	20			
Zinc	mg/L	0.0029J	.1	.1	.1	0.11	0.11	110	105	75-125	4	20			

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

QC Batch: 15085 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2610209001, 2610209002

METHOD BLANK: 67500 Matrix: Water

Associated Lab Samples: 2610209001, 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	10/11/18 06:47	
Fluoride	mg/L	ND	0.30	0.029	10/11/18 06:47	
Sulfate	mg/L	ND	1.0	0.017	10/11/18 06:47	

LABORATORY CONTROL SAMPLE: 67501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67502 67503

Parameter	Units	2610208001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.5	10	10	12.0	12.0	105	105	90-110	0	15	
Fluoride	mg/L	0.21J	10	10	10.3	10.3	101	101	90-110	0	15	
Sulfate	mg/L	10.6	10	10	20.5	20.5	99	99	90-110	0	15	

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QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610209001	GWC-23	EPA 3005A	15129	EPA 6020B	15152
2610209002	FB-05	EPA 3005A	15129	EPA 6020B	15152
2610209002	FB-05	EPA 7470A	15185	EPA 7470A	15229
2610209001	GWC-23	SM 2540C	15066		
2610209002	FB-05	SM 2540C	15066		
2610209001	GWC-23	EPA 300.0	15085		
2610209002	FB-05	EPA 300.0	15085		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Date: Standard TAT

Section B

Required Project Information:

Report To: Jolu Abraham / Lauren Peity
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Hufaker Road
 Project #: GWC-23

Section C

Invoice Information:

Attention: SCSinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: beasy.mcdaniel@pacelabs.com
 Pace Profile #: 3283

Regulatory Agency

State / Location: GA

ITEM #	MATRIX Drinking Water DW Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR OT OT Tissue TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)	TEMP in C	Received on (Y/N)	Custody (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)		
		START DATE	START TIME													END DATE	END TIME
1				WT G	WT	4		Metals (App III + State) * TDS Chloride Fluoride Sulfate Metals (App II) **	N/A								
2				WT G	WT	4			N/A								
3				WT G	WT	4			N/A								
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS

Relinquished by / Affiliation: Noelia Mustkus
 Date: 10/10/18
 Time: 0945
 Signature: Noelia Mustkus

Accepted by / Affiliation: Mike Nguyen / Pace
 Date: 10/18/18
 Time: 1100
 Signature: Charles Hank

WO#: 2610209

2610209

Sample Condition Upon Receipt

WO#: 2610209

PM: BM

Due Date: 10/15/18

CLIENT: GAPower-CCR

Proj. Due Date:
Proj. Name:



Client Name: GAPower

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: 082

Cooler Temperature: 2.5°C
Temp should be above freezing to 6°C
Type of Ice: Wet Blue None Samples on ice, cooling process has begun
Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/8/18 CA

Item	Yes	No	N/A	Comments
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.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. #
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>GW</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Rads present but not listed on coc (2H 10/8/18)
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, WI-DRO (water) <u>Rads</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed
Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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"/>	16.
Pace Trip Blank Lot # (if purchased): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Client Notification/ Resolution:
 Person Contacted: _____ Date/Time: _____ Field Data Required? Y / N
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

April 11, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2616881

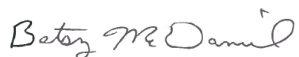
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 02, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report replaces the report issued on 4/9/2019. It has been revised to remove Appnedix IV parameters per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2616881

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 2616881

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616881001	HGWA-111	Water	04/01/19 17:30	04/02/19 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2616881

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616881001	HGWA-111	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2616881

Sample: HGWA-111		Lab ID: 2616881001		Collected: 04/01/19 17:30		Received: 04/02/19 11:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.0076J	mg/L	0.040	0.0039	1	04/05/19 14:47	04/08/19 18:35	7440-42-8	
Calcium	58.4	mg/L	25.0	0.69	50	04/05/19 14:47	04/08/19 18:40	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	213	mg/L	25.0	10.0	1		04/04/19 17:44		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	4.0	mg/L	0.25	0.024	1		04/06/19 00:07	16887-00-6	
Fluoride	0.042J	mg/L	0.30	0.029	1		04/06/19 00:07	16984-48-8	
Sulfate	1.7	mg/L	1.0	0.017	1		04/06/19 00:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2616881

QC Batch: 25772	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2616881001	

LABORATORY CONTROL SAMPLE: 116265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	403	101	84-108	

SAMPLE DUPLICATE: 116266

Parameter	Units	2616783001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	87.0	115	28	10	D6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2616881

QC Batch: 25881 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616881001

METHOD BLANK: 116727 Matrix: Water
Associated Lab Samples: 2616881001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.069J	0.25	0.024	04/05/19 23:23	
Fluoride	mg/L	ND	0.30	0.029	04/05/19 23:23	
Sulfate	mg/L	0.028J	1.0	0.017	04/05/19 23:23	

LABORATORY CONTROL SAMPLE: 116728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116729 116730

Parameter	Units	2616881001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.0	10	10	13.8	13.7	99	97	90-110	1	15	
Fluoride	mg/L	0.042J	10	10	10.0	9.9	100	99	90-110	1	15	
Sulfate	mg/L	1.7	10	10	11.4	11.4	97	96	90-110	1	15	

MATRIX SPIKE SAMPLE: 116731

Parameter	Units	2616885001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	6.5	10	15.5	89	90-110	M1
Fluoride	mg/L	0.029J	10	9.5	95	90-110	
Sulfate	mg/L	50.4	10	54.7	43	90-110	E,M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2616881

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D6 | The precision between the sample and sample duplicate exceeded laboratory control limits. |
| E | Analyte concentration exceeded the calibration range. The reported result is estimated. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| M6 | Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution. |
| R1 | RPD value was outside control limits. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 2616881

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616881001	HGWA-111	EPA 3005A	25905	EPA 6020B	25922
2616881001	HGWA-111	SM 2540C	25772		
2616881001	HGWA-111	EPA 300.0	25881		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: **2616881**

PM: BM Due Date: 04/09/19

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 2.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 4/2/19 MR

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

Client Notification/ Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Field Data Required? Y / N

Project Manager Review: _____ Date: _____

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

April 11, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2616929

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 03, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2616929

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2616929

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616929001	HGWA-112	Water	04/02/19 12:30	04/03/19 11:10
2616929002	HGWA-113	Water	04/02/19 15:00	04/03/19 11:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2616929

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616929001	HGWA-112	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616929002	HGWA-113	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2616929

Sample: HGWA-112		Lab ID: 2616929001		Collected: 04/02/19 12:30		Received: 04/03/19 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.0043J	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 18:48	7440-42-8	
Calcium	6.7	mg/L	5.0	0.14	10	04/05/19 15:23	04/10/19 11:29	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	69.0	mg/L	25.0	10.0	1		04/08/19 15:32		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.7	mg/L	0.25	0.024	1		04/05/19 18:38	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/05/19 18:38	16984-48-8	
Sulfate	0.78J	mg/L	1.0	0.017	1		04/05/19 18:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2616929

Sample: HGWA-113		Lab ID: 2616929002		Collected: 04/02/19 15:00	Received: 04/03/19 11:10	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	0.0059J	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 19:00	7440-42-8		
Calcium	7.4	mg/L	5.0	0.14	10	04/05/19 15:23	04/10/19 11:34	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	94.0	mg/L	25.0	10.0	1		04/08/19 15:32			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	1.8	mg/L	0.25	0.024	1		04/05/19 19:02	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		04/05/19 19:02	16984-48-8		
Sulfate	8.7	mg/L	1.0	0.017	1		04/05/19 19:02	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2616929

QC Batch:	25906	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	2616929001, 2616929002		

METHOD BLANK: 116817 Matrix: Water

Associated Lab Samples: 2616929001, 2616929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0039	04/09/19 18:14	
Calcium	mg/L	ND	0.50	0.014	04/09/19 18:14	

LABORATORY CONTROL SAMPLE: 116818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.94	94	80-120	
Calcium	mg/L	1	0.97	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116819 116820

Parameter	Units	2616933004 Result	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Boron	mg/L	0.99	1	1	1.9	2.0	92	96	75-125	2	20			
Calcium	mg/L	101	1	1	140	115	3930	1380	75-125	20	20 M6			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2616929

QC Batch: 25882 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616929001, 2616929002

METHOD BLANK: 116732 Matrix: Water
Associated Lab Samples: 2616929001, 2616929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.029J	0.25	0.024	04/05/19 15:47	
Fluoride	mg/L	ND	0.30	0.029	04/05/19 15:47	
Sulfate	mg/L	ND	1.0	0.017	04/05/19 15:47	

LABORATORY CONTROL SAMPLE: 116733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116734 116735

Parameter	Units	2616927001		2616927002		116734		116735		% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	4.4	10	10	14.5	14.6	101	102	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.6	10.6	106	106	90-110	0	15	
Sulfate	mg/L	4.9	10	10	14.3	14.4	94	95	90-110	0	15	

MATRIX SPIKE SAMPLE: 116736

Parameter	Units	2616927002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.7	10	11.3	96	90-110	
Fluoride	mg/L	0.12J	10	10.4	103	90-110	
Sulfate	mg/L	23.8	10	30.8	70	90-110 M1	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2616929

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 2616929

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616929001	HGWA-112	EPA 3005A	25906	EPA 6020B	25928
2616929002	HGWA-113	EPA 3005A	25906	EPA 6020B	25928
2616929001	HGWA-112	SM 2540C	25999		
2616929002	HGWA-113	SM 2540C	25999		
2616929001	HGWA-112	EPA 300.0	25882		
2616929002	HGWA-113	EPA 300.0	25882		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GAPower

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

WO#: **2616929**

PM: **BM** Due Date: **04/10/19**
CLIENT: **GAPower-CCR**

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 1.0 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Samples on ice, cooling process has begun
Date and Initials of person examining contents: 4/3/19 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>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: _____ Field Data Required? **Y / N**

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

April 11, 2019

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

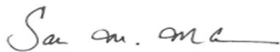
RE: Project: Plant Hammond AP
Pace Project No.: 2616994

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2616994

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 2616994

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616994001	HGWC-109	Water	04/03/19 14:30	04/04/19 11:00
2616994002	HGWC-107	Water	04/03/19 16:00	04/04/19 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2616994

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616994001	HGWC-109	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616994002	HGWC-107	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2616994

Sample: HGWC-109		Lab ID: 2616994001		Collected: 04/03/19 14:30	Received: 04/04/19 11:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.40	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 21:46	7440-42-8	
Calcium	37.5	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 21:52	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	210	mg/L	25.0	10.0	1		04/10/19 16:41		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.0	mg/L	0.25	0.024	1		04/06/19 00:46	16887-00-6	
Fluoride	0.050J	mg/L	0.30	0.029	1		04/06/19 00:46	16984-48-8	
Sulfate	36.0	mg/L	1.0	0.017	1		04/06/19 00:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2616994

Sample: HGWC-107		Lab ID: 2616994002		Collected: 04/03/19 16:00	Received: 04/04/19 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	0.89	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 21:57	7440-42-8		
Calcium	54.0	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 22:03	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	273	mg/L	25.0	10.0	1		04/10/19 16:41			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.6	mg/L	0.25	0.024	1		04/06/19 01:11	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		04/06/19 01:11	16984-48-8		
Sulfate	139	mg/L	10.0	0.17	10		04/06/19 05:20	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2616994

QC Batch: 25906 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616994001, 2616994002

METHOD BLANK: 116817 Matrix: Water

Associated Lab Samples: 2616994001, 2616994002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0039	04/09/19 18:14	
Calcium	mg/L	ND	0.50	0.014	04/09/19 18:14	

LABORATORY CONTROL SAMPLE: 116818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.94	94	80-120	
Calcium	mg/L	1	0.97	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116819 116820

Parameter	Units	2616933004		116819		116820		% Rec Limits	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Boron	mg/L	0.99	1	1	1.9	2.0	92	96	75-125	2	20
Calcium	mg/L	101	1	1	140	115	3930	1380	75-125	20	20 M6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2616994

QC Batch: 25882 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616994001, 2616994002

METHOD BLANK: 116732 Matrix: Water
Associated Lab Samples: 2616994001, 2616994002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.029J	0.25	0.024	04/05/19 15:47	
Fluoride	mg/L	ND	0.30	0.029	04/05/19 15:47	
Sulfate	mg/L	ND	1.0	0.017	04/05/19 15:47	

LABORATORY CONTROL SAMPLE: 116733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116734 116735

Parameter	Units	2616927001		2616927002		2616927003		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.	MS % Rec	MSD % Rec					
Chloride	mg/L	4.4	10	10	10	14.5	14.6	101	102	90-110	0	15
Fluoride	mg/L	ND	10	10	10	10.6	10.6	106	106	90-110	0	15
Sulfate	mg/L	4.9	10	10	10	14.3	14.4	94	95	90-110	0	15

MATRIX SPIKE SAMPLE: 116736

Parameter	Units	2616927002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.7	10	11.3	96	90-110	
Fluoride	mg/L	0.12J	10	10.4	103	90-110	
Sulfate	mg/L	23.8	10	30.8	70	90-110 M1	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2616994

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 2616994

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616994001	HGWC-109	EPA 3005A	25906	EPA 6020B	25928
2616994002	HGWC-107	EPA 3005A	25906	EPA 6020B	25928
2616994001	HGWC-109	SM 2540C	26129		
2616994002	HGWC-107	SM 2540C	26129		
2616994001	HGWC-109	EPA 300.0	25882		
2616994002	HGWC-107	EPA 300.0	25882		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project #

WO#: **2616994**

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

PM: **BM** Due Date: **04/11/19**
CLIENT: **GAPower-CCR**

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 3.5 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Samples on ice, cooling process has begun
Date and Initials of person examining contents: 4/9/19 MK

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>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: _____ 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 (ie out of hold, incorrect preservative, out of temp, incorrect containers)

May 01, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2617069

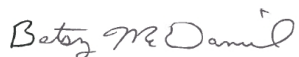
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/13/2019. The report has been revised to correct metals units and target list per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2617069

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2617069

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617069001	HGWC-103	Water	04/04/19 11:40	04/05/19 11:20
2617069002	FD-01	Water	04/04/19 00:00	04/05/19 11:20
2617069003	HGWC-105	Water	04/04/19 14:04	04/05/19 11:20
2617069004	HGWC-101	Water	04/04/19 17:15	04/05/19 11:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2617069

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617069001	HGWC-103	EPA 6020B	SER	2	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617069002	FD-01	EPA 6020B	SER	2	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617069003	HGWC-105	EPA 6020B	SER	2	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617069004	HGWC-101	EPA 6020B	JMW1	2	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2617069

Sample: HGWC-103		Lab ID: 2617069001		Collected: 04/04/19 11:40	Received: 04/05/19 11:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Boron	2.4	mg/L	2.0	0.051	20	04/09/19 10:55	04/11/19 19:56	7440-42-8		
Calcium	91.9	mg/L	10.0	0.41	20	04/09/19 10:55	04/11/19 19:56	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	535	mg/L	25.0	10.0	1		04/11/19 19:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	6.9	mg/L	0.25	0.024	1		04/09/19 19:47	16887-00-6		
Fluoride	0.042J	mg/L	0.30	0.029	1		04/09/19 19:47	16984-48-8	M1	
Sulfate	358	mg/L	10.0	0.17	10		04/10/19 07:14	14808-79-8	M1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2617069

Sample: FD-01		Lab ID: 2617069002		Collected: 04/04/19 00:00	Received: 04/05/19 11:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Boron	2.6	mg/L	2.0	0.051	20	04/09/19 10:55	04/11/19 19:59	7440-42-8		
Calcium	95.5	mg/L	10.0	0.41	20	04/09/19 10:55	04/11/19 19:59	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	537	mg/L	25.0	10.0	1		04/11/19 19:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	7.2	mg/L	0.25	0.024	1		04/09/19 20:55	16887-00-6		
Fluoride	0.045J	mg/L	0.30	0.029	1		04/09/19 20:55	16984-48-8		
Sulfate	369	mg/L	25.0	0.42	25		04/10/19 07:37	14808-79-8	M1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2617069

Sample: HGWC-105		Lab ID: 2617069003		Collected: 04/04/19 14:04	Received: 04/05/19 11:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Boron	1.4J	mg/L	2.0	0.051	20	04/09/19 10:55	04/11/19 20:03	7440-42-8		
Calcium	73.8	mg/L	10.0	0.41	20	04/09/19 10:55	04/11/19 20:03	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	340	mg/L	25.0	10.0	1		04/11/19 19:34			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	3.9	mg/L	0.25	0.024	1		04/09/19 21:18	16887-00-6		
Fluoride	0.030J	mg/L	0.30	0.029	1		04/09/19 21:18	16984-48-8		
Sulfate	185	mg/L	10.0	0.17	10		04/10/19 08:00	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2617069

Sample: HGWC-101		Lab ID: 2617069004		Collected: 04/04/19 17:15	Received: 04/05/19 11:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Boron	0.060J	mg/L	0.20	0.0051	2	04/09/19 10:55	04/11/19 01:27	7440-42-8	
Calcium	16.9	mg/L	1.0	0.041	2	04/09/19 10:55	04/11/19 01:27	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	149	mg/L	25.0	10.0	1		04/11/19 19:35		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.9	mg/L	0.25	0.024	1		04/09/19 21:41	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/09/19 21:41	16984-48-8	
Sulfate	95.1	mg/L	10.0	0.17	10		04/10/19 08:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2617069

QC Batch: 468126 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Associated Lab Samples: 2617069001, 2617069002, 2617069003, 2617069004

METHOD BLANK: 2543175 Matrix: Water
Associated Lab Samples: 2617069001, 2617069002, 2617069003, 2617069004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.0026	04/11/19 00:58	
Calcium	mg/L	ND	0.50	0.021	04/11/19 00:58	

LABORATORY CONTROL SAMPLE: 2543176

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	0.05	0.047J	94	80-120	
Calcium	mg/L	0.62	0.63	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2543177 2543178

Parameter	Units	2543177		2543178		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2617072001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Boron	mg/L	2.3	0.05	0.05	2.4	2.4	205	248	75-125	1	20 M6
Calcium	mg/L	214	0.62	0.62	218	216	575	271	75-125	1	20 M6

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2617069

QC Batch: 26061 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617069001, 2617069002, 2617069003, 2617069004

METHOD BLANK: 117670 Matrix: Water
Associated Lab Samples: 2617069001, 2617069002, 2617069003, 2617069004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.31	0.25	0.024	04/09/19 19:01	
Fluoride	mg/L	ND	0.30	0.029	04/09/19 19:01	
Sulfate	mg/L	ND	1.0	0.017	04/09/19 19:01	

LABORATORY CONTROL SAMPLE: 117671

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	9.4	94	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117672 117673

Parameter	Units	2617069001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	6.9	10	10	16.0	16.1	91	92	90-110	1	15	
Fluoride	mg/L	0.042J	10	10	9.0	9.1	89	91	90-110	2	15	M1
Sulfate	mg/L	358	10	10	224	224	-1340	-1330	90-110	0	15	M1

MATRIX SPIKE SAMPLE: 117674

Parameter	Units	2617069002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.2	10	16.3	91	90-110	
Fluoride	mg/L	0.045J	10	9.3	92	90-110	
Sulfate	mg/L	369	10	226	-1430	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2617069

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 2617069

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617069001	HGWC-103	EPA 3010A	468126	EPA 6020B	468248
2617069002	FD-01	EPA 3010A	468126	EPA 6020B	468248
2617069003	HGWC-105	EPA 3010A	468126	EPA 6020B	468248
2617069004	HGWC-101	EPA 3010A	468126	EPA 6020B	468248
2617069001	HGWC-103	SM 2540C	26251		
2617069002	FD-01	SM 2540C	26251		
2617069003	HGWC-105	SM 2540C	26251		
2617069004	HGWC-101	SM 2540C	26251		
2617069001	HGWC-103	EPA 300.0	26061		
2617069002	FD-01	EPA 300.0	26061		
2617069003	HGWC-105	EPA 300.0	26061		
2617069004	HGWC-101	EPA 300.0	26061		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: **2617069**

PM: **BM** Due Date: **04/12/19**
CLIENT: **GAPower-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 1.2 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Samples on ice, cooling process has begun
Date and Initials of person examining contents: 4/5/19 MK

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>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

May 03, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2617144

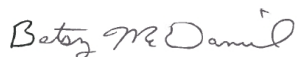
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/16/2019. The report has been revised to correct metals units and target list per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2617144

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 2617144

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617144001	HGWC-117	Water	04/05/19 11:40	04/08/19 15:30
2617144002	HGWC-118	Water	04/05/19 13:25	04/08/19 15:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2617144

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617144001	HGWC-117	EPA 6020B	JMW1	2	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617144002	HGWC-118	EPA 6020B	JMW1	2	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2617144

Sample: HGWC-117		Lab ID: 2617144001		Collected: 04/05/19 11:40		Received: 04/08/19 15:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Boron	1.0J	mg/L	2.0	0.051	20	04/10/19 19:59	04/11/19 22:30	7440-42-8	M6
Calcium	70.0	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 22:30	7440-70-2	M6
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	334	mg/L	25.0	10.0	1		04/11/19 20:53		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.9	mg/L	0.25	0.024	1		04/10/19 08:01	16887-00-6	
Fluoride	0.19J	mg/L	0.30	0.029	1		04/10/19 08:01	16984-48-8	
Sulfate	141	mg/L	10.0	0.17	10		04/10/19 11:07	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2617144

Sample: HGWC-118		Lab ID: 2617144002		Collected: 04/05/19 13:25		Received: 04/08/19 15:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Boron	0.60J	mg/L	2.0	0.051	20	04/10/19 19:59	04/11/19 22:48	7440-42-8	
Calcium	82.0	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 22:48	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	308	mg/L	25.0	10.0	1		04/11/19 20:53		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	4.3	mg/L	0.25	0.024	1		04/10/19 08:47	16887-00-6	
Fluoride	0.33	mg/L	0.30	0.029	1		04/10/19 08:47	16984-48-8	
Sulfate	75.1	mg/L	10.0	0.17	10		04/10/19 13:06	14808-79-8	

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2617144

QC Batch: 468622

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020 MET

Associated Lab Samples: 2617144001, 2617144002

METHOD BLANK: 2545263

Matrix: Water

Associated Lab Samples: 2617144001, 2617144002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.0026	04/11/19 20:42	
Calcium	mg/L	ND	0.50	0.021	04/11/19 20:42	

LABORATORY CONTROL SAMPLE: 2545264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	0.05	0.052J	104	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266

Parameter	Units	2617144001		2545266		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	mg/L	1.0J	0.05	1.0J	1.0J	67	48	75-125	1	20	M6
Calcium	mg/L	70.0	0.62	71.3	74.8	207	759	75-125	5	20	M6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2617144

QC Batch: 26064 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617144001, 2617144002

METHOD BLANK: 117680 Matrix: Water
Associated Lab Samples: 2617144001, 2617144002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	04/10/19 01:27	
Fluoride	mg/L	ND	0.30	0.029	04/10/19 01:27	
Sulfate	mg/L	ND	1.0	0.017	04/10/19 01:27	

LABORATORY CONTROL SAMPLE: 117681

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117682 117683

Parameter	Units	2617086001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	4.2	10	10	14.3	14.3	101	101	90-110	0	15	
Fluoride	mg/L	0.047J	10	10	10.4	10.4	103	103	90-110	0	15	
Sulfate	mg/L	10.8	10	10	19.6	19.6	89	88	90-110	0	15	M1

MATRIX SPIKE SAMPLE: 117684

Parameter	Units	2617086002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		1.6	10	10.7	91	90-110
Fluoride	mg/L		ND	10	9.2	92	90-110
Sulfate	mg/L		5.2	10	13.7	85	90-110 M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2617144

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 2617144

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617144001	HGWC-117	EPA 3010A	468622	EPA 6020B	468673
2617144002	HGWC-118	EPA 3010A	468622	EPA 6020B	468673
2617144001	HGWC-117	SM 2540C	26252		
2617144002	HGWC-118	SM 2540C	26252		
2617144001	HGWC-117	EPA 300.0	26064		
2617144002	HGWC-118	EPA 300.0	26064		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2617144**

PM: **BM**

Due Date: **04/15/19**

CLIENT: **GA Power-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Other

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 1.1 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 4/8/19 MK

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>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

May 01, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2617148

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/16/2019. The report has been revised to correct metals units per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2617148

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2617148

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617148001	FB-01	Water	04/05/19 08:50	04/08/19 15:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 2617148

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617148001	FB-01	EPA 6020B	SER	19	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2617148

Sample: FB-01		Lab ID: 2617148001		Collected: 04/05/19 08:50		Received: 04/08/19 15:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Antimony	ND	mg/L	0.0030	0.00011	1	04/16/19 07:51	04/16/19 18:55	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.000060	1	04/16/19 07:51	04/16/19 18:55	7440-38-2		
Barium	0.000078J	mg/L	0.010	0.000060	1	04/16/19 07:51	04/16/19 18:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/16/19 07:51	04/16/19 18:55	7440-41-7		
Boron	ND	mg/L	0.10	0.0026	1	04/16/19 07:51	04/16/19 18:55	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/16/19 07:51	04/16/19 18:55	7440-43-9		
Calcium	0.024J	mg/L	0.50	0.021	1	04/16/19 07:51	04/16/19 18:55	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/16/19 07:51	04/16/19 18:55	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/16/19 07:51	04/16/19 18:55	7440-48-4		
Copper	ND	mg/L	0.025	0.00023	1	04/16/19 07:51	04/16/19 18:55	7440-50-8		
Lead	ND	mg/L	0.0050	0.000050	1	04/16/19 07:51	04/16/19 18:55	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/16/19 07:51	04/16/19 18:55	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/16/19 07:51	04/16/19 18:55	7439-98-7		
Nickel	ND	mg/L	0.010	0.00011	1	04/16/19 07:51	04/16/19 18:55	7440-02-0		
Selenium	ND	mg/L	0.010	0.000080	1	04/16/19 07:51	04/16/19 18:55	7782-49-2		
Silver	ND	mg/L	0.010	0.000050	1	04/16/19 07:51	04/16/19 18:55	7440-22-4		
Thallium	ND	mg/L	0.0010	0.000060	1	04/16/19 07:51	04/16/19 18:55	7440-28-0		
Vanadium	ND	mg/L	0.010	0.00012	1	04/16/19 07:51	04/16/19 18:55	7440-62-2		
Zinc	0.017	mg/L	0.010	0.0011	1	04/16/19 07:51	04/16/19 18:55	7440-66-6	C0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/11/19 21:25	04/15/19 18:37	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		04/11/19 20:53			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.11J	mg/L	0.25	0.024	1		04/10/19 22:29	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 22:29	16984-48-8		
Sulfate	0.069J	mg/L	1.0	0.017	1		04/10/19 22:29	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617148

QC Batch: 468895 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2617148001

METHOD BLANK: 2546716 Matrix: Water
Associated Lab Samples: 2617148001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/15/19 18:06	

LABORATORY CONTROL SAMPLE: 2546717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	83	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2546718 2546719

Parameter	Units	92424398001 Result	MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result							
Mercury	mg/L	ND	0.0025	0.0019	0.0025	0.0019	77	77	75-125	0	25		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2617148

QC Batch: 469500 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3010A Analysis Description: 6020 MET
 Associated Lab Samples: 2617148001

METHOD BLANK: 2549697 Matrix: Water

Associated Lab Samples: 2617148001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00011	04/16/19 18:48	
Arsenic	mg/L	ND	0.0050	0.000060	04/16/19 18:48	
Barium	mg/L	ND	0.010	0.000060	04/16/19 18:48	
Beryllium	mg/L	ND	0.0030	0.000050	04/16/19 18:48	
Boron	mg/L	ND	0.10	0.0026	04/16/19 18:48	
Cadmium	mg/L	ND	0.0010	0.000070	04/16/19 18:48	
Calcium	mg/L	ND	0.50	0.021	04/16/19 18:48	
Chromium	mg/L	ND	0.010	0.00042	04/16/19 18:48	
Cobalt	mg/L	ND	0.010	0.000050	04/16/19 18:48	
Copper	mg/L	ND	0.025	0.00023	04/16/19 18:48	
Lead	mg/L	ND	0.0050	0.000050	04/16/19 18:48	
Lithium	mg/L	ND	0.050	0.00042	04/16/19 18:48	
Molybdenum	mg/L	ND	0.010	0.00010	04/16/19 18:48	
Nickel	mg/L	ND	0.010	0.00011	04/16/19 18:48	
Selenium	mg/L	ND	0.010	0.000080	04/16/19 18:48	
Silver	mg/L	ND	0.010	0.000050	04/16/19 18:48	
Thallium	mg/L	ND	0.0010	0.000060	04/16/19 18:48	
Vanadium	mg/L	ND	0.010	0.00012	04/16/19 18:48	
Zinc	mg/L	ND	0.010	0.0011	04/16/19 18:48	

LABORATORY CONTROL SAMPLE: 2549698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	80-120	
Arsenic	mg/L	0.01	0.0096	96	80-120	
Barium	mg/L	0.05	0.049	98	80-120	
Beryllium	mg/L	0.01	0.0096	96	80-120	
Boron	mg/L	0.05	0.048J	95	80-120	
Cadmium	mg/L	0.01	0.0099	99	80-120	
Calcium	mg/L	0.62	0.64	103	80-120	
Chromium	mg/L	0.05	0.048	97	80-120	
Cobalt	mg/L	0.01	0.0098J	98	80-120	
Copper	mg/L	0.05	0.049	98	80-120	
Lead	mg/L	0.05	0.050	99	80-120	
Lithium	mg/L	0.05	0.049J	98	80-120	
Molybdenum	mg/L	0.05	0.049	98	80-120	
Nickel	mg/L	0.05	0.049	97	80-120	
Selenium	mg/L	0.05	0.050	100	80-120	
Silver	mg/L	0.025	0.025	99	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2617148

LABORATORY CONTROL SAMPLE: 2549698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	0.05	0.049	98	80-120	
Zinc	mg/L	0.05	0.049	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2549699 2549700

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2617148001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Arsenic	mg/L	ND	0.01	0.01	0.0098	0.0097	98	97	75-125	1	20	
Barium	mg/L	0.000078J	0.05	0.05	0.049	0.050	99	99	75-125	0	20	
Beryllium	mg/L	ND	0.01	0.01	0.0097	0.0097	97	97	75-125	0	20	
Boron	mg/L	ND	0.05	0.05	0.049J	0.050J	93	95	75-125	2	20	
Cadmium	mg/L	ND	0.01	0.01	0.010	0.0099	100	99	75-125	1	20	
Calcium	mg/L	0.024J	0.62	0.62	0.65	0.65	100	101	75-125	1	20	
Chromium	mg/L	ND	0.05	0.05	0.050	0.049	99	97	75-125	2	20	
Cobalt	mg/L	ND	0.01	0.01	0.010J	0.0099J	100	98	75-125	1	20	
Copper	mg/L	ND	0.05	0.05	0.050	0.050	101	99	75-125	2	20	
Lead	mg/L	ND	0.05	0.05	0.050	0.050	100	99	75-125	1	20	
Lithium	mg/L	ND	0.05	0.05	0.050J	0.048J	99	96	75-125	4	20	
Molybdenum	mg/L	ND	0.05	0.05	0.050	0.050	100	99	75-125	1	20	
Nickel	mg/L	ND	0.05	0.05	0.050	0.049	100	98	75-125	1	20	
Selenium	mg/L	ND	0.05	0.05	0.050	0.050	101	100	75-125	1	20	
Silver	mg/L	ND	0.025	0.025	0.025	0.025	100	100	75-125	0	20	
Thallium	mg/L	ND	0.01	0.01	0.010	0.0099	100	99	75-125	1	20	
Vanadium	mg/L	ND	0.05	0.05	0.050	0.049	99	98	75-125	1	20	
Zinc	mg/L	0.017	0.05	0.05	0.067	0.066	99	98	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2617148

QC Batch: 26252	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2617148001	

LABORATORY CONTROL SAMPLE: 118510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 118512

Parameter	Units	2617150003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2310	2380	3	10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617148

QC Batch: 26135 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617148001

METHOD BLANK: 117979 Matrix: Water
Associated Lab Samples: 2617148001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.064J	0.25	0.024	04/10/19 21:47	
Fluoride	mg/L	ND	0.30	0.029	04/10/19 21:47	
Sulfate	mg/L	ND	1.0	0.017	04/10/19 21:47	

LABORATORY CONTROL SAMPLE: 117980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	10.0	100	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117981 117982

Parameter	Units	2617207001 Result	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	0.25J	10	10	9.9	10	96	97	90-110	1	15		
Fluoride	mg/L	ND	10	10	9.5	9.6	95	96	90-110	1	15		
Sulfate	mg/L	0.13J	10	10	9.5	9.6	94	94	90-110	1	15		

MATRIX SPIKE SAMPLE: 117983

Parameter	Units	2617150001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	131	10	10.5	-1210	90-110	
Fluoride	mg/L	0.13J	10	9.4	93	90-110	
Sulfate	mg/L	392	10	13.7	-3780	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 2617148

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

C0 Result confirmed by second analysis.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2617148

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617148001	FB-01	EPA 3010A	469500	EPA 6020B	469558
2617148001	FB-01	EPA 7470A	468895	EPA 7470A	468941
2617148001	FB-01	SM 2540C	26252		
2617148001	FB-01	EPA 300.0	26135		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Phone: (404) 506-7239
 Email: jahraham@southemco.com
 Requested Due Date: Standard

Section B
 Required Project Information:
 Report To: Jolu Abraham
 Copy To: Lauren Petty, Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond
 Project #:

Section C
 Invoice Information:
 Attention: sesinvoicess@southemco.com
 Company Name:
 Address:
 Pace Quibbe:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327 (AP) or 328 (Huff)

Regulatory Agency: GA
 State: GA

ITEM #	MATRIX	MATRIX CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS		Preservatives	Analytes Test	Requested Analysis Reference (Y/N)	Temp in C	Received on	Custody	Sealed	Cooler	Samples	Intact	
			START DATE TIME	END DATE TIME			Unpreserved	H2SO4											HCl
1	Drinking Water	DW	4/15/19 0940	4/15/19 0830	17	5	2	3											
2	Waste Water	WW																	
3	Waste Water	WW																	
4	Process	P																	
5	Sludge	SL																	
6	Oil	OL																	
7	Waste	WP																	
8	Air	AR																	
9	Other	OT																	
10	Tissue	TS																	

MATRIX CODES:
 DW: Drinking Water
 WW: Waste Water
 P: Process
 SL: Sludge
 OL: Oil
 WP: Waste
 AR: Air
 OT: Other
 TS: Tissue

SAMPLE ID
 One Character per box.
 (A-Z, 0-9 /, -)
 Sample IDs must be unique

FB-01

DATE: 4/15/19

NO#: 2617148

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received on	Temp in C	Received on	Custody	Sealed	Cooler	Samples	Intact	
	Apollia Mufson/Geosyntec	4/15/19	1945	Apollia Mufson/Geosyntec	4/15/19	1945										
	Jeppia/Geosyntec	4/18/19	1116	Jeppia/Geosyntec	4/18/19	1116										
				Madalman	4/18/19	1530										

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Nodia Muskus
 SIGNATURE of SAMPLER: *Nodia Muskus*
 DATE Signed: 4/15/19



Sample Condition Upon Receipt

Client Name: GTA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 1.1

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

WO#: **2617148**

PM: **BM** Due Date: **04/15/19**

CLIENT: **GAPower-CCR**

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 4/8/19 MR

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

Client Notification/Resolution: _____ 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)

May 01, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2617149

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2617149

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2617149

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617149001	FB-01	Water	04/05/19 08:50	04/08/19 15:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617149

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617149001	FB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 2617149

Sample: FB-01 **Lab ID: 2617149001** Collected: 04/05/19 08:50 Received: 04/08/19 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.114 ± 0.161 (0.330) C:92% T:NA	pCi/L	04/18/19 08:25	13982-63-3	
Radium-228	EPA 9320	0.160 ± 0.258 (0.561) C:88% T:76%	pCi/L	04/18/19 12:31	15262-20-1	
Total Radium	Total Radium Calculation	0.274 ± 0.419 (0.891)	pCi/L	04/22/19 11:27	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 2617149

QC Batch: 337915

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617149001

METHOD BLANK: 1644524

Matrix: Water

Associated Lab Samples: 2617149001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.664 ± 0.303 (0.504) C:90% T:91%	pCi/L	04/18/19 12:31	

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: Plant Hammond

Pace Project No.: 2617149

QC Batch: 337923

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617149001

METHOD BLANK: 1644541

Matrix: Water

Associated Lab Samples: 2617149001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.170 ± 0.213 (0.439) C:94% T:NA	pCi/L	04/18/19 08:05	

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 Hammond
Pace Project No.: 2617149

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2617149

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617149001	FB-01	EPA 9315	337923		
2617149001	FB-01	EPA 9320	337915		
2617149001	FB-01	Total Radium Calculation	339294		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GTA Power

Project # _____

WO#: 2617149

PM: **BM** Due Date: **05/06/19**
 CLIENT: **GAPower-CCR**

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 83 Type of Ice: Wet Blue None

Cooler Temperature 1.1 Biological Tissue is Frozen: Yes No

Samples on ice, cooling process has begun
 Date and Initials of person examining contents: 4/8/19 MB

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 type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

May 03, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2617207

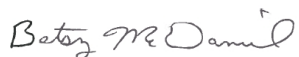
Dear Joju Abraham:

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

This revised report replaces the one issued on 4/16/2019. The report has been revised to correct metals units per consultant request. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2617207

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617207

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617207001	FB-02	Water	04/08/19 17:45	04/09/19 13:30
2617207002	EB-01	Water	04/08/19 18:00	04/09/19 13:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 2617207

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617207001	FB-02	EPA 6020B	JMW1	19	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617207002	EB-01	EPA 6020B	JMW1	19	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2617207

Sample: FB-02		Lab ID: 2617207001		Collected: 04/08/19 17:45		Received: 04/09/19 13:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:04	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:04	7440-38-2		
Barium	ND	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:04	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:04	7440-41-7		
Boron	ND	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:04	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:04	7440-43-9		
Calcium	ND	mg/L	0.50	0.021	1	04/10/19 19:59	04/12/19 01:04	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:04	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:04	7440-48-4		
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:04	7440-50-8		
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:04	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/10/19 19:59	04/12/19 01:04	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/10/19 19:59	04/12/19 01:04	7439-98-7		
Nickel	ND	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:04	7440-02-0		
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:04	7782-49-2		
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:04	7440-22-4		
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:04	7440-28-0		
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:04	7440-62-2		
Zinc	ND	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:04	7440-66-6		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/11/19 21:25	04/15/19 18:39	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	14.0J	mg/L	25.0	10.0	1		04/11/19 20:54			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.25J	mg/L	0.25	0.024	1		04/11/19 00:54	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/11/19 00:54	16984-48-8		
Sulfate	0.13J	mg/L	1.0	0.017	1		04/11/19 00:54	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2617207

Sample: EB-01		Lab ID: 2617207002		Collected: 04/08/19 18:00		Received: 04/09/19 13:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:08	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:08	7440-38-2		
Barium	ND	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:08	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:08	7440-41-7		
Boron	ND	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:08	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:08	7440-43-9		
Calcium	ND	mg/L	0.50	0.021	1	04/10/19 19:59	04/12/19 01:08	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:08	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:08	7440-48-4		
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:08	7440-50-8		
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:08	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/10/19 19:59	04/12/19 01:08	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/10/19 19:59	04/12/19 01:08	7439-98-7		
Nickel	ND	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:08	7440-02-0		
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:08	7782-49-2		
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:08	7440-22-4		
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:08	7440-28-0		
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:08	7440-62-2		
Zinc	ND	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:08	7440-66-6		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/11/19 21:25	04/15/19 18:41	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	12.0J	mg/L	25.0	10.0	1		04/11/19 20:54			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.22J	mg/L	0.25	0.024	1		04/11/19 03:19	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/11/19 03:19	16984-48-8		
Sulfate	0.38J	mg/L	1.0	0.017	1		04/11/19 03:19	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2617207

QC Batch: 468895

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2617207001, 2617207002

METHOD BLANK: 2546716

Matrix: Water

Associated Lab Samples: 2617207001, 2617207002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/15/19 18:06	

LABORATORY CONTROL SAMPLE: 2546717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	83	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2546718 2546719

Parameter	Units	92424398001 Result	MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Spike Conc.							
Mercury	mg/L	ND	0.0025	0.0019	0.0019	0.0025	77	77	75-125	0	25		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2617207

QC Batch: 468622 Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A Analysis Description: 6020 MET

Associated Lab Samples: 2617207001, 2617207002

METHOD BLANK: 2545263 Matrix: Water

Associated Lab Samples: 2617207001, 2617207002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00011	04/11/19 20:42	
Arsenic	mg/L	ND	0.0050	0.000060	04/11/19 20:42	
Barium	mg/L	ND	0.010	0.000060	04/11/19 20:42	
Beryllium	mg/L	ND	0.0030	0.000050	04/11/19 20:42	
Boron	mg/L	ND	0.10	0.0026	04/11/19 20:42	
Cadmium	mg/L	ND	0.0010	0.000070	04/11/19 20:42	
Calcium	mg/L	ND	0.50	0.021	04/11/19 20:42	
Chromium	mg/L	ND	0.010	0.00042	04/11/19 20:42	
Cobalt	mg/L	ND	0.010	0.000050	04/11/19 20:42	
Copper	mg/L	ND	0.025	0.00023	04/11/19 20:42	
Lead	mg/L	ND	0.0050	0.000050	04/11/19 20:42	
Lithium	mg/L	ND	0.050	0.00042	04/11/19 20:42	
Molybdenum	mg/L	ND	0.010	0.00010	04/11/19 20:42	
Nickel	mg/L	ND	0.010	0.00011	04/11/19 20:42	
Selenium	mg/L	ND	0.010	0.000080	04/11/19 20:42	
Silver	mg/L	ND	0.010	0.000050	04/11/19 20:42	
Thallium	mg/L	ND	0.0010	0.000060	04/11/19 20:42	
Vanadium	mg/L	ND	0.010	0.00012	04/11/19 20:42	
Zinc	mg/L	ND	0.010	0.0011	04/11/19 20:42	

LABORATORY CONTROL SAMPLE: 2545264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.01	0.0099	99	80-120	
Barium	mg/L	0.05	0.049	99	80-120	
Beryllium	mg/L	0.01	0.010	104	80-120	
Boron	mg/L	0.05	0.052J	104	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.051	102	80-120	
Cobalt	mg/L	0.01	0.010	102	80-120	
Copper	mg/L	0.05	0.051	103	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Lithium	mg/L	0.05	0.050	100	80-120	
Molybdenum	mg/L	0.05	0.051	102	80-120	
Nickel	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Silver	mg/L	0.025	0.025	102	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2617207

LABORATORY CONTROL SAMPLE: 2545264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	0.05	0.051	101	80-120	
Zinc	mg/L	0.05	0.051	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266

Parameter	Units	2545265		2545266		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Arsenic	mg/L	0.01	0.01	0.0091J	0.0089J	91	89	75-125	2	20	
Barium	mg/L	0.05	0.05	0.085	0.085	85	85	75-125	0	20	
Beryllium	mg/L	0.01	0.01	0.0086	0.0089	86	89	75-125	4	20	
Boron	mg/L	1.0J	0.05	0.05	1.0J	67	48	75-125	1	20 M6	
Cadmium	mg/L	0.01	0.01	0.011	0.011	99	99	75-125	0	20	
Calcium	mg/L	70.0	0.62	0.62	71.3	74.8	207	759	75-125	5	20 M6
Chromium	mg/L	0.05	0.05	0.048	0.048	96	95	75-125	1	20	
Cobalt	mg/L	0.01	0.01	0.015	0.015	97	96	75-125	1	20	
Copper	mg/L	0.05	0.05	0.049	0.048	98	97	75-125	1	20	
Lead	mg/L	0.05	0.05	0.048	0.048	96	96	75-125	0	20	
Lithium	mg/L	0.05	0.05	0.043J	0.044J	82	85	75-125	3	20	
Molybdenum	mg/L	0.05	0.05	0.050	0.049	99	99	75-125	1	20	
Nickel	mg/L	0.05	0.05	0.051	0.051	96	96	75-125	0	20	
Selenium	mg/L	0.05	0.05	0.044	0.044	89	88	75-125	1	20	
Silver	mg/L	0.025	0.025	0.023	0.023	92	91	75-125	1	20	
Thallium	mg/L	0.01	0.01	0.0096	0.0096	96	96	75-125	0	20	
Vanadium	mg/L	0.05	0.05	0.050	0.050	100	100	75-125	0	20	
Zinc	mg/L	0.05	0.05	0.047	0.047	86	86	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617207

QC Batch: 26135 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617207001, 2617207002

METHOD BLANK: 117979 Matrix: Water
Associated Lab Samples: 2617207001, 2617207002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.064J	0.25	0.024	04/10/19 21:47	
Fluoride	mg/L	ND	0.30	0.029	04/10/19 21:47	
Sulfate	mg/L	ND	1.0	0.017	04/10/19 21:47	

LABORATORY CONTROL SAMPLE: 117980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	10.0	100	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117981 117982

Parameter	Units	2617207001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Chloride	mg/L	0.25J	10	10	9.9	10	96	97	90-110	1	15	
Fluoride	mg/L	ND	10	10	9.5	9.6	95	96	90-110	1	15	
Sulfate	mg/L	0.13J	10	10	9.5	9.6	94	94	90-110	1	15	

MATRIX SPIKE SAMPLE: 117983

Parameter	Units	2617150001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	131	10	10.5	-1210	90-110	
Fluoride	mg/L	0.13J	10	9.4	93	90-110	
Sulfate	mg/L	392	10	13.7	-3780	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 2617207

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617207

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617207001	FB-02	EPA 3010A	468622	EPA 6020B	468673
2617207002	EB-01	EPA 3010A	468622	EPA 6020B	468673
2617207001	FB-02	EPA 7470A	468895	EPA 7470A	468941
2617207002	EB-01	EPA 7470A	468895	EPA 7470A	468941
2617207001	FB-02	SM 2540C	26252		
2617207002	EB-01	SM 2540C	26252		
2617207001	FB-02	EPA 300.0	26135		
2617207002	EB-01	EPA 300.0	26135		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 2617207

PM: **BM** Due Date: **04/16/19**
 CLIENT: **GAPower-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 0.7 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 4/9/19 MK

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>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution: _____ Field Data Required? Y / N
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

May 01, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2617208

Dear Joju Abraham:

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

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617208

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617208

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617208001	FB-02	Water	04/08/19 17:45	04/09/19 13:30
2617208002	EB-01	Water	04/08/19 18:00	04/09/19 13:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617208

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617208001	FB-02	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617208002	EB-01	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 2617208

Sample: FB-02 **Lab ID: 2617208001** Collected: 04/08/19 17:45 Received: 04/09/19 13:30 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample collection time on containers does not match COC; client was notified.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.170 ± 0.1000 (0.159) C:93% T:NA	pCi/L	04/22/19 21:19	13982-63-3	
Radium-228	EPA 9320	0.521 ± 0.334 (0.615) C:78% T:79%	pCi/L	04/25/19 14:16	15262-20-1	
Total Radium	Total Radium Calculation	0.691 ± 0.434 (0.774)	pCi/L	04/26/19 09:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 2617208

Sample: EB-01 **Lab ID: 2617208002** Collected: 04/08/19 18:00 Received: 04/09/19 13:30 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample collection time on containers does not match COC; client was notified.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.108 ± 0.128 (0.243) C:87% T:NA	pCi/L	04/22/19 21:19	13982-63-3	
Radium-228	EPA 9320	0.370 ± 0.318 (0.634) C:81% T:75%	pCi/L	04/25/19 14:16	15262-20-1	
Total Radium	Total Radium Calculation	0.478 ± 0.446 (0.877)	pCi/L	04/26/19 09:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 2617208

QC Batch: 338631

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617208001, 2617208002

METHOD BLANK: 1648339

Matrix: Water

Associated Lab Samples: 2617208001, 2617208002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.146 ± 0.0893 (0.139) C:90% T:NA	pCi/L	04/22/19 21:19	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond

Pace Project No.: 2617208

QC Batch: 338745

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617208001, 2617208002

METHOD BLANK: 1648702

Matrix: Water

Associated Lab Samples: 2617208001, 2617208002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.552 ± 0.362 (0.681) C:81% T:74%	pCi/L	04/25/19 11:04	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617208

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2617208

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617208001	FB-02	EPA 9315	338631		
2617208002	EB-01	EPA 9315	338631		
2617208001	FB-02	EPA 9320	338745		
2617208002	EB-01	EPA 9320	338745		
2617208001	FB-02	Total Radium Calculation	340066		
2617208002	EB-01	Total Radium Calculation	340066		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joy Abraham	Attention:	sesinvoic@scouthernco.com
Address:	2480 Minter Road Atlanta, GA 30339	Copy To:	Lauron Peby, Geosyntec	Company Name:	
Email:	jabraham@scouthernco.com	Purchase Order #:	9C5T0348666	Address:	
Phone:	(404)506-7239	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@paceclabs.com
Requested Due Date:	Standard TX	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)
Regulatory Agency:		State Location:		GA	

Page: 1 of 1

ITEM #	MATRIX CODE DW Drinking Water WT Waste Water P Product SL Soil/Solid OI Oil WI Wipe AR Air OT Other TS Tissue	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	PRESERVATIVES	ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)	RESIDUAL CHLORINE (Y/N)
			START	END							
1		WT 6	4/8/19 1340	4/8/19 1345	19	5	2	3			
2	FB -02	WT 6	4/8/19 1355	4/8/19 1800	19	5	2	3			
3	EB -01										
4											
5											
6											
7											
8											
9											
10											
11											
12											

RM 4/8/19

WO#: 2617208

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received on	Sealed	Cooler	Samples
	Noelia Munson Geosyntec	4/8/19	2010	EB Low / Geosyntec	4/8/19	2210					
	EB Low / Geosyntec	4/9/19	1127	1 Pace	4/9/19	1127					
				Noelia Munson	4/9/19	1330	0.7				

SAMPLER NAME AND SIGNATURE
 PRINT NAME of SAMPLER: Noelia Munson
 SIGNATURE of SAMPLER: Noelia Munson
 DATE SIGNED: 4/8/19

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 2617208

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

PM: BM Due Date: 05/07/19

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 0.7

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/9/19 NR

Temp should be above freezing to 6°C

Comments: _____

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

Client Notification/Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Field Data Required? Y / N

Project Manager Review: _____ Date: _____

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

June 20, 2019

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

RE: Project: Plant Hammond
Pace Project No.: 2619807

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2619807

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2619807

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2619807001	EB-01	Water	06/17/19 09:54	06/18/19 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 2619807

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2619807001	EB-01	EPA 6020B	CSW	3
		SM 2540C	M1O	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2619807

Sample: EB-01		Lab ID: 2619807001		Collected: 06/17/19 09:54	Received: 06/18/19 12:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Barium	ND	mg/L	0.010	0.00049	1	06/18/19 16:30	06/19/19 16:47	7440-39-3		
Boron	ND	mg/L	0.040	0.0049	1	06/18/19 16:30	06/19/19 16:47	7440-42-8		
Calcium	ND	mg/L	0.10	0.011	1	06/18/19 16:30	06/19/19 16:47	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	14.0	mg/L	10.0	10.0	1		06/19/19 17:31			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.93	mg/L	0.25	0.024	1		06/20/19 06:47	16887-00-6		
Fluoride	0.33	mg/L	0.30	0.029	1		06/20/19 06:47	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		06/20/19 06:47	14808-79-8		

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2619807

QC Batch: 30489 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2619807001

METHOD BLANK: 137204 Matrix: Water
Associated Lab Samples: 2619807001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00049	06/19/19 15:18	
Boron	mg/L	ND	0.040	0.0049	06/19/19 15:18	
Calcium	mg/L	ND	0.10	0.011	06/19/19 15:18	

LABORATORY CONTROL SAMPLE: 137205

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.095	95	80-120	
Boron	mg/L	1	0.96	96	80-120	
Calcium	mg/L	1	0.91	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 137206 137207

Parameter	Units	2619806001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.052	0.1	0.1	0.15	0.15	100	100	75-125	0	20	
Boron	mg/L	1.1	1	1	2.1	2.1	97	100	75-125	1	20	
Calcium	mg/L	164	1	1	168	176	381	1150	75-125	4	20 M6	

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2619807

QC Batch: 30523	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2619807001	

LABORATORY CONTROL SAMPLE: 137322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	414	104	84-108	

SAMPLE DUPLICATE: 137323

Parameter	Units	2619806002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	751	783	4	10	

SAMPLE DUPLICATE: 137664

Parameter	Units	2619850002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	233	256	9	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2619807

QC Batch: 30603 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2619807001

METHOD BLANK: 137790 Matrix: Water
Associated Lab Samples: 2619807001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/20/19 03:46	
Fluoride	mg/L	ND	0.30	0.029	06/20/19 03:46	
Sulfate	mg/L	ND	1.0	0.017	06/20/19 03:46	

LABORATORY CONTROL SAMPLE: 137791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.9	99	90-110	
Fluoride	mg/L	10	9.7	97	90-110	
Sulfate	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 137792 137793

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2619806001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	3.0	10	10	12.2	12.3	91	93	90-110	1	15		
Fluoride	mg/L	1.2	10	10	10.2	10.3	90	91	90-110	1	15		
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15	E,M1	
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15	E,M1	

MATRIX SPIKE SAMPLE: 137794

Parameter	Units	2619806002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	32.9	10	39.1	62	90-110	M1
Fluoride	mg/L	0.97	10	10.3	93	90-110	
Sulfate	mg/L	219	10	184	-348	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 2619807

DEFINITIONS

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MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

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MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2619807

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619807001	EB-01	EPA 3005A	30489	EPA 6020B	30498
2619807001	EB-01	SM 2540C	30523		
2619807001	EB-01	EPA 300.0	30603		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joy Abraham, Lauren Petty	Attention:	scsinvoices@southemco.com
Address:	2480 Manser Road Atlanta, GA 30339	Copy To:	Geosyntec	Company Name:	
Email:	jabraham@southemco.com	Purchase Order #:	SCS10382775	Address:	
Phone:	(404)506-7239	Project Name:	Plant Hammond Resample	Pace Quote:	batsy.mcdamie@paccelabs.com
Requested Due Date:	Standard	Project #:	620591	Pace Profile #:	327 (AP) or 328 (Huff)

Page: 1 of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Barium	Boron	Calcium	Chloride	Fluoride	Sulfate	TDS	Residual Chlorine (Y/N)	TEMP in C	Ice Received on	Custody Sealed Cooker (Y/N)	Samples Intact (Y/N)
			START DATE TIME	END DATE TIME																	
1	Drinking Water	DW	6/17/19 9:59 AM	6/17/19 9:59 AM	G-GRAB C-COMP	W6	2	Unpreserved													
2	Waste Water	WW																			
3	Product	P																			
4	Soil/Sediment	SL																			
5	Oil	OL																			
6	Wipe	WP																			
7	Air	AR																			
8	Other	OT																			
9	Tissue	TS																			

NO#: 2619807

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Dalton Anderson (Geo)	6/17/19	18:00	Melvin Mubush (Geosyntec)	6/17/19	18:00	
Melvin Mubush (Geo)	6/18/19	08:30	Yoda Rahman	6/18/19	08:30	
			Yoda Rahman	6/18/19	12:00	
						0.7 7 7 7

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Dalton Anderson
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 6/17/19

Sample Condition Upon Receipt

Face Analytical

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
Tracking #: _____

WO#: 2619807

PM: **BM** Due Date: **06/20/19**
CLIENT: **GAPower-CCR**

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

Packing Material: Bubble Wrap Bubble Bags None Other

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

Cooler Temperature 0.7 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/18/19 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>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):	_____	

Client Notification/ Resolution: _____ Field Data Required? Y / N
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

June 20, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2619809

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2619809

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2619809

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2619809001	HGWC-109	Water	06/17/19 09:51	06/18/19 12:00
2619809002	HGWC-107	Water	06/17/19 11:08	06/18/19 12:00
2619809003	HGWC-105	Water	06/17/19 12:24	06/18/19 12:00
2619809004	HGWC-103	Water	06/17/19 13:41	06/18/19 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2619809

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2619809001	HGWC-109	EPA 6020B	CSW	1
		EPA 300.0	MWB	1
2619809002	HGWC-107	EPA 6020B	CSW	2
		SM 2540C	M1O	1
2619809003	HGWC-105	EPA 300.0	MWB	2
		EPA 6020B	CSW	1
2619809003	HGWC-105	SM 2540C	M1O	1
		EPA 300.0	MWB	1
2619809004	HGWC-103	EPA 6020B	CSW	2
		SM 2540C	M1O	1
		EPA 300.0	MWB	2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619809

Sample: HGWC-109		Lab ID: 2619809001		Collected: 06/17/19 09:51	Received: 06/18/19 12:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.37	mg/L	0.040	0.0049	1	06/18/19 16:30	06/19/19 16:53	7440-42-8	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	30.9	mg/L	1.0	0.017	1		06/20/19 07:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619809

Sample: HGWC-107		Lab ID: 2619809002		Collected: 06/17/19 11:08	Received: 06/18/19 12:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	0.86	mg/L	0.040	0.0049	1	06/18/19 16:30	06/19/19 17:04	7440-42-8		
Calcium	55.3	mg/L	5.0	0.55	50	06/18/19 16:30	06/19/19 17:10	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	272	mg/L	10.0	10.0	1		06/19/19 17:31			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	2.9	mg/L	0.25	0.024	1		06/20/19 07:55	16887-00-6		
Sulfate	126	mg/L	10.0	0.17	10		06/20/19 07:32	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619809

Sample: HGWC-105		Lab ID: 2619809003		Collected: 06/17/19 12:24	Received: 06/18/19 12:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Calcium	81.2	mg/L	5.0	0.55	50	06/18/19 16:30	06/19/19 17:21	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	370	mg/L	10.0	10.0	1		06/19/19 17:33		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	162	mg/L	10.0	0.17	10		06/20/19 09:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619809

Sample: HGWC-103		Lab ID: 2619809004		Collected: 06/17/19 13:41	Received: 06/18/19 12:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	2.3	mg/L	0.040	0.0049	1	06/18/19 16:30	06/19/19 17:38	7440-42-8		
Calcium	92.6	mg/L	5.0	0.55	50	06/18/19 16:30	06/19/19 17:44	7440-70-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	515	mg/L	10.0	10.0	1		06/19/19 17:33			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	5.2	mg/L	0.25	0.024	1		06/20/19 10:34	16887-00-6		
Sulfate	311	mg/L	10.0	0.17	10		06/20/19 10:11	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2619809

QC Batch: 30489 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET
 Associated Lab Samples: 2619809001, 2619809002, 2619809003, 2619809004

METHOD BLANK: 137204 Matrix: Water
 Associated Lab Samples: 2619809001, 2619809002, 2619809003, 2619809004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0049	06/19/19 15:18	
Calcium	mg/L	ND	0.10	0.011	06/19/19 15:18	

LABORATORY CONTROL SAMPLE: 137205

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.96	96	80-120	
Calcium	mg/L	1	0.91	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 137206 137207

Parameter	Units	2619806001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	1.1	1	1	2.1	2.1	97	100	75-125	1	20	
Calcium	mg/L	164	1	1	168	176	381	1150	75-125	4	20 M6	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2619809

QC Batch: 30523 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 2619809002, 2619809003, 2619809004

LABORATORY CONTROL SAMPLE: 137322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	414	104	84-108	

SAMPLE DUPLICATE: 137323

Parameter	Units	2619806002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	751	783	4	10	

SAMPLE DUPLICATE: 137664

Parameter	Units	2619850002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	233	256	9	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2619809

QC Batch: 30603 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2619809001, 2619809002, 2619809003, 2619809004

METHOD BLANK: 137790 Matrix: Water
Associated Lab Samples: 2619809001, 2619809002, 2619809003, 2619809004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	06/20/19 03:46	
Sulfate	mg/L	ND	1.0	0.017	06/20/19 03:46	

LABORATORY CONTROL SAMPLE: 137791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.9	99	90-110	
Sulfate	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 137792 137793

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2619806001 Result	Spike Conc.	Spike Conc.	MS Result						
Chloride	mg/L	3.0	10	10	12.2	12.3	91	93	90-110	1	15
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15 E,M1
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15 E,M1

MATRIX SPIKE SAMPLE: 137794

Parameter	Units	2619806002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		32.9	10	39.1	62	90-110 M1
Sulfate	mg/L		219	10	184	-348	90-110

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2619809

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 2619809

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619809001	HGWC-109	EPA 3005A	30489	EPA 6020B	30498
2619809002	HGWC-107	EPA 3005A	30489	EPA 6020B	30498
2619809003	HGWC-105	EPA 3005A	30489	EPA 6020B	30498
2619809004	HGWC-103	EPA 3005A	30489	EPA 6020B	30498
2619809002	HGWC-107	SM 2540C	30523		
2619809003	HGWC-105	SM 2540C	30523		
2619809004	HGWC-103	SM 2540C	30523		
2619809001	HGWC-109	EPA 300.0	30603		
2619809002	HGWC-107	EPA 300.0	30603		
2619809003	HGWC-105	EPA 300.0	30603		
2619809004	HGWC-103	EPA 300.0	30603		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manor Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)508-7239 Fax:
 Requested Due Date: ~~Standard~~

Section B
 Required Project Information:
 Report To: Jiju Abraham, Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10382775
 Project Name: Plant Hammond Resample
 Project #: **GNG0581**

Section C
 Invoice Information:
 Attention: sscnwvoic@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.medanet@pacelabs.com
 Pace Profile #: 327 (AP) or 328 (Huff)
 GA

ITEM #	MATRIX		SAMPLE CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	PRESERVATIVES										ANALYSIS TEST	Residual Chrome (Y/N)				
	DM	WT			START DATE TIME	END DATE TIME		H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Barium	Boron	Calcium			Chloride	Fluoride	Sulfate	TDS
1			WTG	G	06/17	9:46	06/17	9:51	1P	2	1									X			N
2			WT	G	06/17	11:02	06/17	11:08	1P	2	1									X			N
3			WTG	G	06/17	12:19	06/17	12:24	2P	2	1									X			N
4			WTG	G	06/17	13:35	06/17	13:41	1P	2	1									X			N
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

NO#: 2619809

2619809

ADDITIONAL COMMENTS	REQUESTED (E)/ AFFILIATION	DATE	TIME	ACCEPTED (E)/ AFFILIATION	DATE	TEMP in C	Received on	Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
	Great Walter / Geosyntec	06/17/19	16:31	Dalton Anderson (Geo)	06/17/19						
	Dalton Anderson (Geo)	06/17/19	18:00	Melina Mubun (Geosyntec)	06/17/19						
	Melina Mubun (Geo)	06/18/19	08:30	MA RAHMAN	06/18/19						
				MDA LUONAN	06/18/19	1200:07					

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Great Walter DATE Signed: 06/17/19
 SIGNATURE of SAMPLER: Great Walter



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: **2619809**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 0.7 Biological Tissue is Frozen: Yes No

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

PM: BM Due Date: 06/20/19 CLIENT: GAPower-CCR

Date and Initials of person examining contents: 6/18/19 MK

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>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

June 21, 2019

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

RE: Project: Plant Hammond AP
Pace Project No.: 2619848

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond AP

Pace Project No.: 2619848

Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 2619848

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2619848001	HGWC-101	Water	06/18/19 09:36	06/19/19 09:50
2619848002	HGWC-118	Water	06/18/19 10:27	06/19/19 09:50
2619848003	HGWC-117	Water	06/18/19 11:36	06/19/19 09:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP

Pace Project No.: 2619848

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2619848001	HGWC-101	EPA 300.0	MWB	1
2619848002	HGWC-118	EPA 6020B	CSW	1
		SM 2540C	M1O	1
		EPA 300.0	MWB	2
2619848003	HGWC-117	EPA 6020B	CSW	1
		SM 2540C	M1O	1
		EPA 300.0	MWB	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619848

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWC-101									
Lab ID: 2619848001									
Collected: 06/18/19 09:36									
Received: 06/19/19 09:50									
Matrix: Water									
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Sulfate	102	mg/L	10.0	0.17	10		06/20/19 11:41	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619848

Sample: HGWC-118		Lab ID: 2619848002		Collected: 06/18/19 10:27	Received: 06/19/19 09:50	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Calcium	76.5	mg/L	5.0	0.55	50	06/19/19 16:00	06/20/19 16:09	7440-70-2	M6
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	215	mg/L	10.0	10.0	1		06/19/19 17:35		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.89	mg/L	0.30	0.029	1		06/20/19 12:27	16984-48-8	
Sulfate	77.0	mg/L	10.0	0.17	10		06/20/19 12:04	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2619848

Sample: HGWC-117		Lab ID: 2619848003		Collected: 06/18/19 11:36	Received: 06/19/19 09:50	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Calcium	36.3	mg/L	5.0	0.55	50	06/19/19 16:00	06/20/19 17:05	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	254	mg/L	10.0	10.0	1		06/19/19 17:34		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	116	mg/L	10.0	0.17	10		06/20/19 16:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2619848

QC Batch: 30563

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020B MET

Associated Lab Samples: 2619848002, 2619848003

METHOD BLANK: 137554

Matrix: Water

Associated Lab Samples: 2619848002, 2619848003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.011	06/20/19 15:52	

LABORATORY CONTROL SAMPLE: 137555

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.97	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 137556 137557

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2619848002 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	76.5	1	1	1	78.8	76.5	235	2	75-125	3	20	M6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP
Pace Project No.: 2619848

QC Batch: 30523 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2619848002, 2619848003

LABORATORY CONTROL SAMPLE: 137322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	414	104	84-108	

SAMPLE DUPLICATE: 137323

Parameter	Units	2619806002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	751	783	4	10	

SAMPLE DUPLICATE: 137664

Parameter	Units	2619850002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	233	256	9	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond AP

Pace Project No.: 2619848

QC Batch: 30603 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Associated Lab Samples: 2619848001, 2619848002, 2619848003

METHOD BLANK: 137790 Matrix: Water

Associated Lab Samples: 2619848001, 2619848002, 2619848003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	06/20/19 03:46	
Sulfate	mg/L	ND	1.0	0.017	06/20/19 03:46	

LABORATORY CONTROL SAMPLE: 137791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.7	97	90-110	
Sulfate	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 137792 137793

Parameter	Units	2619806001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Fluoride	mg/L	1.2	10	10	10.2	10.3	90	91	90-110	1	15	
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE: 137794

Parameter	Units	2619806002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.97	10	10.3	93	90-110	
Sulfate	mg/L	219	10	184	-348	90-110	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2619848

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP

Pace Project No.: 2619848

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619848002	HGWC-118	EPA 3005A	30563	EPA 6020B	30597
2619848003	HGWC-117	EPA 3005A	30563	EPA 6020B	30597
2619848002	HGWC-118	SM 2540C	30523		
2619848003	HGWC-117	SM 2540C	30523		
2619848001	HGWC-101	EPA 300.0	30603		
2619848002	HGWC-118	EPA 300.0	30603		
2619848003	HGWC-117	EPA 300.0	30603		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Section B Required Project Information: Section C Invoice Information:

Report To: Jigu Abraham, Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10382775
 Project Name: Plant Hammond Resample
 Project #: **GW6581**
 Requested Due Date: **2 Day TAT**
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manner Road, Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404) 506-7239
 Attention: scsinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 327 (AP) or 328 (Huff)
 State / Location:
 GA

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS		ANALYSES TEST										TEMP IN C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooker (Y/N)	Samples Intact (Y/N)																
		START DATE	END DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME																								
1	HGWC-101	WT	G	06/18	09:27	06/18	09:36	20	1	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Barium	Boron	Calcium	Chloride	Fluoride	Sulfate	TDS																	
2	HGWC-118	WT	G	06/18	10:17	06/18	10:27	19	2														X																	
3	HGWC-117	WT	G	06/18	11:29	06/18	11:36	19	2														X																	
4																																								
5																																								
6																																								
7																																								
8																																								
9																																								
10																																								
11																																								
12																																								

GW 06/18/19

WO#: 2619848

ADDITIONAL COMMENTS	RELEASED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONSULTER
	Grant Walter/Geosyntec	06/18/19	16:15	Dalton Anderson (Geo)	06/19/19	11:15	
	Dalton Anderson (Geo)	06/18/19	16:00	Melina Muehlen (Geo)	06/19/19	18:00	
	Melina Muehlen (Geo)	06/19/19	08:50	Grant Walter	06/19/19	09:50	2.0 Y Y Y

SAMPLER NAME AND SIGNATURE: *Grant Walter*
 PRINT Name of SAMPLER: Grant Walter
 SIGNATURE OF SAMPLER: *Grant Walter*
 DATE Signed: 06/18/19

Sample Condition Upon Receipt

Face Analytical

Client Name: GA Power

Project # _____

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 83

Type of Ice: Wet Blue None

Samples on ice. cooling process has begun

Cooler Temperature 2.0

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

WO#: 2619848

PM: BM

Due Date: 06/21/19

CLIENT: GAPower-CCR

Date and Initials of person examining contents: 6/19/19 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7. <u>48 hr. TAT.</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):	_____	

Client Notification/ Resolution:

Field Data Required?

Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

Data Validation Reports

**Stage 2A Data Verification Report
Georgia Power
Hammond Fossil Plant
Site Ash Pond 3 & 4
Coal Combustion Residuals Project
Groundwater Samples**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the 102 groundwater samples collected as part of the eight rounds of 2016-2018 baseline monitoring, at the Georgia Power Hammond Fossil Plant facility. These samples were collectively analyzed by Pace Analytical Services, Inc. (Pace), of Peachtree Corners, Georgia, for total metals by SW-846 Method 6020B; for total mercury by SW-846 Method 7470A; for total dissolved solids (TDS) by Standard Methods (SM) 2540C; and for anions (specifically, chloride, fluoride, and sulfate) by US EPA Method 300.0. In addition, these samples were collectively analyzed by Pace of Greensburg, Pennsylvania, for total radium-226 by SW-846 Method 9315, for total radium-228 by SW-846 Method 9320, and for combined radium-226+228 by calculation.

This review was performed with guidance from the US EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); the US EPA Region IV Data Validation Standard Operating Procedures (SOPs; US EPA Region IV, September 2011); and the applied analytical methods. These validation guidance documents, with the exception of the analytical methods, specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SW-846, US EPA, and SM methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SW-846, US EPA, and SM methods utilized by the laboratory.

Summary

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to ensure that the data met the established data quality objectives.

The following sampling events were evaluated as part of this QA review: Event 1, collected 8/30/2016 through 8/31/2016; Event 2, collected 10/20/2016 through 11/7/2016; Event 3, collected 1/13/2017 through 1/31/2017; Event 4, collected 5/23/2017 through 6/3/2017; Event 5, collected 8/11/2017 through 10/2/2017; Event 6, collected 11/13/2017 through 11/15/2017;

Event 7, collected 6/4/2018 through 6/7/2018; and Event 8, collected 10/1/2018 through 10/5/2018.

The following samples were evaluated as part of this QA review: HGWA-111, HGWA-112, HGWA-113, HGWA-122, HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118, HGWC-120, HGWC-121, HGWC-121A, and HGWC-124.

The following Pace inorganic Sample Delivery Groups (SDGs) were evaluated as part of this QA review: AZH0983, AZI0019, AZJ0623, AZJ0697, AZJ0726, AZJ0820, AZK0264, AAA0455, AAA0861, AAA0924, AAB0021, AAE0811, AAE0857, AAE0898, AAF0136, AAH0433, AAJ0054, AAK0534, AAK0578, 265790, 265791, 265794, 265859, 265864, 265888, 265889, 269951, 2610033, 2610037, 2610112, and 2610210.

The following Pace radiological SDGs were evaluated as part of this QA review: 30194831, 30195007, 30200226, 30200506, 30200747, 30201008, 30202041, 30208165, 30209139, 30209265, 30209600, 30219828, 30219999, 30220164, 30220780, 30227120, 30232039, 30236279, 30236436, 265790, 265791, 265794, 265859, 265864, 265888, 265889, 269952, 2610034, 2610038, 2610113, and 2610211.

All data are considered usable as reported, or usable after integration of data validation qualifications.

Inorganic and Radiological Data Review

Data validation was performed for these samples based on the sample results, summary QC data, and raw data provided by the laboratory. The findings offered in this report for the inorganic analyses are based upon a review of the following QC measures:

- Sample condition upon laboratory receipt
- Chain-of-Custody (COC) Records
- Blank analysis results
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries and precision
- Laboratory duplicate precision
- Sample holding times
- Case Narratives
- Chemical yield
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision
- Field duplicate precision

The above QC measures were evaluated against the analytical method requirements and QC acceptance criteria. The data were validated based on guidance from the US EPA Region IV Data Validation SOPs, the referenced procedures, and were qualified as appropriate as described in the sections below.

Comments and Exceptions

1. In the metals fraction, the laboratory did not report a set number of significant figures for results < 0.1 mg/L. All results that were < 0.1 mg/L were reported to four decimal places. As a result, reported sample results ranged from one to three significant figures. In addition, the anions results < 1 mg/L were reported to two decimal places, which led to sample results with 1 to 2 significant figures.
2. The data validator applied qualification to combined radium-226+228 based upon the QC samples associated with the analyses of the individual isotopes, radium-226 and radium-228. The electronic data deliverable (EDD) and the database only include the laboratory results for the combined radium-226+228; therefore, qualification of the individual isotopes is not addressed in this QA review.
3. SW-846 Method 9315 includes all alpha-emitting isotopes of radium. In order to analyze for only radium-226, a 21-day ingrowth period must be used. The radium-226 reported by the laboratory did not undergo a 21-day ingrowth; therefore, the results reported as radium-226 potentially contain additional alpha-emitting radium isotopes and could be high biased.
4. Combined radium-226+228 was reported as the summation of the calculated activities for radium-226 and radium-228. As consistent with routine radiological reporting conventions, negative activities were reported for the radium-226 and radium-228 analyses; however, all negative activities were entered as zero in the calculation of combined radium-226+228 activity.
5. The combined radium-226+228 sample-specific minimum detectable concentration (MDC) was reported as the summation of the MDCs for radium-226 and radium-228.

Consequently, there may be instances where a detection was observed in one of the individual isotopes but the combined radium-226+228 result was reported as “not-detected” due to the laboratory’s reporting convention for combined radium-226+228.

6. The combined radium-226+228 result uncertainty was reported as the summation of the calculated uncertainties for radium-226 and radium-228. If routine statistical uncertainty reporting conventions were followed, the result uncertainty would have been reported as the root sum square (RSS; the square root of the sum of the squared individual uncertainties).
7. The laboratory did not flag results < the MDC as “not-detected” in the data package provided. The data validator qualified these samples as “U” on the data tables.
8. In SDG 30195007, the laboratory Case Narrative indicated that insufficient sample volume was received for sample HGWC-118. This sample was not analyzed for radium-226 or radium-228 as part of sampling Event 1.
9. In SDG 30200226, the laboratory did not provide the original COC associated with the radium analysis. As this item was not needed to complete the data validation and had been included in SDG AZJ0623, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
10. In SDG 30232039, the laboratory did not provide the original COC associated with the radium analysis. As this item was not needed to complete the data validation and had been included in SDG AAJ0054, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
11. The data package for the radium analyses in SDG 30227120 did not include the Quality Control Sample Performance Assessment summaries for the associated analytical batches. The summaries for two batches, 268401 and 268400, were obtained from the data package for SDG 30227121. Data were not qualified due to this issue.
12. In SDG 30236279, the sample identification (ID) on the COC for sample HGWC-103 had been logged in by the laboratory as HGWA-103; therefore, the sample ID on the COC and laboratory data report do not match. Qualification of data due to this issue was not warranted.
13. In SDGs AAA0455 and 30208165, the collection date for sample HGWC-121 was listed as “1/13/16” on the COC. The correct collection date for sample HGWC-121 was 1/13/17. The laboratory logged in this sample using the correct collection date. Qualification of data due to this issue was not warranted.
14. In SDGs AAE0898 and 30220164, the laboratory noted on the COC that the labels for sample HGWC-120 listed the sample ID as “HGWC-121.” The laboratory logged in this sample as HGWC-120 according to the COC. Qualification of data due to this issue was not warranted.
15. In SDGs 2610037 and 2610038, the sample collection date for all samples was listed as “10/2” on the COC. The complete collection date for these samples was 10/2/18. The laboratory logged in these samples using the complete sample collection date. Qualification of data due to this issue was not warranted.

16. In SDG 30236279, the laboratory did not provide the original COC associated with the radium analysis. As this item was not needed to complete the data validation and had been included in SDG AAK0534, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
17. In SDG 30236436, the laboratory did not provide the original COC associated with the radium analysis. As this item was not needed to complete the data validation and had been included in SDG AAK0578, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
18. In Event 7 SDGs 265790, 265791, 265794, 265859, 265864, 265888, and 265889 the laboratory did not provide the subcontracted COC Record or the Sample Login Receipt Checklist from Pace in Greensburg, Pennsylvania. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
19. In Event 8 SDGs 269952, 2610034, 2610038, 2610113, and 2610211 the laboratory did not provide the subcontracted COC Record or the Sample Login Receipt Checklist from Pace in Greensburg, Pennsylvania. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
20. In several SDGs, Pace Atlanta did not relinquish the samples to Pace Pittsburgh on the subcontracted COC Record. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
21. The following field duplicate pairs (see table) were submitted and analyzed for inorganic and radiological parameters with this data set. Acceptable precision and sample representativeness (the relative percent difference [RPD] between results was $\leq 20\%$ when both results were $\geq 5\times$ the reporting limit [RL], the difference between results was \leq the RL when at least one result was $< 5\times$ the RL, or replicate error ratio [RER] < 3) were demonstrated by the reported results in the field duplicate pair evaluation with the exception of the parameters indicated in the Overall Assessment of Data Section below.

<u>Laboratory SDG(s)</u>	<u>Sample</u>	<u>Field Duplicate</u>
AZI0019 30195007	HGWC-103	Dup-1
AZJ0623 30200226	HGWC-117	Dup-1
AAA0924 30209265	HGWC-120	Dup-1
AAE0811 30219828	HGWC-118	Dup-1
AAK0578 30236436	HGWC-124	Dup-1
265859	HGWC-103	FD-02
2610112 2610113	HGWC-117	FD-03
2610210 2610211	HGWC-121A	FD-05

Overall Assessment of Data

Based on a review of the data, qualification of data was warranted as noted below.

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
AZH0983	1	all samples	mercury	U*	BL – Method blank contamination
AZI0019	1	HGWC-117 and HGWC-120	mercury	U*	BL – Method blank contamination
30195007	1	HGWC-117, HGWC-124, and HGWC-121	combined radium-226+228	U*	BL – Method blank contamination
AZH0983	1	all samples	fluoride	U*	BF – Field blank contamination
AZI0019	1	HGWC-117, HGWC-124, HGWC-118, HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-121, and HGWC-109	fluoride	U*	BF – Field blank contamination
AZH0983	1	HGWA-122	boron	U*	BE – Equipment blank contamination
AZI0019	1	HGWC-124, HGWC-101, and HGWC-109	boron	U*	BE – Equipment blank contamination
30195007	1	HGWC-117, HGWC-124, HGWC-107, HGWC-121, HGWC-109, and HGWC-103	combined radium-226+228	U*	BE – Equipment blank contamination
30200226	2	HGWC-118 and HGWC-101	combined radium-226+228	U*	BL – Method blank contamination
AZJ0623	2	all samples	fluoride	U*	BF – Field blank contamination
AZJ0697	2	HGWA-112 and HGWC-103	fluoride	U*	BF – Field blank contamination
AZJ0726	2	HGWC-105	fluoride	U*	BF – Field blank contamination
AAB0021	3	HGWC-103, HGWC-101, and HGWC-118	mercury	U*	BL – Method blank contamination
AAA0861	3	all samples	mercury	U*	BF – Field blank contamination BE – Equipment blank contamination

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
AAB0021	3	HGWC-103, HGWC-101, HGWC-118, and HGWC-109	mercury	U*	BF – Field blank contamination BE – Equipment blank contamination
30209600	3	HGWC-118 and HGWC-107	combined radium-226+228	U*	BL – Method blank contamination BE – Equipment blank contamination
AAF0136	4	HGWC-121A	arsenic	U*	BF – Field blank contamination
AAE0898	4	all samples	mercury	U*	BE – Equipment blank contamination
AAH0433	5	all samples	fluoride	U*	BL – Method blank contamination
30236436	6	HGWC-120	combined radium-226+228	U*	BL – Method blank contamination
AAK0534	6	HGWA-112	sulfate	U*	BF – Field blank contamination
269951	8	all samples	mercury	U*	BL – Method blank contamination
269951	8	HGWA-111 and HGWA-113	boron	U*	BF – Field blank contamination
30195007	1	HGWC-120	combined radium-226+228	J	BL – Method blank contamination BE – Equipment blank contamination
265790	7	HGWA-112	TDS	J	BF – Field blank contamination
265794	7	HGWA-113	TDS	J	BF – Field blank contamination
265859	7	HGWC-103	sulfate	J	H – Holding time exceeded
265888	7	HGWC-117	sulfate	J	H – Holding time exceeded
265889	7	HGWC-118	sulfate	J	H – Holding time exceeded
30200226	2	HGWC-118 and HGWC-101	combined radium-226+228	J (unless previously flagged "U**")	L+ – High LCS recovery

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
30200747	2	HGWC-105 and HGWC-109	combined radium-226+228	J	L+ – High LCS recovery
30209600	3	HGWC-118 and HGWC-107	combined radium-226+228	J (unless previously flagged "U**")	L+ – High LCS recovery
30194831	1	all samples	combined radium-226+228	UJ	L- – Low LCS recovery
30220164	4	all samples	combined radium-226+228	UJ	L- – Low LCS recovery
265859	7	HGWC-101	combined radium-226+228	UJ	L- – Low LCS recovery
265888	7	HGWC-117	combined radium-226+228	UJ	L- – Low LCS recovery
265889	7	HGWC-118	combined radium-226+228	UJ	L- – Low LCS recovery
269952	8	all samples	combined radium-226+228	J/UJ	L- – Low LCSD recovery
2610034	8	all samples	combined radium-226+228	J/UJ	L- – Low LCSD recovery
2610038	8	all samples	combined radium-226+228	J/UJ	L- – Low LCSD recovery
2610113	8	all samples	combined radium-226+228	UJ	L- – Low LCS recovery
2610211	8	HGWC-121A	combined radium-226+228	UJ	L- – Low LCS recovery
AAK0534	6	HGWA-113 and HGWC-118	fluoride	J	M+ – High MS recovery
2610113	8	HGWC-117	combined radium-226+228	UJ	FD – Field duplicate imprecision

- All inorganic positive results reported between the method detection limit (MDL) and RL have been flagged "J."
- All radiological results reported below the MDC have been flagged "U."

Report prepared by: Alyssa M. Reed, Senior Quality Assurance Chemist/Project Manager
 Report reviewed by: Ammie L. Martin, Senior Quality Assurance Chemist
 Report reviewed by: Konstadina Vlahogiani, Senior Technical Chemist
 Report approved by: David I. Thal, CEAC, CQA, Principal Chemist
 Date: 1/22/19

INORGANIC AND RADIOLOGICAL DATA QUALIFIERS

- U - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U* - This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UU - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J - The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R - The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR - The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

Reason Codes and Explanations

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
BN	Negative laboratory blank contamination.
C	Initial and/or continuing calibration issue, indeterminate bias.
C+	Initial and/or continuing calibration issue. The result may be biased high.
C-	Initial and/or continuing calibration issue. The result may be biased low.
FD	Field duplicate imprecision.
FG	Total versus dissolved imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits, indeterminate bias.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits, indeterminate bias.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance limits, indeterminate bias.
P+	Post-digestion spike recovery outside of acceptance limits. The result may be biased high.
P-	Post-digestion spike recovery outside of acceptance limits. The result may be biased low.
Q	Chemical preservation issue.
R	RL standards outside of acceptance limits, indeterminate bias.
R+	RL standard(s) outside of acceptance limits. The result may be biased high.
R-	RL standard(s) outside of acceptance limits. The result may be biased low.
T	Temperature preservation issue.
SD	Serial dilution imprecision.
Y	Chemical yields outside of acceptance limits, indeterminate bias.
Y+	Chemical yield(s) outside of acceptance limits. The result may be biased high.
Y-	Chemical yield(s) outside of acceptance limits. The result may be biased low.
ZZ	Other

+ Memorandum

Date: July 1, 2019
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2619806, 2619807, 2619809, 2619848 and 2619850**

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eleven aqueous samples and one equipment blank collected 17-18 June 2019, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals (Barium, Boron and Calcium) by EPA Methods 3005A/6020B
- Anions (Chloride, Fluoride and Sulfate) by EPA Method 300.0
- Total Dissolved Solids (TDS) by Standard Method 2540C

EXECUTIVE SUMMARY

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental

Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2619806001	HGWC-120
2619806002	HGWC-121A
2619807001	EB-01
2619809001	HGWC-109
2619809002	HGWC-107
2619809003	HGWC-105

Laboratory ID	Client ID
2619809004	HGWC-103
2619848001	HGWC-101
2619848002	HGWC-118
2619848003	HGWC-117
2619850001	HGWC-124
2619850002	HGWA-122

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2619806, 2619807, 2619809 and 2619848: The year was missing from the start and stop times for the sample collections.
- 2619806, 2619807, 2619809 and 2619850: The relinquishing signature, date and time were missing for the third sample transfer.
- 2619848: The relinquishing signature, date and time were missing for the fourth sample transfer.

1.0 METALS

The samples were analyzed for metals (barium, boron and calcium) and by EPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate

- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 30489 and 30563). Metals were not detected in the method blanks above the method detection limits (MDLs).

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported using samples HGWC-120 and HGWC-118. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

2619806: The recoveries of calcium were high and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample HGWC-120. Since the calcium concentration in sample HGWC-120 was greater than four times the spiked concentration, no qualifications were applied to the data, based on professional and technical judgment.

2619848: The MS recovery of calcium was high, and the MSD recovery was low, both outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample HGWC-118. Since the calcium concentration in sample HGWC-118 was greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Metals were not detected in the equipment blank above the MDLs.

1.7 Field Blank

A field blank was not collected with the sample sets.

1.8 Field Duplicate

A field duplicate was not collected with the sample sets.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated non-detect results were not reported.

1.10 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M6 used in the level II reports were not included in the EDDs. In addition, the laboratory report specific EDDs included project data for samples from a different laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

2.0 WET CHEMISTRY

The samples were analyzed for anions (chloride, fluoride and sulfate) by EPA method 300.0 and TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ⊗ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

2.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

2.2 Holding Times

The holding time for the chloride, fluoride and sulfate analysis of a water sample is 28 days from sample collection to analysis. The holding time for TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the anions (batch 30603). The anions were not detected in the method blank above the MDLs.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair, using sample HGWC-120 and one MS using sample HGWC-121A were reported for anions. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

2619806: The recoveries of sulfate in the MS/MSD pairs using samples HGWC-120 and HGWC-121A were low and outside the laboratory and SOP specified acceptance criteria. Since the sulfate concentrations in samples HGWC-120 and HGWC-121A were greater than four times the spiked

concentrations, no qualifications were applied to the data, based on professional and technical judgment.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch. The recovery results were within the laboratory and SOP specified acceptance criteria.

2.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for TDS, using sample HGWC-121A. The RPD result was within the laboratory and SOP specified acceptance criteria.

2.7 Equipment Blank

One equipment blank was collected with the sample set, EB-01. The wet chemistry parameters were not detected in the equipment blank above the MDLs, with the following exceptions.

TDS (14.0 mg/L), chloride (0.93 mg/L) and fluoride (0.33 mg/L) were detected at concentrations greater than the RLs in EB-01. Since TDS was detected in the associated samples at concentrations greater than five times the equipment blank concentration, no qualifications were applied to the TDS data, based on professional and technical judgment. However, the chloride and fluoride concentrations in the associated samples less than five times the equipment blank concentrations were U* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWC-120	Fluoride	1.2	NA	1.2	U*	BE
HGWC-107	Chloride	2.9	NA	2.9	U*	BE
HGWC-118	Fluoride	0.89	NA	0.89	U*	BE
HGWC-124	Chloride	2.3	J	2.3	U*	BE
HGWA-122	Chloride	3.2	NA	3.2	U*	BE
HGWA-122	Fluoride	0.14	J	0.14	U*	BE

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

NA-not applicable

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

2.8 Field Blank

A field blank was not collected with the sample sets.

2.9 Field Duplicate

A field duplicate was not collected with the sample sets.

2.10 Sensitivity

The samples were reported to the MDLs for the anions and to the RL for TDS. No elevated non-detect results were reported.

2.11 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II reports were not included in the EDDs. In addition, the laboratory report specific EDDs included project data for samples from a different laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team per the SOP

DATA QUALIFIER DEFINITIONS

- U* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.

- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.

- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec’s Data Validation Team per the SOP

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered “not-detected.”
BF	Field blank contamination. The result should be considered “not-detected.”
BL	Laboratory blank contamination. The result should be considered “not-detected.”
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
LD	Laboratory duplicate imprecision.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

APPENDIX A2
Field Data Sheets

Product Name: Low-Flow System

Date: 2016-08-30 13:15:39

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

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

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.20 ft
Screen Length 10 ft
Depth to Water 17.14 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.290854 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 12.24 in
Total Volume Pumped 5.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	12:59:01	180.03	22.91	6.40	154.46	1.05	18.00	4.55	166.29
Last 5	13:02:01	360.02	23.03	6.64	229.70	0.68	18.05	4.32	161.49
Last 5	13:05:01	540.02	22.91	6.81	239.28	0.73	18.09	4.19	154.83
Last 5	13:08:01	720.02	22.80	6.86	241.57	1.56	18.12	4.16	155.06
Last 5	13:11:01	900.02	23.09	6.89	246.42	1.52	18.16	4.08	155.01
Variance 0			-0.11	0.17	9.58			-0.13	-6.65
Variance 1			-0.11	0.05	2.29			-0.03	0.23
Variance 2			0.29	0.03	4.85			-0.08	-0.05

Notes

Started pump at 1248
No issues. Clear, no odor. Sample rate 250mL/min.

Grab Samples

Product Name: Low-Flow System

Date: 2016-08-30 14:24:01

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 43 ft

Pump placement from TOC 36 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.96 ft
Screen Length 10 ft
Depth to Water 17.90 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2819272 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 22.56 in
Total Volume Pumped 6.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	14:07:54	720.02	21.68	5.78	79.22	7.91	19.58	1.92	204.96
Last 5	14:10:54	900.02	21.55	5.77	79.34	6.30	19.68	1.92	204.24
Last 5	14:13:54	1080.02	21.44	5.77	79.69	3.51	19.72	1.94	203.48
Last 5	14:16:54	1260.02	21.50	5.76	79.89	3.27	19.75	1.95	203.26
Last 5	14:19:54	1440.02	21.28	5.77	78.43	2.07	19.78	1.92	201.44
Variance 0			-0.11	-0.01	0.35			0.02	-0.76
Variance 1			0.06	-0.01	0.19			0.01	-0.23
Variance 2			-0.21	0.01	-1.46			-0.03	-1.81

Notes

Filled 2 rads bottles here. Lab request -internal qa/qc. Turbidity likely stirred up from twisted tubing. At the end of a roll, so very tight coil. Clear, no odor, sample rate 250 mL/min

Grab Samples

HGWA-112
Sample time 1425

Product Name: Low-Flow System

Date: 2016-08-30 15:45:07

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 38 ft

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.14 ft
Screen Length 10 ft
Depth to Water 14.16 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 68.28 in
Total Volume Pumped 6.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	15:27:25	1080.02	25.24	5.99	94.20	3.15	19.15	1.03	186.54
Last 5	15:30:25	1260.02	25.19	5.98	94.44	1.82	19.35	1.06	186.20
Last 5	15:33:25	1440.02	25.53	5.98	95.46	1.78	19.63	1.10	185.00
Last 5	15:36:25	1620.02	25.81	5.98	94.27	1.92	19.73	1.11	184.61
Last 5	15:39:25	1800.02	25.88	5.99	94.06	1.63	19.85	1.10	184.36
Variance 0			0.34	0.01	1.02			0.04	-1.19
Variance 1			0.28	-0.00	-1.18			0.01	-0.40
Variance 2			0.07	0.01	-0.21			-0.01	-0.25

Notes

Started pump at 1504

Started @ 250 mL/min, reduced to 150 mL/min at 1521 because of pretty drastic WL drop while parameters pretty well stable. Reduced flow again at 1533 to 100 mL/min again because WL drop still not within criteria. Clear, no odor. Sample rate 100mL/min.

Grab Samples
HGWA-113
Sample time 1545

Product Name: Low-Flow System

Date: 2016-08-31 12:21:27

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.91 ft
Screen Length 10 ft
Depth to Water 15.06 ft

Pumping Information:

Final Pumping Rate 110 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 49.44 in
Total Volume Pumped 6.71 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	12:06:36	2520.02	23.61	5.36	254.34	1.57	17.97	2.27	166.90
Last 5	12:09:36	2700.02	23.52	5.35	264.01	1.56	18.06	1.86	167.43
Last 5	12:12:36	2880.00	23.75	5.35	264.08	1.66	18.12	1.69	168.71
Last 5	12:15:36	3060.00	24.01	5.35	265.49	1.69	18.17	1.66	170.06
Last 5	12:18:36	3240.05	23.88	5.35	266.94	1.57	18.22	1.57	170.45
Variance 0			0.22	0.00	0.07			-0.17	1.28
Variance 1			0.27	-0.00	1.41			-0.02	1.34
Variance 2			-0.13	-0.00	1.45			-0.10	0.39

Notes

No issues; clear no odor, sample rate 110 mL/min.

Grab Samples

HGWC-101
Sample time 1223

Product Name: Low-Flow System

Date: 2016-08-31 12:53:33

Project Information:

Operator Name M. Rogers
Company Name ERM
Project Name AP 3&4
Site Name GPC- Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 450141
Turbidity Make/Model Hanna

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 39 ft

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 15.88 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3840735 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.1 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:31:10	1200.02	22.98	5.55	693.98	7.11	16.19	0.15	121.34
Last 5	12:36:10	1500.02	22.93	5.55	694.27	6.83	16.19	0.14	120.34
Last 5	12:41:10	1800.02	23.25	5.54	698.47	4.81	16.19	0.14	120.79
Last 5	12:46:10	2100.00	23.00	5.54	684.65	4.41	16.19	0.12	121.64
Last 5	12:51:10	2400.00	22.70	5.54	688.52	3.61	16.19	0.11	123.49
Variance 0			0.33	-0.02	4.20			0.00	0.46
Variance 1			-0.25	0.00	-13.82			-0.01	0.85
Variance 2			-0.31	0.00	3.87			-0.01	1.85

Notes

All parameters stable. Decreased purge rate to 100ml/min at 1221

Grab Samples

HGWC-103

Sampling at 1255 at 100 ml/min

Product Name: Low-Flow System

Date: 2016-08-31 14:15:46

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

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

Pump placement from TOC 40 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.85 ft
Screen Length 10 ft
Depth to Water 19.73 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2997809 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 6.24 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	13:58:14	1440.02	21.19	6.44	440.61	6.29	20.27	0.12	32.95
Last 5	14:01:14	1620.02	21.90	6.06	419.78	31.60	20.25	0.11	98.16
Last 5	14:04:14	1800.02	21.18	6.43	546.12	3.29	20.25	0.10	13.48
Last 5	14:07:14	1980.02	21.26	6.50	548.59	2.79	20.25	0.10	5.88
Last 5	14:10:14	2160.01	21.45	6.50	539.36	2.53	20.25	0.09	3.30
Variance 0			-0.72	0.38	126.35			-0.01	-84.68
Variance 1			0.08	0.06	2.47			0.00	-7.60
Variance 2			0.18	0.00	-9.23			-0.00	-2.58

Notes

Started pump at 1326. Poured water into bottles for FB-1. Will leave caps off for duration of purging/sampling to potentially capture dust from road as trucks drive by.

Weird "slug" of something around 7th reading. No other issues; clear, no odor.

Grab Samples

HGWC-105

Sample time 1415

FB-1

Sample time 1340

Product Name: Low-Flow System

Date: 2016-08-31 14:40:35

Project Information:

Operator Name M. Rogers
Company Name ERM
Project Name AP 3&4
Site Name GPC- Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 450141
Turbidity Make/Model Hanna

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 40 ft

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 37.95 ft
Screen Length 10 ft
Depth to Water 16.92 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3885369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:24:06	300.14	27.26	6.11	435.42	3.61	16.96	0.38	148.32
Last 5	14:29:06	600.02	27.16	6.12	434.38	2.51	16.96	0.26	145.90
Last 5	14:34:06	900.02	27.14	6.12	437.24	1.35	16.96	0.22	143.53
Last 5	14:39:06	1200.02	27.74	6.11	431.92	1.12	16.96	0.19	143.22
Last 5									
Variance 0			-0.11	0.01	-1.04			-0.12	-2.42
Variance 1			-0.02	-0.00	2.86			-0.04	-2.36
Variance 2			0.60	-0.00	-5.32			-0.03	-0.31

Notes

Total depth from last development was actually 38.07. All parameters stable

Grab Samples

HGWC-107

Sampling at 1442 at 200ml/min

Product Name: Low-Flow System

Date: 2016-08-31 15:24:09

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 33 ft

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.02 ft
Screen Length 10 ft
Depth to Water 12.10 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	15:07:24	360.02	21.55	6.81	337.98	1.12	12.14	0.13	-75.25
Last 5	15:10:24	540.02	21.47	6.79	337.47	0.98	12.14	0.12	-72.57
Last 5	15:13:24	720.02	21.40	6.79	333.86	0.79	12.14	0.11	-70.73
Last 5	15:16:24	900.02	21.08	6.78	333.71	0.58	12.14	0.10	-68.65
Last 5	15:19:24	1080.02	20.61	6.78	334.10	0.42	12.14	0.10	-66.52
Variance 0			-0.07	-0.00	-3.61			-0.01	1.84
Variance 1			-0.32	-0.00	-0.15			-0.01	2.08
Variance 2			-0.46	-0.00	0.40			-0.00	2.12

Notes

Started pump at 1453
No issues; clear, no odor. Sample rate 250 mL/min

Grab Samples

HGWC-109
Sample time 1524

Product Name: Low-Flow System

Date: 2016-08-31 10:38:08

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name AP 3 & 4
Site Name GPC - Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 444107
Turbidity Make/Model Hanna 98703

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 41 ft

Pump placement from TOC 34 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.2 ft
Screen Length 10 ft
Depth to Water 18.24 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2730004 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 0.36 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 100
Last 5	10:22:52	1440.02	19.95	5.92	437.49	0.26	18.27	0.15	133.42
Last 5	10:25:52	1620.02	19.95	5.97	457.16	0.25	18.27	0.15	127.97
Last 5	10:28:52	1800.02	19.88	6.01	474.87	0.17	18.27	0.14	124.71
Last 5	10:31:52	1980.01	19.95	6.04	484.92	0.18	18.27	0.12	122.14
Last 5	10:34:52	2160.01	20.00	6.07	491.87	0.17	18.27	0.11	119.20
Variance 0			-0.07	0.04	17.72			-0.01	-3.26
Variance 1			0.07	0.03	10.05			-0.03	-2.57
Variance 2			0.06	0.03	6.95			-0.00	-2.94

Notes

Started pump at 0951
No issues; clear, no odor. Sample rate 250 mL/min

Grab Samples

HGWC-117
Sample Time 1040

Product Name: Low-Flow System

Date: 2016-08-31 11:24:02

Project Information:

Operator Name M. Rogers
Company Name ERM
Project Name AP 3&4
Site Name GPC- Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 450141
Turbidity Make/Model Hanna

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 42 ft

Pump placement from TOC 35 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.9 ft
Screen Length 10 ft
Depth to Water 15.2 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3974638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.6 in
Total Volume Pumped 13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	11:02:59	2700.00	24.13	7.04	613.99	6.87	15.36	0.16	54.84
Last 5	11:07:59	2999.99	24.18	7.04	612.69	5.21	15.36	0.16	55.33
Last 5	11:12:59	3300.00	24.27	7.04	602.04	4.78	15.36	0.15	56.53
Last 5	11:17:59	3600.00	24.20	7.04	608.62	4.30	15.36	0.15	56.11
Last 5	11:22:59	3900.00	24.51	7.03	607.88	4.40	15.36	0.14	50.35
Variance 0			0.09	0.00	-10.65			-0.01	1.20
Variance 1			-0.07	-0.01	6.58			-0.00	-0.42
Variance 2			0.32	-0.00	-0.74			-0.01	-5.77

Notes

All parameters stable

Grab Samples

HGWC-118
Sampling at 1125 at 200ml/min

Product Name: Low-Flow System

Date: 2016-10-20 14:30:32

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 457516
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.2 ft
Screen Length 10 ft
Depth to Water 18.82 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.290854 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 12.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	14:15:49	720.02	22.27	6.27	143.34	0.47	19.76	4.44	72.98
Last 5	14:18:49	900.02	22.22	6.43	191.71	0.44	19.80	4.27	67.08
Last 5	14:21:49	1080.02	22.17	6.64	236.43	0.40	19.83	4.07	61.72
Last 5	14:24:49	1260.02	22.18	6.71	242.32	0.46	19.85	3.97	60.11
Last 5	14:27:49	1440.06	22.22	6.73	243.15	0.42	19.87	3.96	60.52
Variance 0			-0.05	0.21	44.72			-0.20	-5.36
Variance 1			0.01	0.07	5.89			-0.10	-1.61
Variance 2			0.04	0.02	0.83			-0.01	0.41

Notes

Started purge at 1359
Sample rate 250 mL/min; Clear, no odor; No issues. 2nd Rad bottle for lab QA/QC collected here.

Grab Samples

HGWA-111
Sample time 1432

Product Name: Low-Flow System

Date: 2016-10-24 12:40:20

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 457516
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC 35 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.96 ft
Screen Length 10 ft
Depth to Water 19.45 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.290854 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 21.36 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	12:26:25	180.02	20.66	5.66	79.09	0.76	20.63	1.85	97.59
Last 5	12:29:24	360.02	20.35	5.63	79.45	1.24	20.88	1.89	101.47
Last 5	12:32:24	540.02	20.19	5.61	79.37	1.47	21.05	1.86	105.93
Last 5	12:35:24	720.02	20.13	5.61	79.77	1.45	21.18	1.84	109.36
Last 5	12:38:24	900.02	20.15	5.61	79.99	1.25	21.23	1.81	111.84
Variance 0			-0.16	-0.02	-0.07			-0.03	4.46
Variance 1			-0.06	-0.01	0.40			-0.02	3.43
Variance 2			0.02	0.00	0.22			-0.03	2.48

Notes

Started purge at 12:20
Sample rate 250 mL/min. Clear, no odor; No issues.

Grab Samples

HGWA-112
Sample time 1244

Product Name: Low-Flow System

Date: 2016-10-24 14:08:58

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 457516
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.14 ft
Screen Length 10 ft
Depth to Water 15.16 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 78.84 in
Total Volume Pumped 7.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	13:54:17	1800.02	22.05	5.85	93.55	0.60	21.10	0.80	111.94
Last 5	13:57:17	1980.02	22.35	5.82	93.81	0.94	21.28	0.80	113.11
Last 5	14:00:17	2160.02	22.55	5.84	92.49	0.67	21.45	0.78	112.54
Last 5	14:03:17	2340.02	22.44	5.85	93.20	0.66	21.61	0.78	110.62
Last 5	14:06:17	2520.02	22.64	5.84	93.94	0.67	21.73	0.79	110.56
Variance 0			0.20	0.02	-1.33			-0.01	-0.57
Variance 1			-0.12	0.00	0.72			-0.00	-1.92
Variance 2			0.20	-0.01	0.74			0.01	-0.06

Notes

Started purge at 1322
Started purging at 250 mL/min, dropped to 150, then to 100mL/min because WL wouldn't stabilize. Sample rate 100mL/min; Clear, no odor. No other issues.

Grab Samples



Product Name: Low-Flow System

Date: 2016-10-20 14:39:28

Project Information:

Operator Name W. Virgo
Company Name ERM
Project Name GPC- Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model Lamotte 2020we

Pump Information:

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

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.91 ft
Screen Length 10 ft
Depth to Water 16.62 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4739027 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 60.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	14:15:31	1801.97	22.48	5.34	255.94	0.65	20.86	1.07	142.54
Last 5	14:20:31	2101.97	22.38	5.36	260.55	0.54	21.67	0.87	140.77
Last 5	14:25:31	2401.94	24.11	5.31	284.74	0.52	21.15	0.34	138.47
Last 5	14:30:31	2701.94	24.46	5.32	281.93	0.90	21.15	0.30	138.58
Last 5	14:35:31	3001.94	24.49	5.30	278.86	0.87	21.15	0.26	140.89
Variance 0			1.73	-0.05	24.19			-0.53	-2.30
Variance 1			0.35	0.00	-2.80			-0.04	0.11
Variance 2			0.03	-0.02	-3.08			-0.04	2.31

Notes

Started Purging at 1346 @ 200 ml/min

Due to excessive drawdown, purge rate was lowered to 100 ml/min @ 1416. Well parameters stable @ 1436. Well sampled at 1440. Sample rate:

Grab Samples

HGWC-101
Sample Time: 1440

Product Name: Low-Flow System

Date: 2016-10-24 15:24:24

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 457516
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 41 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 17.11 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2730004 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 2.64 in
Total Volume Pumped 3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	15:13:33	180.09	19.26	5.47	610.33	2.17	17.33	0.15	146.35
Last 5	15:16:33	360.02	18.99	5.47	613.95	2.50	17.33	0.12	144.88
Last 5	15:19:33	540.02	18.91	5.48	610.24	2.40	17.33	0.10	142.32
Last 5	15:22:33	720.02	18.71	5.48	612.49	2.02	17.33	0.09	140.33
Last 5									
Variance 0			-0.26	0.00	3.62			-0.03	-1.47
Variance 1			-0.08	0.00	-3.71			-0.02	-2.56
Variance 2			-0.20	0.00	2.25			-0.01	-1.98

Notes

Started purge at 1507
Sample rate 250 mL/min; Clear, no odor. No issues.

Grab Samples

HGWC-103
Sample time 1527

Product Name: Low-Flow System

Date: 2016-10-25 09:43:13

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 457516
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 49 ft

Pump placement from TOC 40 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.85 ft
Screen Length 10 ft
Depth to Water 22.73 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.3087077 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 5.16 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	09:29:14	540.02	16.38	6.38	539.12	5.90	23.16	0.14	39.64
Last 5	09:32:14	720.02	16.41	6.38	532.93	5.56	23.16	0.12	34.93
Last 5	09:35:14	900.02	16.47	6.36	528.74	4.73	23.16	0.11	30.73
Last 5	09:38:14	1080.02	16.46	6.35	526.12	3.72	23.16	0.11	27.49
Last 5	09:41:14	1260.02	16.47	6.34	523.77	3.97	23.16	0.10	24.49
Variance 0			0.06	-0.02	-4.18			-0.01	-4.20
Variance 1			-0.01	-0.01	-2.62			-0.00	-3.24
Variance 2			0.01	-0.01	-2.35			-0.01	-3.00

Notes

Started purge at 0915
Sample rate 250 mL/min; Clear, no odor. No issues

Grab Samples

HGWC-105
Sample Time 0945

Product Name: Low-Flow System

Date: 2016-10-25 10:36:21

Project Information:

Operator Name M. Rogers
Company Name ERM
Project Name Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model Lamotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 40 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 38 ft
Screen Length 10 ft
Depth to Water 19.86 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3885369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.02 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	10:20:03	300.08	20.56	6.08	387.27	2.02	19.88	0.94	116.56
Last 5	10:25:03	600.03	20.30	6.05	386.66	1.48	19.88	0.63	93.02
Last 5	10:30:03	900.02	20.30	6.05	383.98	2.18	19.88	0.62	85.71
Last 5	10:35:03	1200.02	20.32	6.04	380.67	2.00	19.88	0.61	80.92
Last 5									
Variance 0			-0.27	-0.02	-0.61			-0.31	-23.54
Variance 1			0.00	-0.01	-2.68			-0.01	-7.31
Variance 2			0.02	-0.01	-3.31			-0.01	-4.79

Notes

Parameters stable

Grab Samples

HGWC-107
Sampling at 1038

Product Name: Low-Flow System

Date: 2016-10-25 10:35:04

Project Information:

Operator Name Tracy Wardell
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 457516
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.02 ft
Screen Length 10 ft
Depth to Water 13.54 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	10:23:20	180.04	17.47	6.48	338.68	1.24	13.58	0.15	-17.37
Last 5	10:26:20	360.02	17.54	6.50	338.25	0.77	13.58	0.11	-23.77
Last 5	10:29:20	540.02	17.54	6.53	339.34	0.64	13.58	0.10	-28.68
Last 5	10:32:20	720.02	17.54	6.55	338.77	0.61	13.58	0.09	-31.74
Last 5									
Variance 0			0.08	0.03	-0.43			-0.04	-6.40
Variance 1			0.00	0.03	1.08			-0.01	-4.90
Variance 2			0.00	0.02	-0.57			-0.00	-3.06

Notes

Started purging at 1017
Sample rate 250 mL/min. Clear, no odor. No issues.

Grab Samples

HGWC-109
Sample time 1037

Product Name: Low-Flow System

Date: 2016-10-20 10:48:23

Project Information:

Operator Name W. Virgo
Company Name ERM
Project Name GPC- Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model Lamotte 2020we

Pump Information:

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

Pump placement from TOC 34 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.20 ft
Screen Length 10 ft
Depth to Water 20.20 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.24 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	10:25:34	2100.06	20.13	5.86	452.03	0.63	20.22	0.10	65.98
Last 5	10:30:34	2400.01	20.22	5.91	473.05	0.47	20.22	0.13	66.73
Last 5	10:35:33	2699.93	20.41	5.95	487.28	0.43	20.22	0.12	66.70
Last 5	10:40:33	2999.93	20.50	5.98	494.52	0.40	20.22	0.11	67.38
Last 5	10:45:33	3299.94	20.61	6.00	502.65	0.48	20.22	0.08	68.64
Variance 0			0.19	0.04	14.23			-0.02	-0.03
Variance 1			0.09	0.03	7.25			-0.00	0.69
Variance 2			0.11	0.02	8.13			-0.04	1.25

Notes

Purge started at 0951 @ 200 ml/min
Well parameters stable @ 1046. Well sampled at 1050, sample rate: 200 ml/min

Grab Samples

HGWC-117
Sample Time: 1050
DUP-1

Product Name: Low-Flow System

Date: 2016-10-20 12:27:55

Project Information:

Operator Name W. Virgo
Company Name ERM
Project Name GPC- Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model Lamotte 2020we

Pump Information:

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

Pump placement from TOC 35.9 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.90 ft
Screen Length 10 ft
Depth to Water 16.96 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.4 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	12:04:27	600.03	21.41	7.01	524.18	1.59	17.16	1.09	78.85
Last 5	12:09:27	900.02	21.71	7.03	522.31	1.83	17.16	1.01	78.26
Last 5	12:14:27	1200.00	21.82	7.03	519.50	1.66	17.16	0.35	80.31
Last 5	12:19:27	1500.00	22.04	7.01	517.85	0.76	17.16	0.17	82.88
Last 5	12:24:27	1799.98	22.05	7.01	516.24	0.70	17.16	0.09	83.96
Variance 0			0.11	-0.01	-2.81			-0.66	2.05
Variance 1			0.22	-0.02	-1.64			-0.18	2.57
Variance 2			0.01	0.00	-1.62			-0.08	1.08

Notes

Purge started at 1155 at 200 ml/min
Well Parameters Stable @ 1225. Well sampled at 1230 sample rate: 200 ml/min. FB-1 and FERB-1 taken at this well

Grab Samples

HGWC-118
Sample time 1230
FB-1

FERB-1



Product Name: Low-Flow System

Date: 2017-01-25 10:31:35

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.20 ft
Screen Length 10 ft
Depth to Water 13.21 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5274637 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 13.8 in
Total Volume Pumped 17 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	10:10:01	3899.95	17.12	6.95	281.81	0.89	14.36	4.45	47.55
Last 5	10:15:01	4199.95	17.16	6.96	291.47	0.95	14.36	4.07	47.29
Last 5	10:20:01	4499.88	17.19	7.00	291.10	0.70	14.36	4.05	46.64
Last 5	10:25:01	4799.88	17.25	7.03	290.40	0.91	14.36	3.94	45.80
Last 5	10:30:01	5099.88	17.37	7.02	295.10	0.85	14.36	3.93	46.08
Variance 0			0.03	0.04	-0.37			-0.02	-0.64
Variance 1			0.06	0.03	-0.70			-0.10	-0.84
Variance 2			0.12	-0.01	4.70			-0.01	0.28

Notes

Weather: Sunny ~36 F. Purge started at 0905. Purge rate: 200 ml/min.
Well parameters stable at 10:30. Sampled at 10:35 @ 200 ml/min

Grab Samples

HGWA-111
Sample Time: 10:35

Product Name: Low-Flow System

Date: 2017-01-25 11:03:42

Project Information:

Operator Name M.Burch
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 35 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.96 ft
Screen Length 10 ft
Depth to Water 9.95 ft

Pumping Information:


Final Pumping Rate 150 mL/min
Total System Volume 0.540854 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 15 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	10:34:23	4500.98	17.41	5.67	77.73	1.34	11.34	1.73	104.90
Last 5	10:39:23	4800.98	17.77	5.68	77.35	0.65	11.34	1.84	107.16
Last 5	10:49:23	5400.98	18.26	5.68	77.57	0.63	11.32	1.67	117.28
Last 5	10:54:23	5700.98	18.36	5.68	76.38	1.30	11.28	1.67	128.24
Last 5	10:59:23	6000.98	17.91	5.68	76.90	--	--	1.68	135.73
Variance 0			0.49	-0.00	0.22			-0.17	10.13
Variance 1			0.09	0.00	-1.19			0.00	10.95
Variance 2			-0.44	0.00	0.51			0.01	7.49

Notes

Grab Samples

HGWA-112 Sample time: 1110
WFV 2/7/17


Product Name: Low-Flow System

Date: 2017-01-25 12:53:24

Project Information:

Operator Name M.Burch
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020We

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 41 ft

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.14 ft
Screen Length 10 ft
Depth to Water 9.83 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5230004 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 28 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:27:57	899.98	19.50	6.02	102.91	0.88	14.95	2.58	174.90
Last 5	12:32:57	1199.98	19.50	6.03	101.00	0.56	15.51	2.49	179.56
Last 5	12:37:57	1499.98	19.50	6.03	102.90	0.57	15.89	2.40	181.28
Last 5	12:42:57	1799.98	19.32	6.03	102.41	0.44	15.88	2.42	177.23
Last 5	12:47:57	2099.98	19.34	6.04	102.97	0.79	15.89	2.40	169.12
Variance 0			-0.00	0.00	1.90			-0.09	1.72
Variance 1			-0.18	-0.00	-0.49			0.02	-4.05
Variance 2			0.01	0.01	0.56			-0.02	-8.11

Notes

Stopped purging at 1248 - @150mL/min

Grab Samples

HGWA-113
Start sample at 1253

Grab Samples

HGWC-118

Groundwater sample taken @ 11:55

Product Name: Low-Flow System

Date: 2017-01-31 11:33:46

Project Information:

Operator Name: Markevious Thomas
Company Name: ERM
Project Name: GPC - Plant Hammond
Site Name: AP 3&4
Latitude: 0° 0' 0"
Longitude: 0° 0' 0"
Sonde SN: 449622
Turbidity Make/Model: LaMotte 2020We

Pump Information:

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

Pump placement from TOC: 32 ft

Well Information:

Well ID: HGWC-102 ~~102~~ 101
Well diameter: 2 in
Well Total Depth: 37.91 ft
Screen Length: 10 ft
Depth to Water: 16.1 ft

WFV
2/7/17
[Signature]

Pumping Information:

Final Pumping Rate: 100 mL/min
Total System Volume: 0.2685369 L
Calculated Sample Rate: 300 sec
Stabilization Drawdown: 26 in
Total Volume Pumped: 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	11:05:53	1200.01	16.74	5.25	295.72	0.52	17.57	0.33	79.68
Last 5	11:10:53	1500.01	17.10	5.25	290.46	1.10	17.78	0.30	78.50
Last 5	11:15:53	1800.01	17.32	5.25	295.88	1.47	17.94	0.27	78.78
Last 5	11:20:53	2100.01	17.52	5.23	305.85	1.62	18.13	0.27	80.40
Last 5	11:25:53	2400.01	17.49	5.24	305.08	0.68	18.25	0.26	80.21
Variance 0			0.23	0.00	5.42			-0.02	0.28
Variance 1			0.20	-0.02	9.97			-0.01	1.62
Variance 2			-0.03	0.01	-0.77			-0.01	-0.19

Drawdown stabilization criteria not met prior to sampling 0.31 ft over last 3 readings

WFV
2/7/17

[Signature]

Notes

1045 start purge at 100mL/min; 1125 all parameters stable; 1130 sampled at 100mL/min. 58F Sunny, light breeze

Grab Samples

HGWC-101
Sampled at 1130

Product Name: Low-Flow System

Date: 2017-01-31 11:15:02

Project Information:

Operator Name M.Burch
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 17.47 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5274637 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.36 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	10:50:48	300.14	16.72	5.51	594.51	1.65	17.72	0.16	95.77
Last 5	10:55:48	600.01	16.74	5.51	600.35	1.13	17.72	0.13	93.87
Last 5	11:00:48	900.01	16.71	5.51	594.73	0.54	17.73	0.12	90.13
Last 5	11:05:48	1200.01	16.85	5.51	598.13	0.60	17.75	0.11	89.02
Last 5	11:10:48	1500.01	17.09	5.51	586.15	0.85	17.75	0.11	88.98
Variance 0			-0.03	-0.00	-5.62			-0.01	-3.73
Variance 1			0.14	0.00	3.40			-0.02	-1.12
Variance 2			0.24	0.00	-11.97			0.00	-0.04

Notes

Starting purge at 1045 at a rate of 200mL/min - weather is sunny 43F
Finished purging @1110 - at 200mL/min

Grab Samples

HGWC-103

Started sampling at 1115@200mL/min

Product Name: Low-Flow System

Date: 2017-01-31 12:54:29

Project Information:

Operator Name M.Burch
 Company Name ERM
 Project Name GPC - Plant Hammond
 Site Name AP 3&4
 Latitude 0° 0' 0"
 Longitude 0° 0' 0"
 Sonde SN 463453
 Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 39.85 ft

Well Information:

Well ID HGWC-105
 Well diameter 2 in
 Well Total Depth 44.85 ft
 Screen Length 10 ft
 Depth to Water 21.03 ft

Pumping Information:

Final Pumping Rate 200 mL/min
 Total System Volume 0.5631711 L
 Calculated Sample Rate 300 sec
 Stabilization Drawdown 0.52 in *6.24 in*
 Total Volume Pumped 5 L *WFV 217/17*

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:30:29	300.10	17.87	6.16	373.62	5.00	21.52	0.13	-2.65
Last 5	12:35:29	600.03	17.77	6.50	541.64	2.11	21.53	0.12	1.55
Last 5	12:40:29	900.03	17.72	6.48	531.24	1.41	21.55	0.10	-5.21
Last 5	12:45:29	1200.03	17.68	6.45	525.51	0.98	21.55	0.10	-14.31
Last 5	12:50:29	1500.01	17.63	6.43	522.39	0.92	21.55	0.10	-18.75
Variance 0			-0.05	-0.02	-10.40			-0.02	-6.76
Variance 1			-0.05	-0.03	-5.72			0.00	-9.11
Variance 2			-0.04	-0.02	-3.12			-0.01	-4.43

Notes

Started purging at 1126
 Finished purging at 1151@200mL/min

Grab Samples

HGWC-105
 Started sampling at 1200

Product Name: Low-Flow System

Date: 2017-01-31 13:02:39

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID ~~HGWX-107~~ **HGWC-107**
Well diameter 2 in
Well Total Depth 37.95 ft
Screen Length 10 ft
Depth to Water 18.21 ft

WFPV
2/7/17
SS

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:40:01	300.10	18.96	5.94	424.06	0.33	18.27	0.39	83.95
Last 5	12:45:01	600.03	18.85	5.95	429.02	0.43	18.27	0.28	83.41
Last 5	12:50:01	900.03	18.98	5.96	424.27	0.44	18.27	0.22	82.69
Last 5	12:55:01	1200.07	18.84	5.94	423.33	0.44	18.27	0.17	82.50
Last 5	13:00:01	1500.02	18.87	5.94	420.94	0.45	18.27	0.17	82.22
Variance 0			0.13	0.00	-4.75			-0.06	-0.72
Variance 1			-0.14	-0.01	-0.94			-0.05	-0.19
Variance 2			0.03	-0.01	-2.39			0.01	-0.28

Notes

1235 start purge at 200mL/min; 1300 all parameters stable; 1305 sampled at 200mL/min. 65F Sunny, light breeze

Grab Samples

HGWC-107

Sampled at 1305

Product Name: Low-Flow System

Date: 2017-01-31 16:20:40

Project Information:

Operator Name Andreas Shoredits
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020We

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 32 ft

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 29.96 ft
Screen Length 10 ft
Depth to Water 10.5 ft

Pumping Information:

Final Pumping Rate 190 mL/min
Total System Volume 0.3528295 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 36.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	15:26:02	9305.49	18.90	6.50	298.87	4.96	10.54	0.21	-46.64
Last 5	15:31:02	9605.47	19.01	6.49	308.12	5.22	10.54	0.26	-47.44
Last 5	15:36:02	9905.46	19.10	6.50	303.07	4.13	10.54	0.35	-48.06
Last 5	15:41:02	10205.47	19.19	6.50	300.32	4.64	10.54	0.40	-48.65
Last 5	15:46:02	10505.47	19.12	6.50	296.80	4.97	10.54	0.40	-49.37
Variance 0			0.08	0.01	-5.06			0.09	-0.63
Variance 1			0.10	0.00	-2.75			0.05	-0.59
Variance 2			-0.08	0.01	-3.52			0.01	-0.72

Notes

Start purging well @ 12:50, first reading taken @ 12:55; Stop Purging well @ 15:45; Initial purge rate of 250 ml/min lowered to 200 ml/min @ 13:25, to 190 ml/min @ 15:20; Turbidity remained a problem until 15:10; Parameters were stable @ 15:45; TD is 30.97 ft btoc; Weather is clear,

Grab Samples

HGWC-109

Groundwater sample taken @ 15:50

FERB-1

Field equipment rinse blank collected @ 16:15

Product Name: Low-Flow System

Date: 2017-01-27 12:12:15

Project Information:

Operator Name M.Burch
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 36.20 ft
Screen Length 10 ft
Depth to Water 18.39 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5274637 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	11:45:27	2400.03	17.77	6.03	451.97	0.29	18.37	0.09	75.17
Last 5	11:50:27	2699.97	17.63	6.12	480.40	0.23	18.38	0.08	72.85
Last 5	11:55:27	2999.97	17.45	6.16	500.76	0.24	18.40	0.08	70.27
Last 5	12:00:27	3299.97	17.44	6.18	507.96	0.06	18.38	0.08	65.45
Last 5	12:05:27	3599.97	17.63	6.20	512.64	0.13	18.39	0.08	59.63
Variance 0			-0.18	0.04	20.37			-0.01	-2.58
Variance 1			-0.01	0.03	7.20			0.00	-4.82
Variance 2			0.19	0.01	4.68			-0.00	-5.83

Notes

Start purge at 1105

Stopped purging at 1205- spec. Cond. and pH were both unstable starting with spec.cond. @1125 and then pH @1130 both were both stable at

Grab Samples

HGWC-117

Started sampling at 1215 at 200mL/min

Product Name: Low-Flow System

Date: 2017-01-31 12:23:40

Project Information:

Operator Name Andreas Shoredits
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 35 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.81 ft
Screen Length 10 ft
Depth to Water 15.84 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3885369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.04 in
Total Volume Pumped 9.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	11:36:39	2099.96	18.69	6.96	549.64	1.63	16.01	4.46	72.63
Last 5	11:41:39	2399.96	18.56	6.97	544.48	0.68	16.01	0.64	72.72
Last 5	11:46:39	2699.96	18.83	6.97	538.78	0.44	16.01	0.62	72.78
Last 5	11:51:39	2999.96	18.83	6.97	530.33	1.20	16.01	0.61	72.51
Last 5	11:56:39	3299.96	18.93	6.96	539.86	--	--	0.83	73.33
Variance 0			0.26	-0.00	-5.70			-0.01	0.05
Variance 1			0.01	-0.00	-8.45			-0.01	-0.27
Variance 2			0.09	-0.01	9.53			0.22	0.82

Notes

Start purging well @ 11:01, first reading @ 11:06; Stop purging well @ 11:51; Initial purge rate of 170 ml/min was increased to 180 ml/min @ 11:06, and to final purge rate of 200 ml/min @ 11:11; Sample purge rate is 200 ml/min; DO increase @ 11:21 through 11:36 due to air entering flow cell; Last line of readings @ 11:56 is not valid due to low flow logging mistakenly not stopped after initiation of sampling; TD 40.82 ft brick; Weather is sunny, 62 degrees F

WFV
2/7/17
SFD

Product Name: Low-Flow System

Date: 2017-05-24 09:28:00

Project Information:

Operator Name Myles Rogers
Company Name ERM
Project Name GPC- Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 48 ft

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.2 ft
Screen Length 10 ft
Depth to Water 12.38 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4242443 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 9.48 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	09:06:28	900.02	19.16	5.92	130.46	0.71	13.04	4.62	64.40
Last 5	09:11:28	1200.02	19.23	6.17	178.16	0.13	13.10	4.42	60.14
Last 5	09:16:28	1500.02	19.69	6.38	216.79	0.20	13.13	4.16	56.62
Last 5	09:21:28	1800.02	19.36	6.41	221.35	0.26	13.15	4.12	55.47
Last 5	09:26:29	2100.97	19.27	6.44	227.09	0.17	13.17	4.09	54.18
Variance 0			0.46	0.21	38.63			-0.26	-3.52
Variance 1			-0.33	0.03	4.56			-0.03	-1.15
Variance 2			-0.09	0.03	5.74			-0.03	-1.29

Notes

Parameters stable. Weather: cloudy 70's

Grab Samples

HGWA-11

Sampling at 9:30

Product Name: Low-Flow System

Date: 2017-05-23 14:18:08

Project Information:

Operator Name Myles Rogers
Company Name ERM
Project Name GPC- Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 44 ft

Pump placement from TOC 34 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.96 ft
Screen Length 10 ft
Depth to Water 1214 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4063906 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 12.84 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	14:01:06	300.03	21.99	5.70	75.69	0.63	12.95	1.53	54.55
Last 5	14:06:06	600.02	22.82	5.69	75.32	0.60	13.04	1.43	54.17
Last 5	14:11:06	900.02	22.42	5.69	75.27	0.29	13.19	1.41	54.74
Last 5	14:16:06	1200.02	23.44	5.70	74.78	1.01	13.21	1.42	53.64
Last 5									
Variance 0			0.83	-0.01	-0.37			-0.10	-0.38
Variance 1			-0.40	0.00	-0.05			-0.02	0.57
Variance 2			1.01	0.00	-0.50			0.01	-1.09

Notes

Parameters stable. Weather: partly cloudy 70's.

Grab Samples

HGWA-112
Sampling at 14:24

Product Name: Low-Flow System

Date: 2017-05-23 12:50:49

Project Information:

Operator Name Myles Rogers
Company Name ERM
Project Name GPC- Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 41 ft

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.14 ft
Screen Length 10 ft
Depth to Water ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3930004 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 86.16 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 100
Last 5	12:28:32	2400.86	19.99	6.01	100.12	0.34	14.00	0.70	54.72
Last 5	12:33:32	2700.86	20.39	6.02	101.91	0.31	14.48	0.72	51.40
Last 5	12:38:32	3000.86	20.56	6.01	98.66	0.23	14.96	0.70	49.44
Last 5	12:43:32	3300.86	20.52	6.01	100.19	0.28	15.18	0.70	46.62
Last 5	12:48:32	3600.86	20.33	6.01	96.25	0.23	15.24	0.71	44.34
Variance 0			0.17	-0.00	-3.25			-0.01	-1.96
Variance 1			-0.04	0.00	1.53			-0.01	-2.82
Variance 2			-0.19	-0.01	-3.94			0.02	-2.28

Notes

Parameters stable. Weather:cloudy Starting water level was 8.06. Decreased purge rate to 150ml/min at 12:28

Grab Samples

HGWA-113
Sampling at 12:53

Product Name: Low-Flow System

Date: 2017-05-23 13:54:36

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.90 ft
Screen Length 10 ft
Depth to Water 13.37 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 54.36 in
Total Volume Pumped 13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 10	+/- 100
Last 5	13:32:14	2699.83	22.96	5.39	258.13	0.33	17.45	0.96	108.69
Last 5	13:37:14	2999.83	22.95	5.36	265.02	0.63	17.58	0.90	122.12
Last 5	13:42:14	3299.84	22.93	5.38	268.03	0.46	17.72	0.86	132.33
Last 5	13:47:14	3599.84	23.47	5.37	273.75	0.59	17.83	0.82	138.83
Last 5	13:52:14	3899.84	23.96	5.39	272.78	0.71	17.90	0.78	143.25
Variance 0			-0.02	0.02	3.00			-0.04	10.21
Variance 1			0.53	-0.00	5.72			-0.04	6.50
Variance 2			0.50	0.02	-0.96			-0.04	4.42

Notes

Weather: overcast ~70 F. Started Purging at 1247 @ 200 mL/min
Well parameters stable at 1352. Sample well at 1357 sample rate: 200 mL/min

Grab Samples

HGWC-101
Sample Time 13:57

Product Name: Low-Flow System

Date: 2017-05-23 15:09:27

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 14.44 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.24 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 2	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:46:59	600.03	20.78	6.11	789.69	1.82	14.46	2.49	143.45
Last 5	14:51:59	900.03	21.48	6.00	856.34	1.42	14.46	0.72	140.20
Last 5	14:56:59	1200.03	21.00	5.99	855.20	1.30	14.46	0.55	139.31
Last 5	15:01:59	1500.03	21.10	5.98	845.28	1.17	14.46	0.50	138.53
Last 5	15:06:59	1799.93	20.70	5.98	851.61	1.09	14.46	0.46	137.57
Variance 0			-0.47	-0.01	-1.14			-0.17	-0.89
Variance 1			0.09	-0.01	-9.92			-0.05	-0.78
Variance 2			-0.40	0.00	6.34			-0.04	-0.95

Notes

Weather: Sunny ~ 75F. Started purging at 14:37 @ 200 mL/min
Well parameters stable at 13:07. Sampled at 13:10 sample rate: 200 mL/min

Grab Samples

HGWC-103
Sample Time: 13:10

Product Name: Low-Flow System

Date: 2017-05-24 10:10:47

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 40 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.85 ft
Screen Length 10 ft
Depth to Water 17.48 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.540854 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.36 in
Total Volume Pumped 13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	09:45:52	2699.99	19.52	6.34	558.26	5.36	17.76	0.52	39.28
Last 5	09:50:52	2999.99	19.49	6.32	553.05	4.75	17.76	0.51	35.68
Last 5	09:55:52	3299.99	19.33	6.33	552.86	4.30	17.76	0.51	32.79
Last 5	10:00:52	3599.99	19.33	6.31	547.37	4.15	17.76	0.51	30.12
Last 5	10:05:52	3899.99	18.96	6.31	542.94	4.20	17.76	0.51	27.64
Variance 0			-0.17	0.01	-0.19			-0.00	-2.89
Variance 1			-0.00	-0.02	-5.49			-0.00	-2.67
Variance 2			-0.36	0.00	-4.43			0.00	-2.48

Notes

Weather: overcast ~65 F. Started purging at 09:01 @ 200 mL/min

Well parameters stable at 1006. Started sampling at 1010. Sample Rate: 200 mL/min. 2nd radium volume collected for QA/QC

Grab Samples

HGWC-105

Sample Time: 10:10

2nd Rad

--

Product Name: Low-Flow System

Date: 2017-05-24 11:43:19

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 37.95 ft
Screen Length 10 ft
Depth to Water 14.81 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.36 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	11:21:03	600.02	17.90	6.13	395.64	0.84	14.84	0.56	44.23
Last 5	11:26:03	900.02	18.03	6.10	394.17	0.32	14.84	0.52	47.28
Last 5	11:31:03	1200.02	17.71	6.08	393.19	0.55	14.84	0.51	50.60
Last 5	11:36:03	1499.98	17.65	6.07	394.67	0.39	14.84	0.47	52.59
Last 5	11:41:03	1800.00	17.71	6.06	393.62	0.67	14.84	0.43	54.47
Variance 0			-0.31	-0.02	-0.97			-0.02	3.32
Variance 1			-0.07	-0.02	1.48			-0.04	1.99
Variance 2			0.07	-0.01	-1.05			-0.03	1.88

Notes

Weather: rain ~65F. Started Purging at 1111 @ 200 mL/min.
Well parameters stable at 11:41. Sampled at 11:45. Sample rate 200ml/min

Grab Samples

HGWC-107
Sample Time: 11:45

Product Name: Low-Flow System

Date: 2017-05-24 13:08:58

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.02 ft
Screen Length 10 ft
Depth to Water 9.02 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4962198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:45:52	1199.98	17.92	6.33	344.35	0.74	9.06	0.38	19.82
Last 5	12:50:52	1500.04	17.80	6.37	344.61	1.97	9.06	0.38	11.80
Last 5	12:55:52	1799.99	18.58	6.40	344.21	1.90	9.06	0.37	5.07
Last 5	13:00:52	2099.98	19.42	6.42	344.60	1.28	9.06	0.37	-0.50
Last 5	13:05:52	2399.96	19.81	6.42	341.15	1.14	9.06	0.37	-4.74
Variance 0			0.78	0.03	-0.40			-0.01	-6.72
Variance 1			0.84	0.02	0.40			-0.00	-5.57
Variance 2			0.39	0.00	-3.45			-0.00	-4.24

Notes

Weather: overcast/rain ~70F. Started Purging at 12:26 @ 200 mL/min.
Well parameters stable at 13:06 well sampled at 13:10. Sample rate: 200 mL/min

Grab Samples

HGWC-109
Sample Time: 1310

Product Name: Low-Flow System

Date: 2017-05-23 10:12:08

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 34 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.20 ft
Screen Length 10 ft
Depth to Water 16.49 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.24 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 3%	+/- 5		+/- 10	+/- 100
Last 5	09:49:54	300.09	20.47	5.34	241.52	1.59	16.51	0.64	77.02
Last 5	09:54:54	600.02	19.67	5.22	244.12	3.42	16.52	0.29	64.24
Last 5	09:59:54	900.03	19.94	5.24	244.29	2.09	16.52	0.22	57.04
Last 5	10:04:54	1200.02	20.00	5.24	244.82	0.75	16.52	0.19	54.51
Last 5	10:09:54	1500.02	19.85	5.27	250.92	1.02	16.52	0.18	53.42
Variance 0			0.27	0.02	0.16			-0.07	-7.21
Variance 1			0.06	-0.00	0.53			-0.03	-2.52
Variance 2			-0.15	0.03	6.10			-0.01	-1.09

Notes

Weather: Raining ~ 65 F Started Purging @ 09:45 @ 200 mL/min.

Well parameters stable at 1010, HGWC-117 sampled at 1015 sample rate: 200 mL/min

Grab Samples

HGWC-117

Sample Time: 10:15

Product Name: Low-Flow System

Date: 2017-05-23 11:49:52

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 36 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.90 ft
Screen Length 10 ft
Depth to Water 13.46 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.540854 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.8 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 3%	+/- 5		+/- 0.2	+/- 100
Last 5	11:27:00	2099.87	20.32	6.89	565.05	1.12	13.61	0.90	59.88
Last 5	11:32:00	2399.87	20.25	6.91	563.27	0.17	13.61	1.18	60.39
Last 5	11:37:00	2699.87	20.36	6.91	563.20	0.49	13.61	1.28	60.62
Last 5	11:42:00	2999.87	20.56	6.92	560.73	1.05	13.61	1.32	61.07
Last 5	11:47:00	3299.87	20.43	6.92	558.73	1.13	13.61	1.32	61.88
Variance 0			0.11	0.00	-0.07			0.11	0.23
Variance 1			0.20	0.01	-2.47			0.04	0.45
Variance 2			-0.13	0.00	-2.00			0.00	0.81

Notes

Weather: light drizzle ~ 65 F. Started purging well at 10:52, purge rate: 200 mL/min.

Specific conductivity and DO took some time to stabilize. Well parameters stable at 11:47. Well sampled at 11:50 sample rate: 200 mL/min. Dup-1 collected.

Grab Samples
HGWC-118
Sample Time 11:50
DUP-1
--

Product Name: Low-Flow System

Date: 2017-08-10 09:51:45

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP-3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020 We

Pump Information:

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

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.20 ft
Screen Length 10 ft
Depth to Water 13.17 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 13.56 in
Total Volume Pumped 14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	09:28:59	3000.03	21.66	6.64	286.76	0.26	14.27	4.37	-68.22
Last 5	09:33:59	3300.03	21.53	6.68	303.88	0.33	14.28	4.27	-68.60
Last 5	09:38:58	3599.98	21.28	6.73	309.47	0.48	14.29	4.26	-69.11
Last 5	09:44:05	3906.98	21.32	6.76	318.54	0.44	14.30	4.21	-69.25
Last 5	09:49:05	4206.98	21.46	6.79	323.31	0.50	14.30	4.17	-69.39
Variance 0			-0.25	0.05	5.59			-0.01	-0.52
Variance 1			0.04	0.03	9.08			-0.05	-0.14
Variance 2			0.14	0.03	4.76			-0.04	-0.14

Notes

Weather: overcast ~75F. Started purging at 8:39. Purge rate 200 ml/min
Parameters stable at 09:49. Sampled at 09:55. Sample rate: 200ml/min. High DO values attributed to air bubbles in flow cell.

Grab Samples

HGWA-111
09:55

Product Name: Low-Flow System

Date: 2017-08-10 10:56:12

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP-3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020 We

Pump Information:

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

Pump placement from TOC 35 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.96 ft
Screen Length 10 ft
Depth to Water 13.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 20.4 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	10:34:15	600.03	21.30	5.64	89.78	0.83	14.69	1.81	-76.49
Last 5	10:39:15	900.03	21.18	5.61	89.52	0.94	14.79	1.72	-77.79
Last 5	10:44:15	1200.03	20.97	5.59	89.30	0.91	14.84	1.69	-78.52
Last 5	10:49:15	1500.03	20.99	5.59	88.71	1.01	14.91	1.66	-79.29
Last 5	10:54:15	1800.03	20.99	5.59	88.25	0.98	14.95	1.64	-79.83
Variance 0			-0.22	-0.02	-0.22			-0.03	-0.73
Variance 1			0.02	-0.00	-0.59			-0.03	-0.77
Variance 2			0.00	-0.00	-0.46			-0.02	-0.54

Notes

Weather: overcast/rain ~75F. Started purging at 10:23. Rate: 200ml/Min
Well Parameters stable @ 10:54. Sampled at 11:00. Sample Rate: 200 ml/min.

Grab Samples

HGWA-112
Sample Time: 11:00

Product Name: Low-Flow System

Date: 2017-08-10 13:05:47

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP-3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020 We

Pump Information:

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

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 36.14 ft
Screen Length 10 ft
Depth to Water 11.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4962198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 116.04 in
Total Volume Pumped 13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:42:57	4199.97	25.32	5.99	125.76	0.88	20.33	1.50	-86.89
Last 5	12:47:57	4499.97	26.79	5.98	122.67	0.81	20.55	1.49	-86.42
Last 5	12:52:57	4799.97	26.84	5.98	122.53	0.78	20.70	1.49	-87.12
Last 5	12:57:57	5099.97	27.29	5.99	121.73	0.89	20.81	1.50	-86.83
Last 5	13:02:57	5399.97	27.44	5.98	119.63	0.83	20.92	1.51	-89.16
Variance 0			0.05	0.00	-0.14			0.00	-0.71
Variance 1			0.45	0.00	-0.80			0.01	0.30
Variance 2			0.16	-0.01	-2.10			0.02	-2.33

Notes

Weather: overcast ~75F. Started purging at 11:33. Purge rate: 200 ml/min.
Purge rate decreased to 100 ml/min @ 1203 to minimize drawdown. Parameters stable at: 1303. Sampled at 1307. Sample rate: 100 ml/min.

Grab Samples

HGWA-113
Sample Time: 13:07

Product Name: Low-Flow System

Date: 2017-08-10 12:29:37

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type GeoPump
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 43 ft

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.91 ft
Screen Length 10 ft
Depth to Water 13.53 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2819272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 74 in
Total Volume Pumped 12.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 100
Last 5	12:00:46	2099.93	22.07	5.38	246.21	3.28	18.75	0.20	1.02
Last 5	12:05:46	2399.93	22.18	5.39	252.33	3.99	19.10	0.19	-0.12
Last 5	12:10:46	2699.93	21.77	5.40	256.15	2.32	19.39	0.18	0.13
Last 5	12:15:46	2999.93	22.49	5.43	267.25	4.25	19.58	0.17	-1.69
Last 5	12:20:46	3299.93	22.13	5.47	263.51	3.82	19.66	0.15	-2.23
Variance 0			-0.41	0.01	3.82			-0.01	0.24
Variance 1			0.72	0.03	11.10			-0.01	-1.82
Variance 2			-0.36	0.03	-3.74			-0.01	-0.54

Notes

1125 began purge at 250mL/min; 1150 reduce purge rate to 200mL/min; 1220 all parameters stable; 1225 sampled at 200mL/min. 80F Mostly Cloudy

Grab Samples

HGWC-101
Sampled at 1225

Product Name: Low-Flow System

Date: 2017-08-10 13:30:29

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type GeoPump
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 42 ft

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 14.53 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2774638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 100
Last 5	13:00:05	300.02	23.74	5.56	640.93	12.03	14.72	0.21	36.65
Last 5	13:05:05	599.95	22.00	5.60	657.58	5.59	14.73	0.13	40.45
Last 5	13:10:05	899.95	21.61	5.62	652.40	4.32	14.73	0.11	43.26
Last 5	13:15:05	1199.95	21.60	5.63	645.96	4.40	14.73	0.10	45.53
Last 5	13:20:07	1501.95	21.31	5.63	639.85	4.15	14.73	0.08	47.59
Variance 0			-0.39	0.01	-5.18			-0.02	2.81
Variance 1			-0.01	0.01	-6.44			-0.01	2.27
Variance 2			-0.29	0.00	-6.11			-0.01	2.06

Notes

1255 start purge at 250mL/min; 1320 all parameters stable; 1325 sampled at 250mL/min. 82F Mostly Cloudy

Grab Samples

HGWC-103
Sampled at 1325

Product Name: Low-Flow System

Date: 2017-08-10 14:26:34

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type GeoPump
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 46 ft

Pump placement from TOC 39 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.85 ft
Screen Length 10 ft
Depth to Water 18.07 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2953174 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 100
Last 5	14:00:03	299.98	23.34	5.86	210.45	6.97	18.07	0.59	40.13
Last 5	14:05:03	599.97	23.07	6.27	535.73	4.88	18.47	0.22	31.94
Last 5	14:10:03	899.97	22.18	6.48	545.84	4.96	18.47	0.16	26.42
Last 5	14:15:03	1199.97	22.25	6.48	545.96	3.30	18.46	0.13	24.44
Last 5	14:20:03	1499.97	22.29	6.45	536.47	2.93	18.46	0.11	21.56
Variance 0			-0.90	0.21	10.11			-0.06	-5.52
Variance 1			0.08	-0.00	0.12			-0.03	-1.98
Variance 2			0.03	-0.02	-9.50			-0.02	-2.87

Notes

1355 began purge 200mL/min; 1420 all parameters stable; 1425 sampled at 200mL/min. 84F Mostly Cloudy

Grab Samples

HGWC-105
Sampled at 1425

Product Name: Low-Flow System

Date: 2017-08-10 14:32:49

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP-3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020 We

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 37.95 ft
Screen Length 10 ft
Depth to Water 15.31 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5185369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.36 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:10:57	300.10	23.34	6.09	426.13	0.10	15.34	0.59	-75.67
Last 5	14:15:57	600.00	23.56	6.07	431.51	0.13	15.34	0.51	-83.13
Last 5	14:20:57	900.00	23.22	6.07	423.27	0.57	15.34	0.46	-87.44
Last 5	14:25:57	1199.99	23.53	6.06	419.03	0.41	15.34	0.45	-90.17
Last 5	14:30:57	1500.00	23.25	6.06	408.94	0.71	15.34	0.44	-92.37
Variance 0			-0.34	0.01	-8.24			-0.05	-4.31
Variance 1			0.31	-0.01	-4.24			-0.00	-2.72
Variance 2			-0.28	-0.00	-10.10			-0.02	-2.20

Notes

Weather: sunny/hot/humid ~80F. Started purging at 14:06. Purge rate: 200 ml/min.
Well Parameters stable at 14:31. Sampled at 14:35. Sample rate: 200ml/min

Grab Samples

HGWC-107
Sample Time: 14:35

Product Name: Low-Flow System

Date: 2017-08-10 15:25:10

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type GeoPump
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 32 ft

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.02 ft
Screen Length 10 ft
Depth to Water 9.52 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2328295 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1 in
Total Volume Pumped 6.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:55:50	300.04	24.65	6.39	340.96	2.11	9.57	2.34	18.05
Last 5	15:00:50	599.97	22.72	6.54	342.66	4.58	9.57	0.31	7.69
Last 5	15:05:50	899.97	22.54	6.60	341.13	1.77	9.57	0.27	1.02
Last 5	15:10:50	1199.97	22.27	6.61	343.54	1.17	9.57	0.34	-2.35
Last 5	15:15:50	1499.97	22.06	6.63	335.96	1.30	9.57	0.44	-5.12
Variance 0			-0.18	0.05	-1.53			-0.04	-6.67
Variance 1			-0.27	0.01	2.41			0.06	-3.37
Variance 2			-0.21	0.02	-7.57			0.10	-2.76

Notes
1450 began purge at 250mL/min; 1515 all parameters stable; 1520 sampled at 250mL/min. 85F Partly Cloudy

Grab Samples
HGWC-109
Sampled at 1520

Product Name: Low-Flow System

Date: 2017-08-10 09:45:02

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type GeoPump
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 43 ft

Pump placement from TOC 34 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.2 ft
Screen Length 10 ft
Depth to Water 16.46 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2819272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 100
Last 5	09:05:29	600.03	20.77	5.92	381.78	1.07	16.49	0.15	31.89
Last 5	09:10:29	900.03	20.53	6.08	454.98	0.65	16.49	0.12	18.22
Last 5	09:15:29	1200.03	20.72	6.18	486.59	0.74	16.49	0.11	9.14
Last 5	09:20:29	1499.89	20.75	6.23	501.01	0.54	16.49	0.10	2.15
Last 5	09:25:29	1799.89	20.86	6.27	507.66	0.63	16.49	0.09	-3.08
Variance 0			0.18	0.10	31.61			-0.02	-9.09
Variance 1			0.03	0.04	14.42			-0.01	-6.99
Variance 2			0.11	0.05	6.65			-0.01	-5.23

Notes

0855 start purge at 250mL/min; 0925 all parameters stable; 0930 sampled at 250mL/min. 74F Overcast

Grab Samples

HGWC-117
Sampled at 0930
DUP-1
Sampled at 0930

Product Name: Low-Flow System

Date: 2017-08-10 10:58:56

Project Information:

Operator Name Markevious Thomas
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type GeoPump
Tubing Type LDPE
Tubing Diameter .17 in
Tubing Length 43 ft

Pump placement from TOC 35 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.90 ft
Screen Length 10 ft
Depth to Water 13.51 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2819272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 8.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 100
Last 5	10:25:45	900.09	20.08	6.99	519.29	1.06	13.73	0.31	-8.47
Last 5	10:30:45	1199.94	20.75	7.00	510.25	1.01	13.73	0.26	-12.87
Last 5	10:35:45	1499.94	20.90	6.98	503.41	0.60	13.72	0.22	-13.76
Last 5	10:40:45	1799.94	20.66	6.99	500.93	1.08	13.72	0.20	-14.61
Last 5	10:45:45	2099.94	20.13	6.99	496.92	0.81	13.72	0.18	-15.18
Variance 0			0.15	-0.02	-6.84			-0.04	-0.90
Variance 1			-0.24	0.01	-2.49			-0.02	-0.84
Variance 2			-0.53	0.01	-4.01			-0.02	-0.57

Notes

1010 start purge at 250mL/min; 1015 SmarTroll did not log; 1020 SmarTroll did not log; 1045 all parameters stable; 1050 sampled at 250mL/min.
76F Overcast, light drizzle

Grab Samples

HGWC-118
Sampled at 1050
2nd Rad
Sampled at 1050

Product Name: Low-Flow System

Date: 2017-11-13 15:07:33

Project Information:

Operator Name T. Payne
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type Idpe
Tubing Diameter 0.17 in
Tubing Length 46 ft

Pump placement from TOC 38 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.2 ft
Screen Length 10 ft
Depth to Water 13.38 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2953174 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 8.04 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	14:50:09	300.11	20.93	6.20	118.59	0.59	13.89	4.48	48.65
Last 5	14:55:09	600.02	20.77	6.00	122.64	0.57	13.96	4.33	44.10
Last 5	15:00:09	900.02	20.66	5.95	125.77	0.20	14.03	4.28	41.19
Last 5	15:05:09	1200.02	20.75	5.94	128.43	0.25	14.05	4.22	37.76
Last 5									
Variance 0			-0.16	-0.20	4.05			-0.15	-4.55
Variance 1			-0.10	-0.05	3.13			-0.05	-2.91
Variance 2			0.09	-0.01	2.65			-0.06	-3.43

Notes

Begin purging at 1445. Parameters stable at 1505. Stop purging at 1505. Sample at 1510.

Grab Samples

HGWA-111
1510

Product Name: Low-Flow System

Date: 2017-11-13 15:12:14

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 35 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 39.96 ft
Screen Length 10 ft
Depth to Water 13.38 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.290854 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 23.04 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 2	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:49:49	600.02	20.38	5.56	71.03	2.61	14.83	1.50	73.30
Last 5	14:54:49	899.97	20.26	5.55	71.03	2.53	15.02	1.42	71.43
Last 5	14:59:49	1199.98	20.13	5.55	71.06	2.76	15.13	1.37	70.76
Last 5	15:04:49	1499.97	20.15	5.55	70.77	2.15	15.24	1.34	71.15
Last 5	15:09:49	1799.96	20.18	5.56	70.58	2.04	15.30	1.28	69.91
Variance 0			-0.13	-0.00	0.02			-0.06	-0.68
Variance 1			0.02	0.00	-0.29			-0.02	0.40
Variance 2			0.03	0.01	-0.19			-0.07	-1.25

Notes

Started purging HGWA-112 at 14:40. Purge rate: 200 ml/min.
Well parameters stable at 15:10. Sampled HGWA-112 at 15:15. Sample rate: 200 ml/min.

Grab Samples

HWGA-112
Sample Time: 15:15

Product Name: Low-Flow System

Date: 2017-11-14 09:12:29

Project Information:

Operator Name T. Payne
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte2020we

Pump Information:

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

Pump placement from TOC 31 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 36.14 ft
Screen Length 10 ft
Depth to Water 11.53 ft

Pumping Information:

Final Pumping Rate 0.1 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 41.4 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	08:48:21	1500.02	17.06	6.13	116.37	1.03	14.21	1.05	32.88
Last 5	08:53:21	1800.02	17.10	6.13	113.37	1.20	14.63	1.03	31.33
Last 5	08:58:21	2100.02	17.37	6.14	115.64	1.18	14.80	1.04	29.64
Last 5	09:03:21	2400.02	17.08	6.16	116.01	0.86	14.94	1.03	27.72
Last 5	09:08:21	2700.02	16.86	6.16	118.31	0.88	14.98	1.10	24.70
Variance 0			0.27	0.01	2.28			0.01	-1.68
Variance 1			-0.29	0.01	0.36			-0.01	-1.92
Variance 2			-0.21	0.00	2.31			0.07	-3.03

Notes

Begin purging at 0823. Initial purge rate of 0.2L/min. Lower purge rate to 0.1L/min at 0843 due to excessive drawdown. Parameters stable at 0908. Sample HGWA-113 at 0910.

Grab Samples

HGWA-113
0910

Product Name: Low-Flow System

Date: 2017-11-14 12:30:19

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.91 ft
Screen Length 10 ft
Depth to Water 15.02 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 74.28 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 2	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	12:07:49	2700.02	19.52	5.36	284.28	1.50	20.85	0.13	56.62
Last 5	12:12:49	3000.23	19.45	5.37	302.42	0.99	20.97	0.14	57.58
Last 5	12:17:49	3300.24	19.71	5.38	297.89	1.03	21.08	0.14	57.19
Last 5	12:22:49	3600.23	19.84	5.39	300.18	1.16	21.15	0.14	57.48
Last 5	12:27:49	3900.23	19.71	5.40	304.00	1.30	21.21	0.15	57.51
Variance 0			0.27	0.02	-4.54			0.00	-0.39
Variance 1			0.13	0.01	2.29			0.00	0.29
Variance 2			-0.13	0.01	3.82			0.01	0.02

Notes

Started purging HGWC-101 at 11:23. Purge rate: 200 ml/min.
Well parameters stable at 12:28. Sampled HGWC-101 at 12:32. Sample rate: 150 ml/min.

Grab Samples

HGWC-101
Sample Time: 12:32

Product Name: Low-Flow System

Date: 2017-11-14 12:28:20

Project Information:

Operator Name T. Payne
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte2020we

Pump Information:

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

Pump placement from TOC 32 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 15.51 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.8 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	12:09:21	300.13	18.75	5.71	677.66	0.28	15.65	0.29	54.79
Last 5	12:14:21	600.02	18.41	5.61	680.29	0.06	15.66	0.19	57.59
Last 5	12:19:21	900.02	18.40	5.60	678.40	0.51	15.66	0.18	58.89
Last 5	12:24:21	1200.02	18.37	5.59	681.64	0.30	15.66	0.16	60.37
Last 5									
Variance 0			-0.34	-0.09	2.63			-0.09	2.80
Variance 1			-0.01	-0.01	-1.89			-0.01	1.31
Variance 2			-0.03	-0.01	3.25			-0.02	1.48

Notes

Began purging at 1204. Parameters stable at 1224. Stop purging at 1224. Sample HGWC-103 at 1225.

Grab Samples

HGWC-103
1225

Product Name: Low-Flow System

Date: 2017-11-14 13:32:51

Project Information:

Operator Name T. Payne
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type Idpe
Tubing Diameter 0.17 in
Tubing Length 48 ft

Pump placement from TOC 40 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.85 ft
Screen Length 10 ft
Depth to Water 20.81 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3042443 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	13:14:52	600.15	18.39	6.13	519.46	2.98	21.11	0.27	43.67
Last 5	13:19:51	900.02	18.44	6.50	556.92	2.22	21.11	0.23	38.09
Last 5	13:24:51	1200.02	18.79	6.53	552.71	0.66	21.11	0.20	35.73
Last 5	13:29:51	1500.02	18.52	6.53	543.29	0.39	21.11	0.18	33.99
Last 5									
Variance 0			0.05	0.37	37.46			-0.04	-5.59
Variance 1			0.35	0.04	-4.21			-0.03	-2.35
Variance 2			-0.27	-0.01	-9.42			-0.02	-1.75

Notes

Began purging at 1304. Parameters stable at 1329. Stop purging at 1329. Sample HGWC-105 at 1330. Extra radium sample taken.

Grab Samples

HGWC-105
1330

Product Name: Low-Flow System

Date: 2017-11-14 13:33:18

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 37.95 ft
Screen Length 10 ft
Depth to Water 18.00 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.24 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 2	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	13:11:52	300.03	21.00	6.00	439.36	3.25	18.02	0.42	83.79
Last 5	13:16:52	599.92	20.85	6.01	439.69	1.70	18.02	0.21	84.95
Last 5	13:21:52	899.92	21.01	6.02	434.57	1.47	18.02	0.15	85.14
Last 5	13:26:52	1199.92	21.03	6.00	433.27	1.22	18.02	0.12	86.07
Last 5	13:31:52	1499.92	20.74	5.99	433.98	1.07	18.02	0.12	86.21
Variance 0			0.16	0.00	-5.12			-0.06	0.19
Variance 1			0.02	-0.02	-1.30			-0.02	0.93
Variance 2			-0.29	-0.00	0.70			-0.01	0.14

Notes

Started purging HGWC-107 at 13:07. Purge rate: 200 ml/min.
Well parameters stable at 13:22. Sampled HGWC-107 at 13:25. Sample rate: 200 ml/min.

Grab Samples

Product Name: Low-Flow System

Date: 2017-11-14 14:51:57

Project Information:

Operator Name W.Virgo
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020We

Pump Information:

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

Pump placement from TOC 26 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.02 ft
Screen Length 10 ft
Depth to Water 9.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2239027 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 2	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:27:49	1199.91	18.78	6.35	322.93	1.54	9.60	0.17	22.94
Last 5	14:32:49	1499.99	18.67	6.44	354.16	2.52	9.60	0.16	10.61
Last 5	14:37:49	1799.93	18.56	6.46	356.66	2.00	9.60	0.12	2.11
Last 5	14:42:49	2099.91	18.51	6.48	356.29	2.23	9.60	0.15	-4.24
Last 5	14:47:49	2399.91	18.47	6.50	356.21	1.83	9.60	0.13	-9.32
Variance 0			-0.11	0.02	2.50			-0.03	-8.50
Variance 1			-0.05	0.01	-0.37			0.02	-6.35
Variance 2			-0.04	0.02	-0.09			-0.02	-5.08

Notes

Started purging HGWC-109 at 14:08. Purge rate: 200 ml/min.

Lots of dead ants in protective casing. Well parameters stable at 14:48. Sampled HGWC-109 at 14:52. Sample rate: 200 ml/min.

Grab Samples

HGWC-109

Sample Time: 14:52

FB-1

Sample Time: 14:40

FERB-1
Sample Time: 14:45



Product Name: Low-Flow System

Date: 2017-11-14 10:31:14

Project Information:

Operator Name T. Payne
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte2020we

Pump Information:

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

Pump placement from TOC 34 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.2 ft
Screen Length 10 ft
Depth to Water 17.9 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2774638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.12 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	10:13:11	300.13	18.97	5.43	236.23	0.64	17.91	0.54	13.71
Last 5	10:18:11	600.02	18.88	5.38	238.28	0.22	17.91	0.32	13.12
Last 5	10:23:11	900.02	19.01	5.38	240.94	0.18	17.91	0.27	13.84
Last 5	10:28:11	1200.02	19.06	5.40	240.67	0.25	17.91	0.23	15.09
Last 5									
Variance 0			-0.09	-0.04	2.05			-0.22	-0.59
Variance 1			0.13	-0.01	2.67			-0.05	0.72
Variance 2			0.05	0.02	-0.27			-0.04	1.25

Notes

Began purging at 1008. Parameters stable at 1028. Stop purging at 1028. Sample at 1030.

Grab Samples

HGWC-17
1030

Product Name: Low-Flow System

Date: 2017-11-14 11:29:50

Project Information:

Operator Name T. Payne
Company Name ERM
Project Name GPC - Plant Hammond
Site Name AP 3&4
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type Idpe
Tubing Diameter 0.17 in
Tubing Length 44 ft

Pump placement from TOC 36 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.9 ft
Screen Length 10 ft
Depth to Water 14.94 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2863906 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1.56 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	11:12:16	300.14	19.06	6.72	578.29	0.12	15.07	0.32	36.23
Last 5	11:17:16	600.02	18.88	6.84	577.71	0.20	15.07	0.24	30.94
Last 5	11:22:16	900.02	18.92	6.88	576.14	0.17	15.07	0.22	27.86
Last 5	11:27:16	1200.02	19.15	6.90	564.94	0.17	15.07	0.19	25.90
Last 5									
Variance 0			-0.18	0.12	-0.58			-0.08	-5.29
Variance 1			0.04	0.04	-1.57			-0.02	-3.08
Variance 2			0.22	0.02	-11.20			-0.03	-1.96

Notes

Began purging at 1107. Parameters stable at 1127. Stop purging at 1127. Sample HGWC-118 at 1130.

Grab Samples

HGWC-118
1130

Product Name: Low-Flow System

Date: 2018-06-04 16:06:19

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 38 ft

Pump placement from TOC 36.14 ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.45 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:17:46	300.14	21.74	6.08	130.14	0.13	13.10	4.10	85.96
Last 5	15:22:46	600.02	21.48	6.11	130.01	0.16	13.18	4.09	81.44
Last 5	15:27:46	900.02	21.17	6.08	131.18	0.15	13.21	4.18	82.73
Last 5	15:32:46	1200.02	21.59	6.12	131.33	0.14	13.23	4.19	81.49
Last 5									
Variance 0			-0.26	0.03	-0.14			-0.02	-4.52
Variance 1			-0.31	-0.03	1.18			0.09	1.30
Variance 2			0.42	0.04	0.15			0.02	-1.24

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 43.20 ft

Grab Samples

HGWA-111
Grab

Product Name: Low-Flow System

Date: 2018-06-04 17:36:30

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 36.0 ft

Pump placement from TOC 33.45 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.60 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2506832 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:55:31	300.03	21.71	5.47	80.21	0.61	13.69	1.08	76.94
Last 5	17:00:31	600.02	21.35	5.56	80.80	0.54	13.84	1.07	71.42
Last 5	17:05:31	899.90	21.28	5.65	80.41	0.79	13.90	1.09	68.12
Last 5	17:10:31	1199.90	21.11	5.62	80.17	0.49	13.95	1.06	71.55
Last 5									
Variance 0			-0.35	0.09	0.59			-0.01	-5.52
Variance 1			-0.07	0.09	-0.38			0.01	-3.30
Variance 2			-0.18	-0.03	-0.25			-0.02	3.43

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 39.85 ft

Grab Samples

HGWA-112
Grab

Product Name: Low-Flow System

Date: 2018-06-05 11:09:49

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 31.14 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 8.96 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:20:19	1800.02	20.30	5.89	103.93	1.54	14.95	0.58	59.82
Last 5	10:25:19	2100.02	20.04	5.89	101.49	1.17	15.53	0.58	57.74
Last 5	10:30:19	2400.02	20.13	5.90	101.84	0.92	16.02	0.57	57.45
Last 5	10:35:19	2700.02	20.07	5.86	102.01	0.40	16.12	0.56	59.01
Last 5	10:40:19	3000.02	19.81	5.86	100.95	1.10	16.18	0.58	58.29
Variance 0			0.10	0.00	0.35			-0.01	-0.29
Variance 1			-0.06	-0.03	0.17			-0.01	1.56
Variance 2			-0.26	-0.00	-1.06			0.01	-0.72

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 38.11 ft

Grab Samples

HGWA-113
Grab

Product Name: Low-Flow System

Date: 2018-06-06 17:56:23

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33.26 ft

Pump placement from TOC 30.26 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 11.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2384534 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 9.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:00:00	1200.02	21.91	5.37	177.02	2.48	14.68	2.33	125.37
Last 5	17:05:00	1500.02	22.35	5.40	174.18	4.71	14.75	2.33	123.92
Last 5	17:10:00	1800.02	22.52	5.42	175.13	2.12	14.81	2.04	123.85
Last 5	17:15:00	2100.02	22.26	5.37	175.15	3.41	14.84	1.98	126.83
Last 5	17:20:00	2400.02	22.53	5.37	174.27	1.62	14.85	1.92	125.94
Variance 0			0.17	0.02	0.95			-0.29	-0.07
Variance 1			-0.26	-0.05	0.02			-0.06	2.98
Variance 2			0.27	0.00	-0.88			-0.06	-0.89

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 37.95 ft

Grab Samples

HGWC-101
Grab

Product Name: Low-Flow System

Date: 2018-06-06 16:09:39

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33.26 ft

Pump placement from TOC 30.26 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.31 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2384534 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:05:02	2100.80	18.83	5.50	720.13	6.83	14.48	0.52	100.61
Last 5	15:10:02	2400.80	19.17	5.49	719.38	5.13	14.48	0.60	101.29
Last 5	15:15:02	2700.81	18.90	5.49	714.12	4.98	14.48	0.54	102.21
Last 5	15:20:02	3000.80	18.92	5.49	714.79	4.46	14.48	0.46	102.32
Last 5	15:25:02	3300.81	18.91	5.49	709.78	4.65	14.48	0.41	103.03
Variance 0			-0.27	-0.00	-5.26			-0.06	0.92
Variance 1			0.01	0.01	0.68			-0.08	0.11
Variance 2			-0.01	-0.00	-5.02			-0.05	0.71

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 37.57 ft

Grab Samples

HGWC-103
Grab

Product Name: Low-Flow System

Date: 2018-06-06 13:49:41

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37.5 ft

Pump placement from TOC 35.36 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.64 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.2573784 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:53:30	1799.92	19.98	6.54	562.19	5.21	16.93	0.78	43.37
Last 5	12:58:30	2099.91	19.95	6.56	560.37	5.15	16.93	0.54	32.96
Last 5	13:03:30	2399.91	20.13	6.53	555.05	4.90	16.93	0.47	28.71
Last 5	13:08:30	2699.92	20.12	6.51	551.22	4.76	16.93	0.42	23.99
Last 5	13:13:30	2999.91	20.25	6.49	547.42	3.57	16.93	0.38	18.13
Variance 0			0.18	-0.03	-5.32			-0.07	-4.25
Variance 1			-0.00	-0.02	-3.83			-0.05	-4.71
Variance 2			0.12	-0.02	-3.81			-0.04	-5.87

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 44.85 ft

Grab Samples

HGWC-105
Grab

Product Name: Low-Flow System

Date: 2018-06-06 13:05:05

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.69 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:24:18	300.10	21.11	6.01	413.47	0.79	13.74	0.20	94.04
Last 5	12:29:18	600.03	20.78	6.01	414.00	0.75	13.74	0.16	93.99
Last 5	12:34:18	900.02	20.83	6.00	413.53	0.86	13.73	0.19	95.14
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.32	-0.00	0.53			-0.04	-0.05
Variance 2			0.05	-0.01	-0.47			0.03	1.15

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 38.08 ft

Grab Samples

HGWC-107
Grab

Product Name: Low-Flow System

Date: 2018-06-06 10:36:54

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 26 ft

Pump placement from TOC 23.93 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 8.65 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.206049 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:49:10	300.07	17.86	6.45	367.95	1.04	8.68	0.12	-20.57
Last 5	10:03:40	300.02	17.75	6.57	371.10	1.01	8.68	0.09	-40.74
Last 5	10:08:40	600.02	17.58	6.58	366.80	0.71	8.68	0.08	-42.17
Last 5	10:13:40	900.02	17.55	6.59	368.85	0.84	8.68	0.07	-44.72
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.17	0.01	-4.30			-0.01	-1.43
Variance 2			-0.04	0.01	2.05			-0.01	-2.55

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 30.98 ft

Grab Samples

HGWC-109
Grab

Product Name: Low-Flow System

Date: 2018-06-07 10:09:53

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.72 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:33:56	300.08	19.90	5.24	265.59	0.33	15.75	0.17	138.38
Last 5	09:38:56	600.24	19.72	5.25	268.29	0.95	15.75	0.14	127.19
Last 5	09:43:56	900.24	19.76	5.29	269.61	0.49	15.75	0.12	122.37
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.18	0.01	2.71			-0.03	-11.19
Variance 2			0.04	0.04	1.31			-0.02	-4.82

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 39.90 ft

Grab Samples

HGWC-117
Grab

Product Name: Low-Flow System

Date: 2018-06-07 10:52:00

Project Information:

Operator Name Nardos Tilahun
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 541714
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.64 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:54:37	300.13	19.61	7.03	529.51	2.51	12.76	0.54	75.29
Last 5	09:59:37	600.02	19.54	7.03	529.09	0.97	12.76	0.38	68.07
Last 5	10:04:37	900.02	19.52	7.04	528.57	1.04	12.76	0.40	62.88
Last 5	10:09:37	1200.02	19.53	7.03	523.30	0.77	12.76	0.36	59.45
Last 5									
Variance 0			-0.06	0.01	-0.43			-0.17	-7.22
Variance 1			-0.02	0.00	-0.51			0.02	-5.18
Variance 2			0.01	-0.00	-5.28			-0.03	-3.43

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 120-mL plastic bottle for Fluoride (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL plastic bottle for TDS (EPA 2540C). Total depth: 40.85 ft

Grab Samples

HGWC-118
Grab

Product Name: Low-Flow System

Date: 2018-10-01 14:15:36

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 38.0 ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.80 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:37:20	300.12	24.13	5.83	110.20	2.82	13.31	4.48	-21.39
Last 5	13:42:20	600.02	24.17	5.90	110.11	1.53	13.40	4.45	-42.52
Last 5	13:47:20	900.02	24.23	5.92	109.64	1.91	13.45	4.51	-43.49
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.04	0.07	-0.09			-0.03	-21.13
Variance 2			0.05	0.02	-0.47			0.06	-0.97

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B and 7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=43.26 ft.

Grab Samples

HGWA-111
Grab

Product Name: Low-Flow System

Date: 2018-10-01 15:31:18

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC 35.15 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 11.60 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2551467 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:51:10	300.03	24.59	5.66	80.62	0.90	12.45	1.32	-24.66
Last 5	14:56:10	600.02	23.75	5.61	81.54	2.78	12.55	1.21	-23.08
Last 5	15:01:10	900.02	22.93	5.60	81.89	1.68	12.57	1.26	-35.14
Last 5	15:06:10	1200.02	22.53	5.62	82.00	2.53	12.59	1.22	-49.89
Last 5									
Variance 0			-0.85	-0.04	0.92			-0.11	1.58
Variance 1			-0.82	-0.01	0.35			0.04	-12.06
Variance 2			-0.40	0.02	0.11			-0.03	-14.75

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=39.90 ft.

Grab Samples

HGWA-112
Grab

Product Name: Low-Flow System

Date: 2018-10-01 16:53:46

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33.53 ft

Pump placement from TOC 31.53 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.12 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2396586 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:16:16	300.02	25.69	5.93	87.42	1.91	11.50	1.19	-25.36
Last 5	16:21:16	600.02	25.73	5.94	88.33	1.81	11.55	1.13	-25.45
Last 5	16:26:16	900.02	24.33	5.94	88.39	2.29	11.62	1.15	-27.35
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.04	0.01	0.92			-0.06	-0.09
Variance 2			-1.40	-0.01	0.06			0.02	-1.90

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=36.20 ft.

Grab Samples

HGWA-113
Grab

Product Name: Low-Flow System

Date: 2018-10-03 13:31:05

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 34.94 ft

Pump placement from TOC 32.94 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.65 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.245952 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:42:53	1200.02	22.17	5.47	237.32	1.59	14.67	0.15	-63.90
Last 5	12:47:53	1500.02	22.20	5.44	244.43	2.27	14.68	0.14	-61.95
Last 5	12:52:53	1800.02	22.19	5.42	257.64	2.25	14.68	0.13	-61.90
Last 5	12:57:53	2100.02	22.17	5.39	260.38	2.01	14.69	0.13	-60.25
Last 5	13:02:54	2400.87	22.17	5.39	263.59	2.40	14.69	0.13	-58.62
Variance 0			-0.00	-0.02	13.21			-0.00	0.05
Variance 1			-0.02	-0.03	2.75			-0.01	1.65
Variance 2			0.00	-0.00	3.20			0.00	1.64

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=37.99 ft.

Grab Samples

HGWC-101
Grab

Product Name: Low-Flow System

Date: 2018-10-03 14:44:49

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 34.68 ft

Pump placement from TOC 32.68 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 14.40 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2447915 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:05:16	300.02	20.83	5.56	737.64	5.58	14.54	0.23	-63.01
Last 5	14:10:16	600.02	20.12	5.55	745.42	2.72	14.54	0.17	-62.35
Last 5	14:15:16	900.02	19.99	5.55	750.01	3.73	14.54	0.14	-61.03
Last 5	14:20:17	1200.79	19.88	5.53	747.40	3.58	14.54	0.15	-60.99
Last 5									
Variance 0			-0.71	-0.01	7.78			-0.06	0.66
Variance 1			-0.13	-0.00	4.59			-0.03	1.32
Variance 2			-0.10	-0.01	-2.62			0.01	0.04

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=37.63 ft.

Grab Samples

HGWC-103
Grab

Product Name: Low-Flow System

Date: 2018-10-02 16:47:00

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 41.67 ft

Pump placement from TOC 39.67 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 18.75 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2759908 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:06:53	300.02	22.31	6.31	199.64	3.52	19.01	0.32	-60.91
Last 5	16:11:53	600.02	21.92	6.24	201.33	2.40	19.01	0.24	-68.37
Last 5	16:16:53	900.02	21.35	6.21	199.76	3.03	19.02	0.21	-70.49
Last 5	16:21:53	1200.02	21.22	6.18	200.02	1.99	19.02	0.19	-69.74
Last 5									
Variance 0			-0.39	-0.07	1.68			-0.08	-7.46
Variance 1			-0.56	-0.03	-1.57			-0.03	-2.12
Variance 2			-0.13	-0.03	0.26			-0.02	0.76

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=44.91 ft.

Grab Samples

HGWC-105
Grab

Product Name: Low-Flow System

Date: 2018-10-02 15:41:28

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35.20 ft

Pump placement from TOC 33.20 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.71 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2471125 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:05:09	300.02	23.06	6.20	402.72	1.10	15.76	0.26	-41.82
Last 5	15:10:09	600.02	22.81	6.19	409.65	1.08	15.77	0.20	-70.26
Last 5	15:15:09	900.02	22.82	6.18	409.67	0.61	15.76	0.19	-70.25
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.25	-0.01	6.93			-0.07	-28.44
Variance 2			0.00	-0.01	0.02			-0.00	0.02

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0).TD=38.11ft.

Grab Samples

HGWC-107
Grab

Product Name: Low-Flow System

Date: 2018-10-02 14:33:16

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 28.36 ft

Pump placement from TOC 26.36 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 9.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2165827 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:53:44	300.02	22.52	6.78	314.58	0.44	9.29	0.16	-66.83
Last 5	13:58:44	600.02	22.04	6.60	319.11	0.47	9.29	0.12	-76.96
Last 5	14:03:44	900.02	22.07	6.56	320.67	0.31	9.29	0.09	-77.72
Last 5	14:08:44	1200.47	22.15	6.54	320.65	0.68	9.38	0.08	-78.21
Last 5									
Variance 0			-0.48	-0.18	4.53			-0.04	-10.13
Variance 1			0.03	-0.04	1.56			-0.02	-0.76
Variance 2			0.09	-0.01	-0.03			-0.01	-0.49

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0).TD=31.03 ft.

Grab Samples

HGWC-109
Grab

Product Name: Low-Flow System

Date: 2018-10-03 11:04:04

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37.26 ft

Pump placement from TOC 35.26 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.05 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2563071 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:02:44	2100.90	20.89	5.91	412.76	0.31	17.06	0.56	-69.05
Last 5	10:07:44	2400.90	21.01	5.96	443.83	0.25	17.06	0.50	-69.93
Last 5	10:12:44	2700.90	20.85	6.02	468.26	0.32	17.06	0.42	-70.46
Last 5	10:17:44	3000.90	20.97	6.06	477.64	0.38	17.06	0.40	-70.98
Last 5	10:22:44	3300.90	21.17	6.08	486.98	0.29	17.06	0.29	-71.20
Variance 0			-0.16	0.06	24.43			-0.07	-0.53
Variance 1			0.12	0.04	9.39			-0.03	-0.51
Variance 2			0.20	0.03	9.34			-0.11	-0.23

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=39.95 ft.

Grab Samples

HGWC-117
Grab
FD-03
Duplicate

Product Name: Low-Flow System

Date: 2018-10-03 12:01:41

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37.90 ft

Pump placement from TOC 35.90 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.85 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2591638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:28:24	300.07	22.53	6.99	519.44	0.75	14.00	0.21	-80.10
Last 5	11:33:23	600.03	22.13	7.07	517.43	0.51	14.00	0.15	-79.45
Last 5	11:38:23	900.02	21.99	7.08	514.54	0.36	14.00	0.12	-77.18
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.40	0.08	-2.01			-0.06	0.65
Variance 2			-0.14	0.02	-2.89			-0.03	2.27

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and App. IV metals (EPA 6020B/7470A); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=40.90 ft.

Grab Samples

HGWC-118
Grab

Product Name: Low-Flow System

Date: 2019-04-01 17:13:29

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35.0 ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-111
Well diameter 2 in
Well Total Depth 43.67 ft
Screen Length 10 ft
Depth to Water 10.60 ft

Pumping Information:

Final Pumping Rate 215 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:49:32	600.01	18.65	6.61	259.27	0.97	11.61	5.09	66.50
Last 5	16:54:32	900.01	18.48	6.77	317.68	0.74	11.63	4.13	65.82
Last 5	16:59:32	1200.00	18.63	6.95	348.69	0.83	11.65	3.67	65.75
Last 5	17:04:32	1499.99	18.70	7.04	354.62	0.76	11.66	3.50	66.31
Last 5	17:09:32	1799.99	18.70	7.09	357.55	0.78	11.68	3.38	66.38
Variance 0			0.16	0.18	31.01			-0.46	-0.07
Variance 1			0.07	0.09	5.92			-0.17	0.56
Variance 2			0.00	0.06	2.94			-0.12	0.07

Notes

Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B/7470A). Total depth = 43.21 ft.

Grab Samples

HGWC-111
Grab

Product Name: Low-Flow System

Date: 2019-04-02 12:13:36

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 40.0 ft

Pump placement from TOC 35.0 ft

Well Information:

Well ID HGWA-112
Well diameter 2 in
Well Total Depth 40.0 ft
Screen Length 10 ft
Depth to Water 9.80 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2685369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:51:41	300.03	18.79	5.55	79.13	2.14	10.88	1.65	85.51
Last 5	11:56:41	600.01	18.70	5.53	79.27	2.05	11.03	1.58	86.44
Last 5	12:01:41	900.01	18.52	5.56	79.03	2.21	11.09	1.58	86.74
Last 5	12:06:41	1200.00	18.52	5.52	78.85	2.39	11.14	1.54	90.94
Last 5	12:11:41	1499.99	18.79	5.47	78.20	1.97	11.21	1.54	94.93
Variance 0			-0.18	0.03	-0.24			-0.00	0.30
Variance 1			-0.00	-0.04	-0.18			-0.03	4.21
Variance 2			0.27	-0.05	-0.65			-0.00	3.98

Notes

Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B/7470A). Total depth = 39.90 ft

Grab Samples

HGWC-112

Grab

Product Name: Low-Flow System

Date: 2019-04-02 14:45:59

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35.0 ft

Pump placement from TOC 32.0 ft

Well Information:

Well ID HGWA-113
Well diameter 2 in
Well Total Depth 37.0 ft
Screen Length 10 ft
Depth to Water 10.10 ft

Pumping Information:

Final Pumping Rate 110 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:30:57	300.03	18.19	6.02	96.10	1.26	11.42	3.65	100.51
Last 5	14:35:57	600.01	18.07	6.02	96.44	1.17	11.87	3.65	101.83
Last 5	14:40:57	900.01	17.92	6.00	97.08	--	--	3.59	102.75
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.11	0.00	0.34			-0.00	1.32
Variance 2			-0.15	-0.02	0.63			-0.06	0.92

Notes

iPad battery died at 1340 restarted pump at 1415

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 36.15

Grab Samples

HGWC-113

Grab

Product Name: Low-Flow System

Date: 2019-04-04 16:57:38

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 34.1 ft

Pump placement from TOC 33.0 ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth 37.90 ft
Screen Length 10 ft
Depth to Water 11.71 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.2422027 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:21:20	1799.99	18.43	5.30	255.59	1.54	14.48	3.16	95.66
Last 5	16:26:22	2101.99	18.43	5.33	256.31	1.64	14.56	3.05	98.48
Last 5	16:31:22	2401.98	18.43	5.28	259.29	1.10	14.65	2.74	103.00
Last 5	16:36:22	2701.98	18.38	5.31	259.40	1.67	14.66	2.89	104.60
Last 5	16:41:22	3001.97	18.41	5.31	260.07	1.48	14.70	2.98	106.32
Variance 0			0.00	-0.05	2.98			-0.31	4.51
Variance 1			-0.05	0.03	0.11			0.15	1.60
Variance 2			0.03	0.00	0.67			0.09	1.72

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 38.0

Grab Samples

HGWC-101

Grab

Product Name: Low-Flow System

Date: 2019-04-04 11:12:28

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33.0 ft

Pump placement from TOC 32.0 ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth 37.70 ft
Screen Length 10 ft
Depth to Water 11.44 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 19 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:47:59	4499.94	17.23	5.44	750.39	6.25	11.44	1.03	109.45
Last 5	10:52:59	4799.94	17.25	5.44	769.01	6.89	11.44	0.91	109.76
Last 5	10:57:59	5099.94	17.27	5.44	770.66	5.29	11.44	0.72	110.14
Last 5	11:02:59	5399.93	17.27	5.43	763.58	8.10	11.45	0.76	110.48
Last 5	11:07:59	5699.92	17.36	5.44	764.50	3.94	11.45	0.78	110.47
Variance 0			0.02	-0.00	1.66			-0.19	0.39
Variance 1			0.00	-0.01	-7.08			0.04	0.34
Variance 2			0.09	0.01	0.92			0.02	-0.01

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =37.70

Grab Samples

HGWC-103

Grab

FD-01

Grab

Product Name: Low-Flow System

Date: 2019-04-04 14:04:27

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 41.0 ft

Pump placement from TOC 39.0 ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth 44.85 ft
Screen Length 10 ft
Depth to Water 17.29 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2730004 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:21:35	2399.99	18.14	6.19	522.55	7.01	17.62	0.90	34.16
Last 5	13:26:35	2699.98	18.18	6.18	517.75	6.36	17.63	0.87	30.59
Last 5	13:31:35	2999.97	18.17	6.19	515.46	6.50	17.62	0.60	27.67
Last 5	13:36:35	3299.97	18.18	6.18	513.83	5.69	17.63	0.63	24.16
Last 5	13:41:35	3599.96	18.22	6.17	510.71	--	--	0.99	21.37
Variance 0			-0.01	0.02	-2.29			-0.27	-2.92
Variance 1			0.00	-0.01	-1.63			0.03	-3.51
Variance 2			0.04	-0.01	-3.12			0.36	-2.79

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 44.90

Grab Samples

HGWC-105
Grab

Product Name: Low-Flow System

Date: 2019-04-03 15:45:45

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 41.0 ft

Pump placement from TOC 39.0 ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth 44.0 ft
Screen Length 10 ft
Depth to Water 14.11 ft

Pumping Information:

Final Pumping Rate 215 mL/min
Total System Volume 0.2730004 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 1.075 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:08:32	300.09	19.39	6.05	422.03	7.12	16.15	2.35	46.64
Last 5	15:13:32	600.02	19.25	6.04	422.37	6.53	14.15	1.43	48.32
Last 5	15:18:32	900.01	19.14	6.07	421.08	4.40	14.15	1.39	49.62
Last 5	15:23:32	1200.00	19.20	6.06	418.46	3.14	14.16	1.66	51.38
Last 5									
Variance 0			-0.14	-0.00	0.34			-0.92	1.68
Variance 1			-0.11	0.02	-1.29			-0.04	1.30
Variance 2			0.06	-0.01	-2.62			0.27	1.76

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 38.09

Grab Samples

HGWC-107
Grab

Product Name: Low-Flow System

Date: 2019-04-03 13:59:24

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 27.0 ft

Pump placement from TOC 26.0 ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth 31.0 ft
Screen Length 10 ft
Depth to Water 6.75 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2105124 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:36:10	2399.97	18.72	6.39	327.98	6.29	6.79	0.88	18.91
Last 5	13:41:10	2699.97	18.83	6.42	323.78	5.11	6.80	0.70	17.15
Last 5	13:46:10	2999.96	18.65	6.43	325.07	6.02	6.79	0.72	15.94
Last 5	13:51:10	3299.95	18.63	6.41	320.89	7.59	6.79	0.86	14.44
Last 5	13:56:10	3599.95	18.62	6.42	326.65	3.56	6.79	0.59	13.53
Variance 0			-0.18	0.01	1.28			0.02	-1.21
Variance 1			-0.02	-0.02	-4.18			0.14	-1.51
Variance 2			-0.01	0.01	5.77			-0.27	-0.91

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =31.0

Grab Samples

HGWC-109
Grab

Product Name: Low-Flow System

Date: 2019-04-05 11:43:35

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35.90 ft

Pump placement from TOC 34.90 ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth 39.90 ft
Screen Length 10 ft
Depth to Water 15.82 ft

Pumping Information:

Final Pumping Rate 215 mL/min
Total System Volume 0.2502369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:58:33	1500.00	17.85	5.85	436.58	11.10	15.85	0.91	120.06
Last 5	11:03:33	1799.99	17.90	5.90	462.85	10.27	15.85	0.56	116.70
Last 5	11:08:33	2099.99	17.98	5.94	478.76	6.20	15.85	0.76	114.46
Last 5	11:13:33	2399.98	18.03	5.97	487.63	4.16	15.85	0.67	111.97
Last 5	11:18:33	2699.98	18.03	5.99	494.86	4.33	15.85	0.57	110.95
Variance 0			0.09	0.04	15.91			0.20	-2.24
Variance 1			0.05	0.03	8.87			-0.09	-2.49
Variance 2			-0.00	0.02	7.23			-0.10	-1.03

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 39.94

Grab Samples

HGWC-117

Grab

Product Name: Low-Flow System

Date: 2019-04-05 13:21:44

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37.90 ft

Pump placement from TOC 35.90 ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth 40.90 ft
Screen Length 10 ft
Depth to Water 12.20 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2591638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:42:32	300.09	17.63	6.94	472.02	5.85	12.37	1.57	106.24
Last 5	12:47:32	600.02	17.87	6.95	524.57	4.18	12.37	1.54	103.99
Last 5	12:52:32	900.01	18.00	6.97	524.15	4.52	12.36	1.59	102.31
Last 5	12:57:32	1200.01	18.03	6.96	523.90	3.39	12.37	1.43	101.01
Last 5	13:02:32	1500.00	18.20	6.96	522.95	3.11	12.38	1.52	99.67
Variance 0			0.13	0.02	-0.42			0.05	-1.68
Variance 1			0.03	-0.01	-0.25			-0.16	-1.31
Variance 2			0.17	0.00	-0.95			0.09	-1.33

Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 40.90

Grab Samples

HGWC-118
Grab

Product Name: Low-Flow System

Date: 2019-06-18 09:25:18

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 32 ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-101
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.70 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.2328295 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:03:29	1200.02	20.08	5.32	265.94	1.30	15.29	1.09	100.48
Last 5	09:08:30	1500.42	20.16	5.31	265.24	1.19	15.33	1.02	99.84
Last 5	09:13:30	1800.42	20.16	5.31	274.39	1.29	15.37	0.88	99.63
Last 5	09:18:30	2100.42	20.16	5.30	280.23	1.23	15.40	0.87	99.48
Last 5	09:23:30	2400.42	20.19	5.30	274.95	1.08	15.44	0.79	99.45
Variance 0			0.00	-0.01	9.15			-0.14	-0.21
Variance 1			0.00	-0.01	5.84			-0.01	-0.15
Variance 2			0.03	0.00	-5.28			-0.08	-0.03

Notes

Parameters to be analyzed: Sulfate. Total depth = 37.97

Grab Samples

HGWC-101
Grab

Product Name: Low-Flow System

Date: 2019-06-17 13:33:06

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 32 ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-103
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.43 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2328295 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:21:27	300.02	18.81	5.52	771.84	5.87	13.60	0.56	70.47
Last 5	13:26:27	600.02	18.81	5.53	770.40	5.21	13.59	0.69	69.35
Last 5	13:31:27	900.93	18.72	5.53	768.97	4.53	13.60	0.85	68.82
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.00	0.01	-1.45			0.14	-1.12
Variance 2			-0.09	0.00	-1.43			0.16	-0.53

Notes

Parameters to be analyzed: Boron, Calcium, Chloride, Sulfate, TDS. Total depth = 37.62

Grab Samples

HGWC-103
Grab

Product Name: Low-Flow System

Date: 2019-06-17 12:16:52

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 43 ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-105
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 17.89 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2819272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:05:00	300.02	19.93	6.59	586.53	6.35	18.27	0.65	21.76
Last 5	12:10:00	600.02	20.09	6.57	577.79	4.58	18.27	0.64	15.99
Last 5	12:15:00	900.02	20.06	6.55	568.12	3.36	18.27	0.60	10.28
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.16	-0.02	-8.73			-0.01	-5.77
Variance 2			-0.03	-0.02	-9.67			-0.04	-5.71

Notes

Parameters to be analyzed: Calcium, Sulfate, TDS. Total depth =44.87

Grab Samples

HGWC-105
Grab

Product Name: Low-Flow System

Date: 2019-06-17 10:59:39

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 33 ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-107
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.04 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:37:14	300.05	20.21	6.18	418.93	0.52	15.17	1.24	30.70
Last 5	10:42:15	600.44	20.28	6.18	391.94	0.72	15.17	1.19	29.50
Last 5	10:47:15	900.43	20.20	6.17	419.90	0.70	15.16	0.65	29.87
Last 5	10:52:15	1200.43	20.24	6.16	417.59	0.79	15.15	0.67	30.42
Last 5	10:57:15	1500.43	20.24	6.16	417.38	0.63	15.16	0.62	30.96
Variance 0			-0.09	-0.01	27.96			-0.54	0.37
Variance 1			0.04	-0.01	-2.31			0.02	0.55
Variance 2			-0.00	0.00	-0.21			-0.05	0.54

Notes

Parameters to be analyzed: Boron, Calcium, Chloride, Sulfate, TDS. Total depth = 38.09

Grab Samples

HGWC-107
Grab

Product Name: Low-Flow System

Date: 2019-06-17 09:43:56

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 26 ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-109
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 8.98 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.206049 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:31:35	300.02	18.24	6.53	362.50	4.06	9.04	0.89	-13.38
Last 5	09:36:35	599.94	18.19	6.56	362.38	3.71	9.05	0.91	-20.70
Last 5	09:41:35	899.94	18.14	6.60	361.39	1.18	9.04	0.89	-25.75
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.05	0.03	-0.11			0.02	-7.31
Variance 2			-0.05	0.03	-0.99			-0.02	-5.06

Notes

Parameters to be analyzed: Boron, Sulfate. Total depth = 30.99

Grab Samples

HGWC-109
Grab

Product Name: Low-Flow System

Date: 2019-06-18 11:26:17

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC ft

Well Information:

Well ID HGWC-117
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 16.50 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:14:54	300.02	19.48	5.31	260.67	1.08	16.54	0.42	113.90
Last 5	11:19:54	600.02	19.30	5.30	262.01	0.83	16.54	0.35	111.49
Last 5	11:24:54	900.54	19.39	5.33	273.94	0.79	16.54	0.28	109.11
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.17	-0.01	1.34			-0.07	-2.40
Variance 2			0.09	0.04	11.93			-0.07	-2.38

Notes

Parameters to be analyzed:Calcium, Sulfate, TDS. Total depth = 39.91

Grab Samples

HGWC-117
Grab

Product Name: Low-Flow System

Date: 2019-06-18 10:23:15

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC ft

Well Information:

Well ID HGWC-118
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.18 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:06:05	300.02	19.55	6.72	520.74	3.97	13.34	0.47	70.86
Last 5	10:11:05	600.02	19.39	6.79	522.67	3.08	13.34	0.39	66.01
Last 5	10:21:05	1200.02	19.33	6.85	523.95	2.63	13.34	0.29	61.56
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.16	0.07	1.93			-0.09	-4.85
Variance 2			-0.06	0.06	1.28			-0.10	-4.45

Notes

Parameters to be analyzed:Calcium, Fluoride, Sulfate, TDS. Total depth =40.86

Grab Samples

HGWC-118
Grab

APPENDIX B
Statistical Analyses

Table B-1
Detection Monitoring Prediction Limit Comparison
Plant Hammond AP-4, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Apr 5-9, 2019	Jun 17-18 2019
Purpose of Sampling Event:				Detection	Verification
Boron (mg/L)	HGWC-101	0.040	-	0.060 J ⁽³⁾	--
Boron (mg/L)	HGWC-103	0.040	-	2.4	2.3
Boron (mg/L)	HGWC-105	0.040	-	1.4 J ⁽³⁾	--
Boron (mg/L)	HGWC-107	0.040	-	0.89	0.86
Boron (mg/L)	HGWC-109	0.040	-	0.40	0.37
Boron (mg/L)	HGWC-117	0.040	-	1.0 J ⁽³⁾	--
Boron (mg/L)	HGWC-118	0.040	-	0.60 J ⁽³⁾	--
Calcium (mg/L)	HGWC-101	48.6	-	16.9	--
Calcium (mg/L)	HGWC-103	48.6	-	91.9	92.6
Calcium (mg/L)	HGWC-105	48.6	-	73.8	81.2
Calcium (mg/L)	HGWC-107	48.6	-	54.0	55.3
Calcium (mg/L)	HGWC-109	48.6	-	37.5	--
Calcium (mg/L)	HGWC-117	48.6	-	70.0	36.3
Calcium (mg/L)	HGWC-118	48.6	-	82.0	76.5
Chloride (mg/L)	HGWC-101	6.1	-	5.9	--
Chloride (mg/L)	HGWC-103	6.7	-	6.9	5.2
Chloride (mg/L)	HGWC-105	4.1	-	3.9	--
Chloride (mg/L)	HGWC-107	3.5	-	3.6	2.9
Chloride (mg/L)	HGWC-109	5.9	-	5.0	--
Chloride (mg/L)	HGWC-117	9.8	-	8.9	--
Chloride (mg/L)	HGWC-118	4.8	-	4.3	--
Fluoride (mg/L)	HGWC-101	0.26	-	ND	--
Fluoride (mg/L)	HGWC-103	0.26	-	0.042 J	--
Fluoride (mg/L)	HGWC-105	0.26	-	0.03 J	--
Fluoride (mg/L)	HGWC-107	0.26	-	ND	--
Fluoride (mg/L)	HGWC-109	0.26	-	0.05 J	--
Fluoride (mg/L)	HGWC-117	0.26	-	0.19 J	--
Fluoride (mg/L)	HGWC-118	0.26	-	0.33	0.89
pH (s.u.)	HGWC-101	7.0	5.6	5.3	5.3
pH (s.u.)	HGWC-103	7.0	5.6	5.4	5.5
pH (s.u.)	HGWC-105	7.0	5.6	6.2	--
pH (s.u.)	HGWC-107	7.0	5.6	6.1	--
pH (s.u.)	HGWC-109	7.0	5.6	6.4	--
pH (s.u.)	HGWC-117	7.0	5.6	6.0	--
pH (s.u.)	HGWC-118	7.0	5.6	7.0	--
Sulfate (mg/L)	HGWC-101	14.0	-	95.1	102
Sulfate (mg/L)	HGWC-103	14.0	-	358	311
Sulfate (mg/L)	HGWC-105	14.0	-	185	162
Sulfate (mg/L)	HGWC-107	14.0	-	139	126
Sulfate (mg/L)	HGWC-109	14.0	-	36.0	30.9
Sulfate (mg/L)	HGWC-117	14.0	-	141	116
Sulfate (mg/L)	HGWC-118	14.0	-	75.1	77.0

Table B-1
 Detection Monitoring Prediction Limit Comparison
 Plant Hammond AP-4, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Apr 5-9, 2019	Jun 17-18 2019
Purpose of Sampling Event:				Detection	Verification
TDS (mg/L)	HGWC-101	243	-	149	--
TDS (mg/L)	HGWC-103	243	-	535	515
TDS (mg/L)	HGWC-105	243	-	340	370
TDS (mg/L)	HGWC-107	243	-	273	272
TDS (mg/L)	HGWC-109	243	-	210	--
TDS (mg/L)	HGWC-117	243	-	334	254
TDS (mg/L)	HGWC-118	243	-	308	215

Notes:

- = Not applicable

-- = Indicates the parameter was not analyzed as part of the verification event.

J = Indicates that analyte was estimated and detected between the laboratory Method Detection Limit (MDL) and Reporting Limit (RL).

mg/L = milligrams per liter

ND = Indicates the parameter was not detected above the laboratory MDL.

PL = Prediction Limit

s.u. = standard unit

TDS = Total Dissolved Solids

(1) Shaded values indicate an exceedance of the statistically derived PL.

(2) The pH value presented was recorded at the time of sample collection in the field. This is the only parameter in which the field result is compared to both the upper and lower PL.

(3) Value J-flagged by the laboratory as estimated with an elevated RL due to an elevated Dilution Factor. The concentration reported for the April 2019 event is consistent with historical data and therefore deemed an exceedance.

Intrawell Prediction Limit - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/12/2019, 5:31 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L) (1)	HGWA-111	3.542	n/a	4/1/2019	4	Yes	8	0	No	0.001075	Param Intra 1 of 3

Note:

(1) This well is considered a background well and therefore the determined laboratory result is not considered a statistical exceedance.

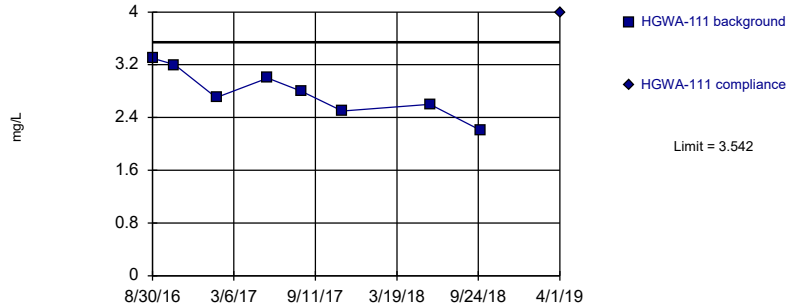
Intrawell Prediction Limit - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/12/2019, 5:31 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L)	HGWA-111	3.542	n/a	4/1/2019	4	Yes	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWA-112	5.704	n/a	4/2/2019	5.7	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWA-113	2.146	n/a	4/2/2019	1.8	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-101	6.065	n/a	4/4/2019	5.9	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-103	6.696	n/a	6/17/2019	5.2	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-105	4.085	n/a	4/4/2019	3.9	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-107	3.523	n/a	6/17/2019	2.9	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-109	5.883	n/a	4/3/2019	5	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-117	9.813	n/a	4/5/2019	8.9	No	8	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	HGWC-118	4.818	n/a	4/5/2019	4.3	No	8	0	No	0.001075	Param Intra 1 of 3

Exceeds Limit

Prediction Limit
Intrawell Parametric

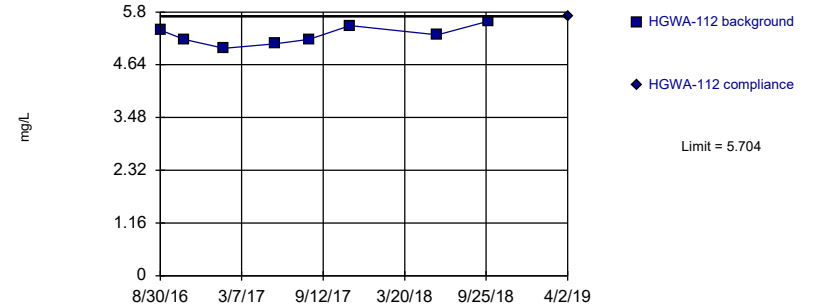


Background Data Summary: Mean=2.788, Std. Dev.=0.3682, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9765, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

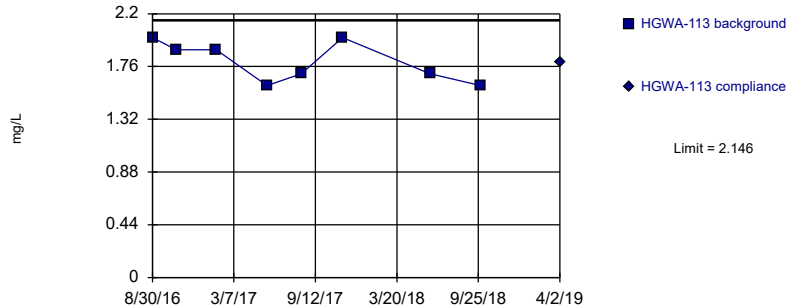


Background Data Summary: Mean=5.288, Std. Dev.=0.2031, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9734, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

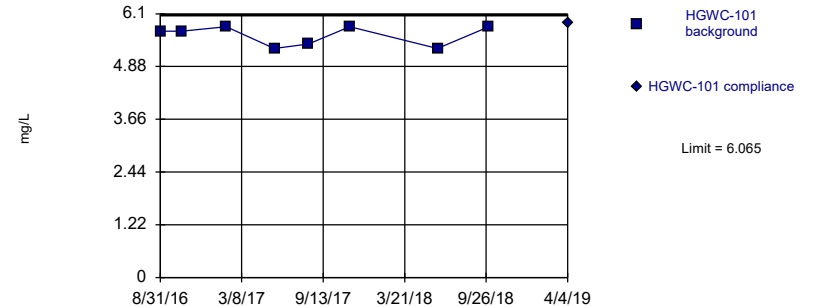


Background Data Summary: Mean=1.8, Std. Dev.=0.169, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.86, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

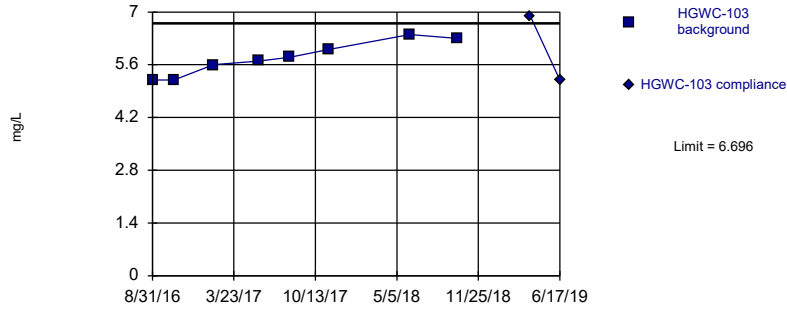


Background Data Summary: Mean=5.6, Std. Dev.=0.2268, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7818, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

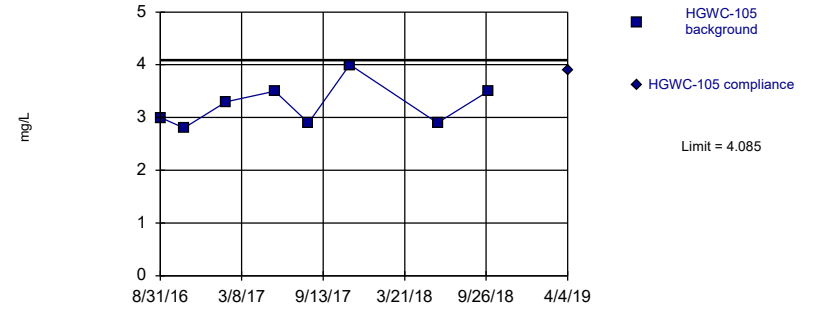


Background Data Summary: Mean=5.775, Std. Dev.=0.4496, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.934, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

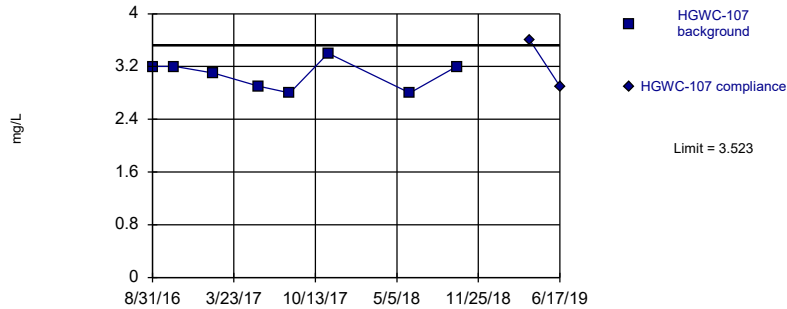


Background Data Summary: Mean=3.238, Std. Dev.=0.4138, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8979, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

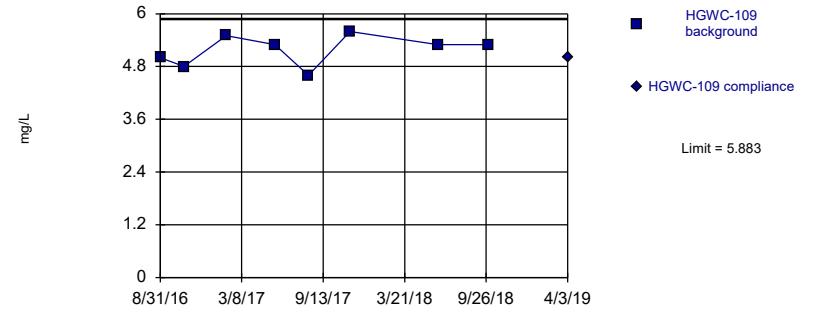


Background Data Summary: Mean=3.075, Std. Dev.=0.2188, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8951, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:29 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit
Intrawell Parametric

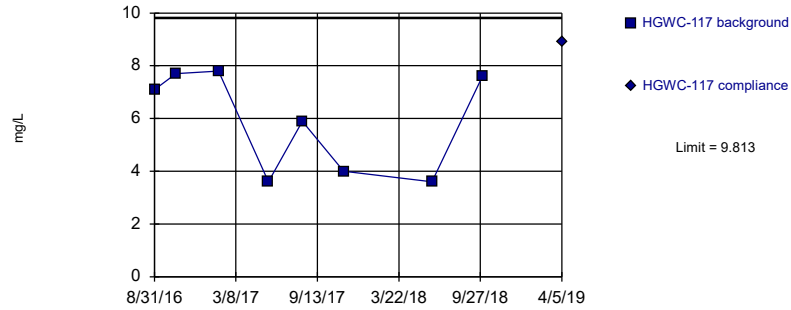


Background Data Summary: Mean=5.175, Std. Dev.=0.3454, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9253, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:30 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit Intrawell Parametric

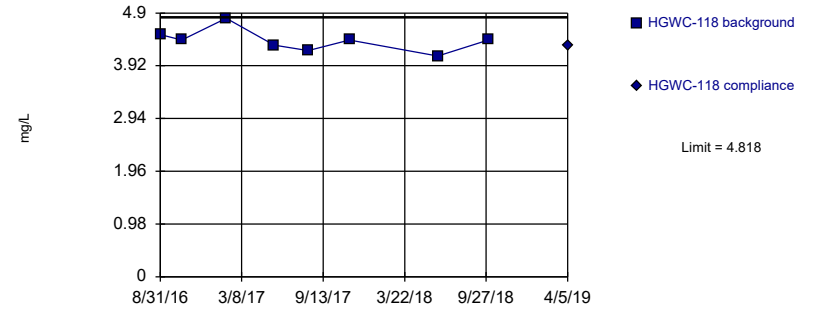


Background Data Summary: Mean=5.913, Std. Dev.=1.904, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8103, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:30 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=4.388, Std. Dev.=0.21, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9305, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 7/12/2019 5:30 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Interwell Prediction Limit - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/12/2019, 5:44 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-103	0.04	n/a	6/17/2019	2.3	Yes	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.04	n/a	6/17/2019	0.86	Yes	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.04	n/a	6/17/2019	0.37	Yes	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	48.6	n/a	6/17/2019	92.6	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	48.6	n/a	6/17/2019	81.2	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-107	48.6	n/a	6/17/2019	55.3	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	48.6	n/a	6/18/2019	76.5	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-118	0.2635	n/a	6/18/2019	0.89	Yes	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.02	5.56	6/18/2019	5.3	Yes	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.02	5.56	6/17/2019	5.53	Yes	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	6/18/2019	102	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	6/17/2019	311	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	6/17/2019	162	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	6/17/2019	126	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	6/17/2019	30.9	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	6/18/2019	116	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	6/18/2019	77	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	243	n/a	6/17/2019	515	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	243	n/a	6/17/2019	370	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-107	243	n/a	6/17/2019	272	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	243	n/a	6/18/2019	254	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2

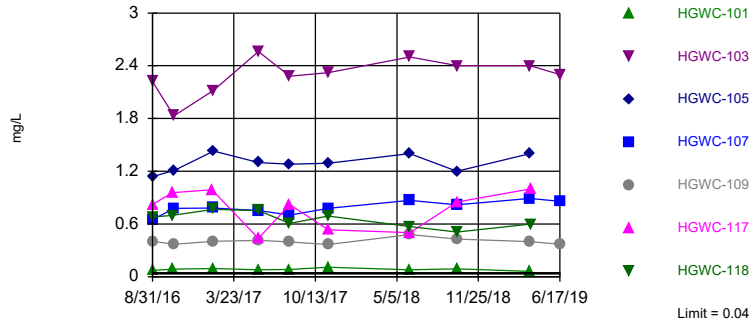
Interwell Prediction Limit - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/12/2019, 5:44 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bq N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-101	0.04	n/a	4/4/2019	0.06	No	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-103	0.04	n/a	6/17/2019	2.3	Yes	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-105	0.04	n/a	4/4/2019	1.4	No	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-107	0.04	n/a	6/17/2019	0.86	Yes	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-109	0.04	n/a	6/17/2019	0.37	Yes	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-117	0.04	n/a	4/5/2019	1	No	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Boron (mg/L)	HGWC-118	0.04	n/a	4/5/2019	0.6	No	24	25	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-101	48.6	n/a	4/4/2019	16.9	No	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	48.6	n/a	6/17/2019	92.6	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	48.6	n/a	6/17/2019	81.2	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-107	48.6	n/a	6/17/2019	55.3	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-109	48.6	n/a	4/3/2019	37.5	No	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	48.6	n/a	6/18/2019	36.3	No	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	48.6	n/a	6/18/2019	76.5	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-101	0.2635	n/a	4/4/2019	0.3ND	No	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-103	0.2635	n/a	4/4/2019	0.042	No	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-105	0.2635	n/a	4/4/2019	0.03	No	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-107	0.2635	n/a	4/3/2019	0.3ND	No	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-109	0.2635	n/a	4/3/2019	0.05	No	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-117	0.2635	n/a	4/5/2019	0.19	No	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-118	0.2635	n/a	6/18/2019	0.89	Yes	24	25	sqrt(x)	0.001075	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.02	5.56	6/18/2019	5.3	Yes	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.02	5.56	6/17/2019	5.53	Yes	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-105	7.02	5.56	4/4/2019	6.17	No	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-107	7.02	5.56	4/3/2019	6.06	No	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-109	7.02	5.56	4/3/2019	6.42	No	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-117	7.02	5.56	4/5/2019	5.99	No	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-118	7.02	5.56	4/5/2019	6.96	No	24	0	n/a	0.005798	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	6/18/2019	102	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	6/17/2019	311	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	6/17/2019	162	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	6/17/2019	126	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	6/17/2019	30.9	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	6/18/2019	116	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	6/18/2019	77	Yes	24	0	n/a	0.002899	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-101	243	n/a	4/4/2019	149	No	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	243	n/a	6/17/2019	515	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	243	n/a	6/17/2019	370	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-107	243	n/a	6/17/2019	272	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-109	243	n/a	4/3/2019	210	No	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	243	n/a	6/18/2019	254	Yes	23	0	x^(1/3)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	243	n/a	6/18/2019	215	No	23	0	x^(1/3)	0.001075	Param Inter 1 of 2

Exceeds Limit: HGWC-103, HGWC-107, HGWC-109

Prediction Limit
Interwell Non-parametric

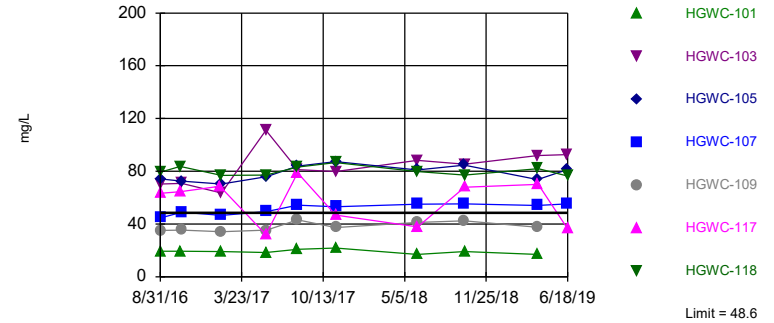


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. 25% NDs. Annual per-constituent alpha = 0.03983. Individual comparison alpha = 0.002899 (1 of 2). Comparing 7 points to limit.

Constituent: Boron Analysis Run 7/12/2019 5:35 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Exceeds Limit: HGWC-103, HGWC-105, HGWC-107, HGWC-118

Prediction Limit
Interwell Non-parametric

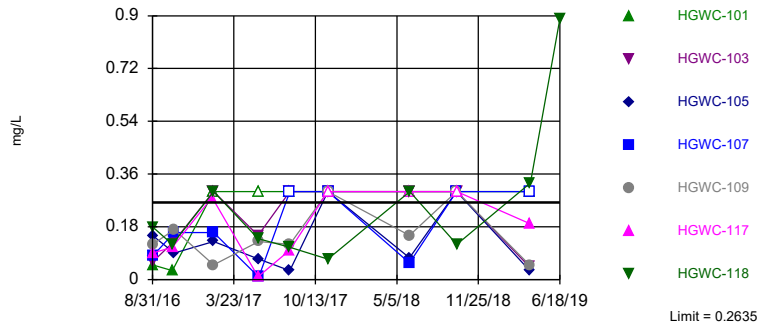


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Annual per-constituent alpha = 0.03983. Individual comparison alpha = 0.002899 (1 of 2). Comparing 7 points to limit.

Constituent: Calcium Analysis Run 7/12/2019 5:35 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Exceeds Limit: HGWC-118

Prediction Limit
Interwell Parametric

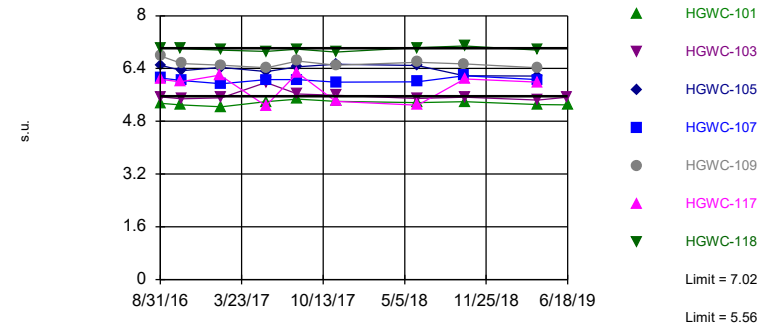


Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.2709, Std. Dev.=0.1159, n=24, 25% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9195, critical = 0.884. Kappa = 2.091 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Fluoride Analysis Run 7/12/2019 5:35 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Exceeds Limits: HGWC-101, HGWC-103

Prediction Limit
Interwell Non-parametric

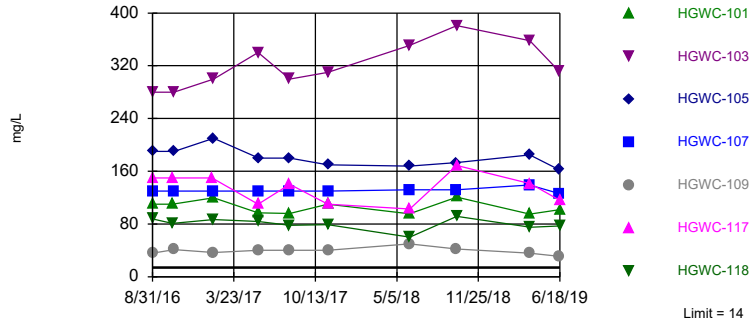


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 24 background values. Annual per-constituent alpha = 0.07966. Individual comparison alpha = 0.005798 (1 of 2). Comparing 7 points to limit.

Constituent: pH Analysis Run 7/12/2019 5:36 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Exceeds Limit: HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117

Prediction Limit
Interwell Non-parametric

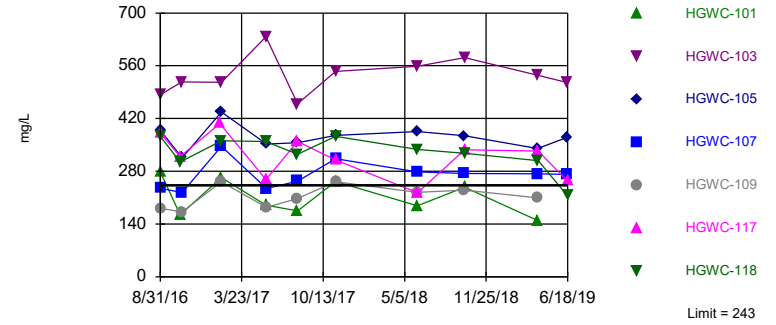


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Annual per-constituent alpha = 0.03983. Individual comparison alpha = 0.002899 (1 of 2). Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 7/12/2019 5:37 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Exceeds Limit: HGWC-103, HGWC-105, HGWC-107, HGWC-117

Prediction Limit
Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=4.705, Std. Dev.=0.7292, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8812, critical = 0.881. Kappa = 2.106 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:37 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Trend Test - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/12/2019, 5:57 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWA-111 (bg)	-0.004391	-21	-20	Yes	9	22.22	n/a	n/a	0.05	NP
Boron (mg/L)	HGWA-113 (bg)	-0.006571	-24	-20	Yes	9	11.11	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-107	0.05411	27	23	Yes	10	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-103	8.118	25	23	Yes	10	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-107	3.592	33	23	Yes	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.915	-26	-20	Yes	9	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-103	28.37	29	23	Yes	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-105	-10.02	-25	-23	Yes	10	0	n/a	n/a	0.05	NP

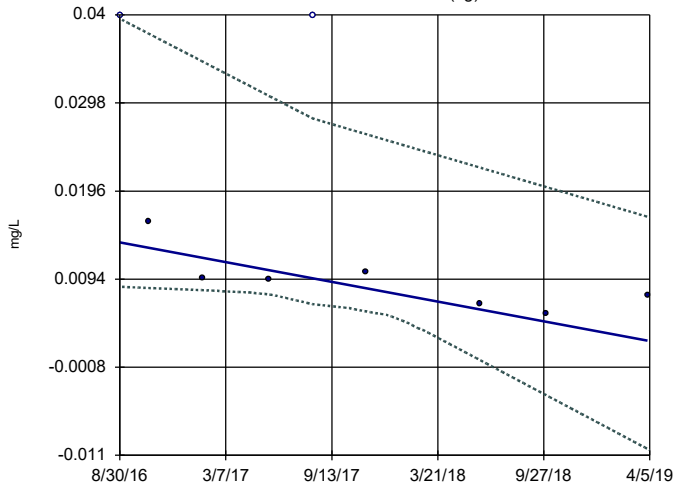
Trend Test - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/12/2019, 5:56 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWA-111 (bg)	-0.004391	-21	-20	Yes	9	22.22	n/a	n/a	0.05	NP
Boron (mg/L)	HGWA-112 (bg)	-0.002438	-13	-20	No	9	33.33	n/a	n/a	0.05	NP
Boron (mg/L)	HGWA-113 (bg)	-0.006571	-24	-20	Yes	9	11.11	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-101	0.000483	0	20	No	9	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-103	0.08295	16	23	No	10	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-105	0.0743	9	20	No	9	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-107	0.05411	27	23	Yes	10	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-109	-0.0007565	-1	-23	No	10	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-117	0.009223	3	20	No	9	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-118	-0.07734	-18	-20	No	9	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWA-111 (bg)	-5.546	-6	-20	No	9	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWA-112 (bg)	-0.03512	0	20	No	9	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWA-113 (bg)	0.3163	11	20	No	9	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-103	8.118	25	23	Yes	10	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-105	3.291	15	23	No	10	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-107	3.592	33	23	Yes	10	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-118	-0.6658	-7	-23	No	10	0	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWA-111 (bg)	0	0	20	No	9	22.22	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWA-112 (bg)	0.1015	14	20	No	9	55.56	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWA-113 (bg)	-0.006904	-6	-20	No	9	0	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWC-118	0.0565	11	23	No	10	0	n/a	n/a	0.05	NP
pH (s.u.)	HGWA-111 (bg)	-0.3996	-10	-20	No	9	0	n/a	n/a	0.05	NP
pH (s.u.)	HGWA-112 (bg)	-0.07243	-17	-20	No	9	0	n/a	n/a	0.05	NP
pH (s.u.)	HGWA-113 (bg)	-0.0007566	0	20	No	9	0	n/a	n/a	0.05	NP
pH (s.u.)	HGWC-101	0	-1	-23	No	10	0	n/a	n/a	0.05	NP
pH (s.u.)	HGWC-103	-0.01637	-8	-23	No	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWA-111 (bg)	-0.1184	-9	-20	No	9	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWA-112 (bg)	0.04104	3	20	No	9	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.915	-26	-20	Yes	9	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-101	-1.445	-12	-23	No	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-103	28.37	29	23	Yes	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-105	-10.02	-25	-23	Yes	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-107	0	11	23	No	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-109	0	-1	-23	No	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-117	-6.724	-11	-23	No	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-118	-3.724	-19	-23	No	10	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWA-111 (bg)	-7.604	-2	-20	No	9	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	1.387	3	17	No	8	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWA-113 (bg)	1.137	1	20	No	9	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWC-103	20.06	7	23	No	10	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWC-105	-3.147	-5	-23	No	10	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWC-107	14.68	7	23	No	10	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWC-117	-24.43	-17	-23	No	10	0	n/a	n/a	0.05	NP

Sen's Slope and 95% Confidence Band

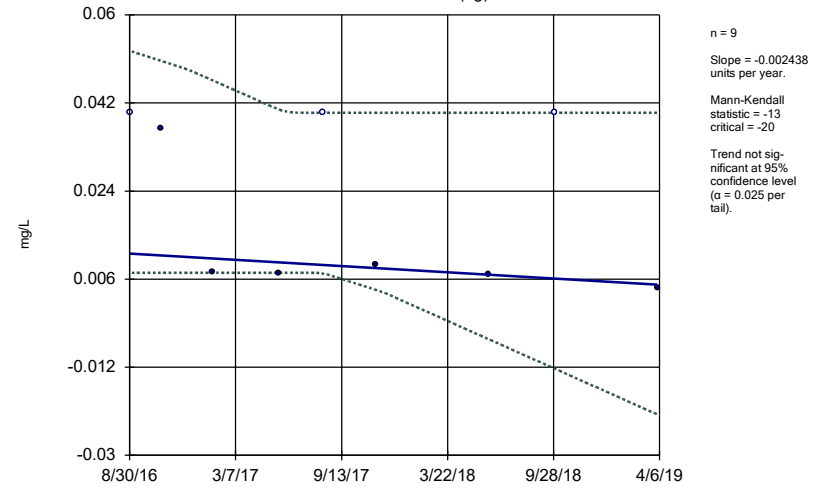
HGWA-111 (bg)



Constituent: Boron Analysis Run 7/12/2019 5:47 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

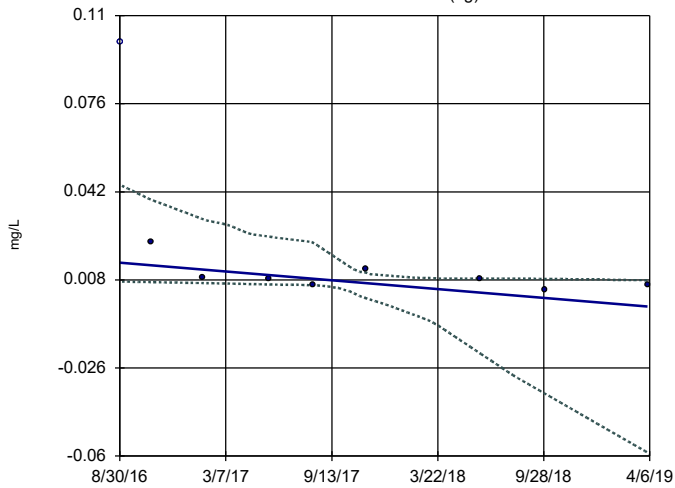
HGWA-112 (bg)



Constituent: Boron Analysis Run 7/12/2019 5:47 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

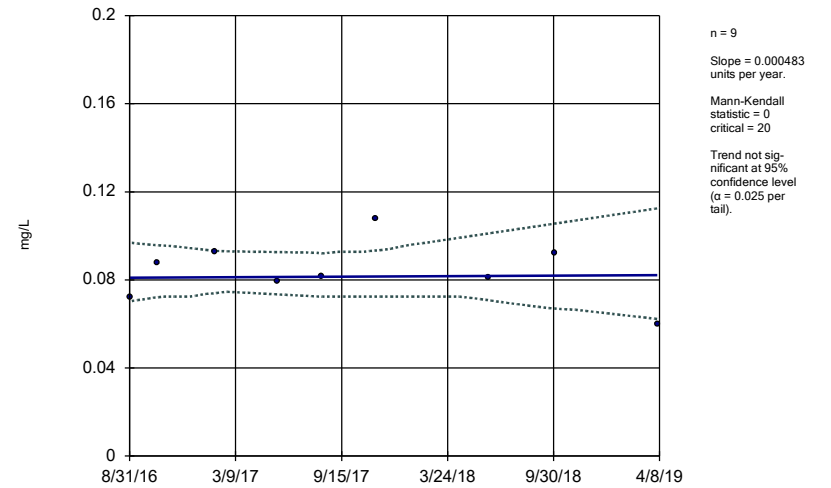
HGWA-113 (bg)



Constituent: Boron Analysis Run 7/12/2019 5:47 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

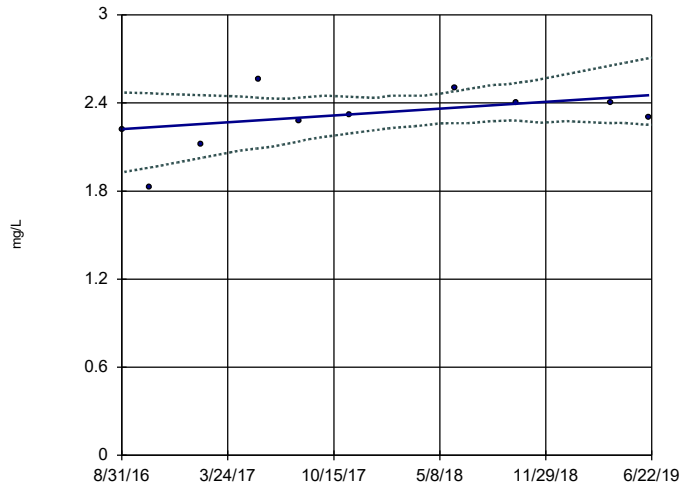
HGWC-101



Constituent: Boron Analysis Run 7/12/2019 5:47 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-103



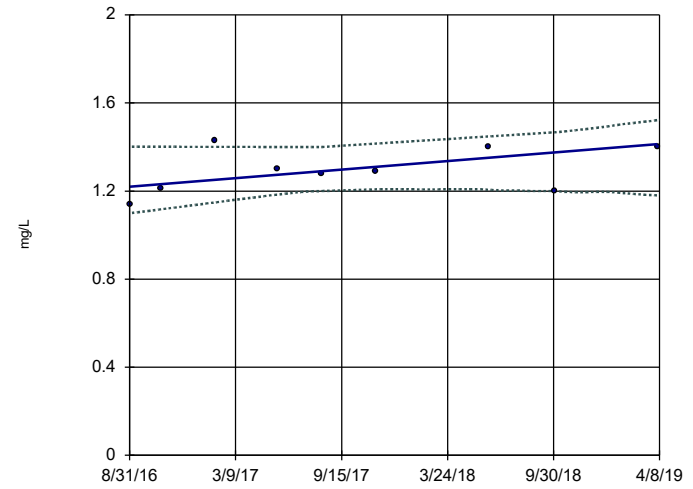
n = 10
 Slope = 0.08295
 units per year.
 Mann-Kendall
 statistic = 16
 critical = 23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Boron Analysis Run 7/12/2019 5:48 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-105



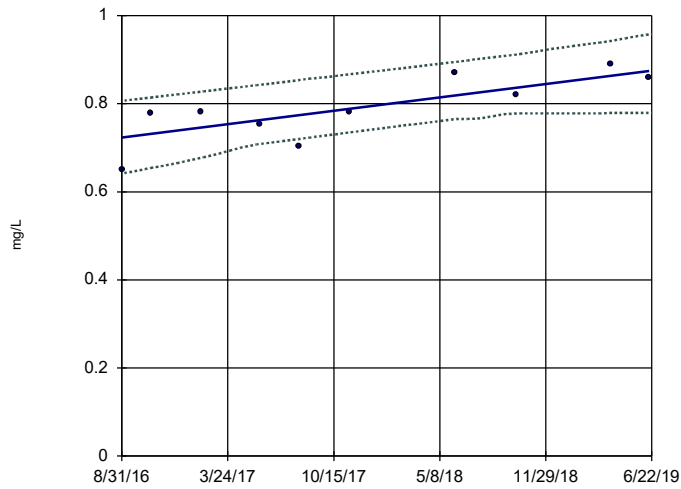
n = 9
 Slope = 0.0743
 units per year.
 Mann-Kendall
 statistic = 9
 critical = 20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Boron Analysis Run 7/12/2019 5:48 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-107



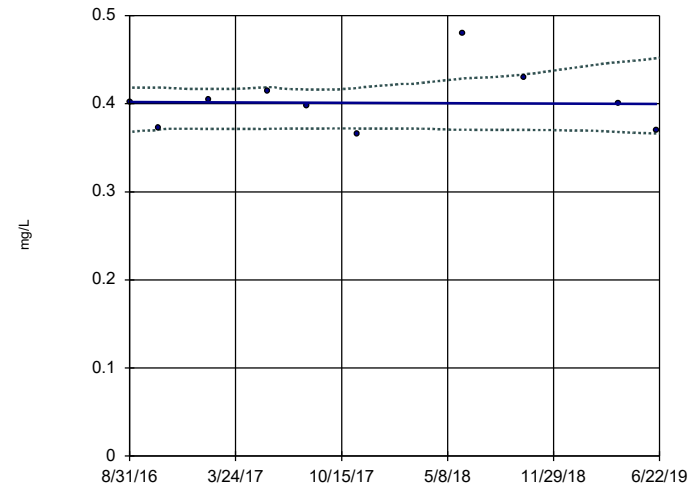
n = 10
 Slope = 0.05411
 units per year.
 Mann-Kendall
 statistic = 27
 critical = 23
 Increasing trend
 significant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Boron Analysis Run 7/12/2019 5:48 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-109



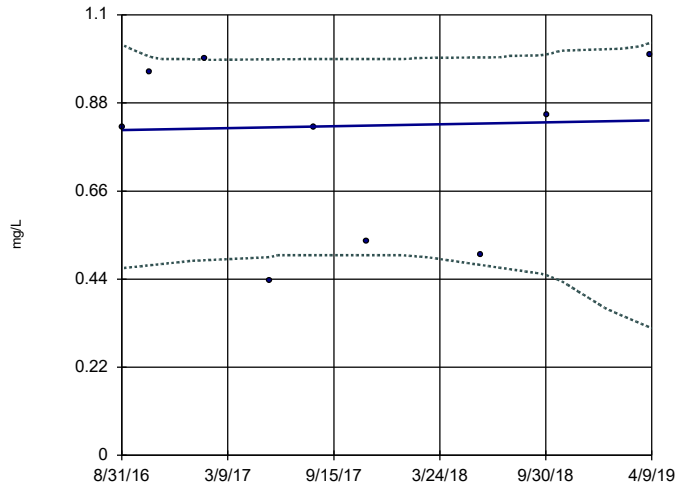
n = 10
 Slope = -0.0007565
 units per year.
 Mann-Kendall
 statistic = -1
 critical = -23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Boron Analysis Run 7/12/2019 5:48 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-117



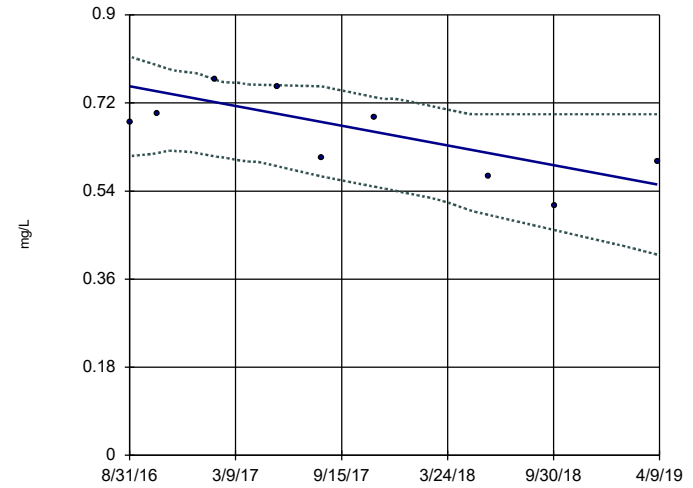
n = 9
 Slope = 0.009223
 units per year.
 Mann-Kendall
 statistic = 3
 critical = 20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Boron Analysis Run 7/12/2019 5:49 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-118



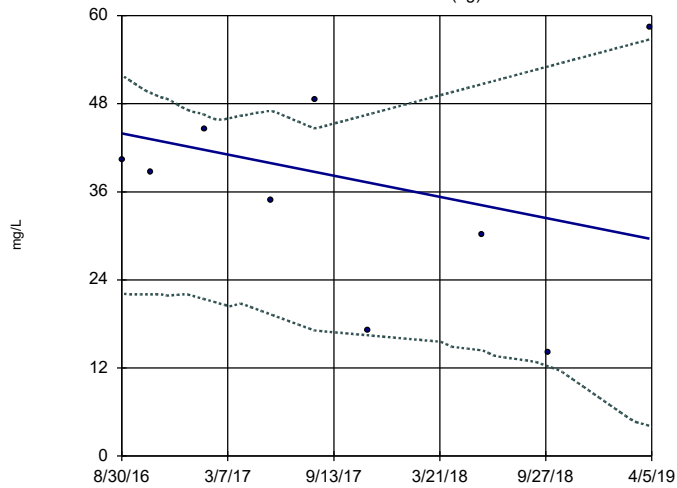
n = 9
 Slope = -0.07734
 units per year.
 Mann-Kendall
 statistic = -18
 critical = -20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Boron Analysis Run 7/12/2019 5:49 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-111 (bg)



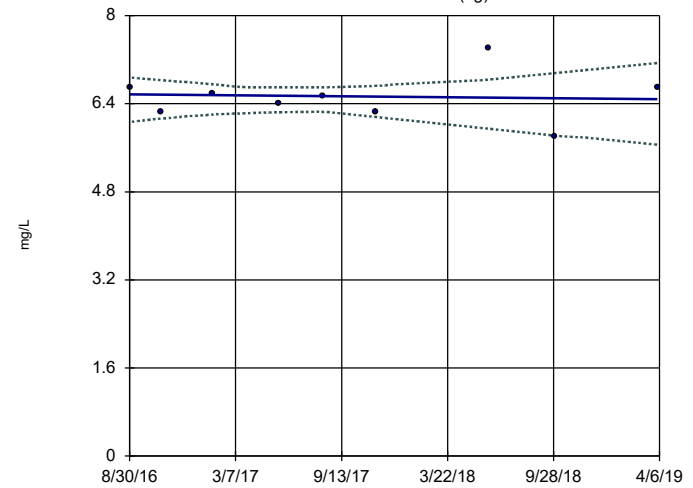
n = 9
 Slope = -5.546
 units per year.
 Mann-Kendall
 statistic = -6
 critical = -20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Calcium Analysis Run 7/12/2019 5:49 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-112 (bg)



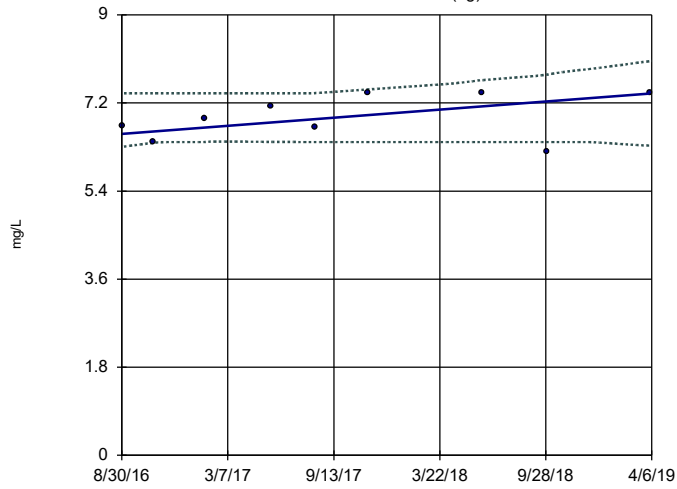
n = 9
 Slope = -0.03512
 units per year.
 Mann-Kendall
 statistic = 0
 critical = 20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Calcium Analysis Run 7/12/2019 5:49 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

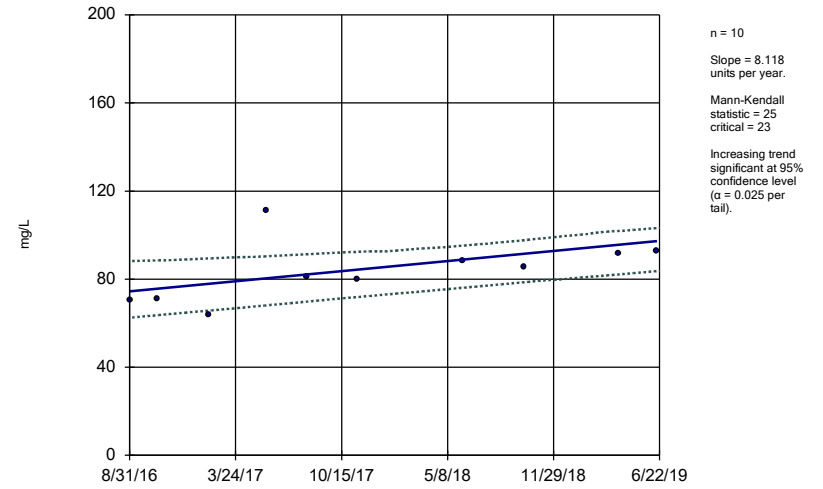
HGWA-113 (bg)



Constituent: Calcium Analysis Run 7/12/2019 5:50 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

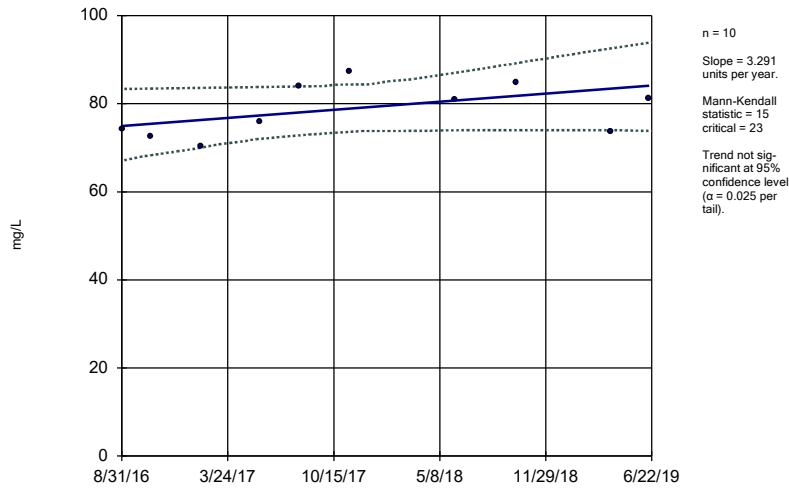
HGWC-103



Constituent: Calcium Analysis Run 7/12/2019 5:50 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

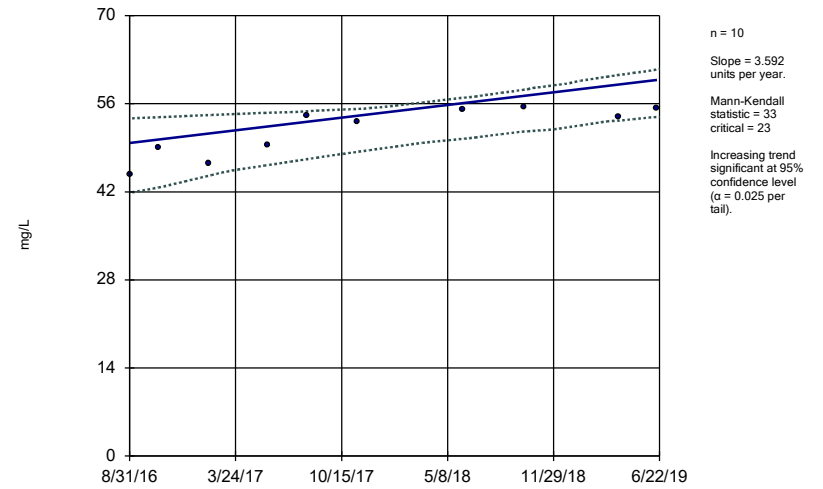
HGWC-105



Constituent: Calcium Analysis Run 7/12/2019 5:50 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

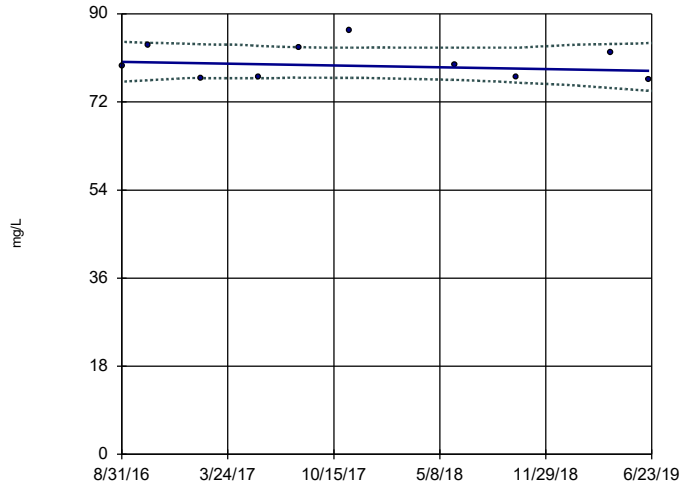
HGWC-107



Constituent: Calcium Analysis Run 7/12/2019 5:50 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-118



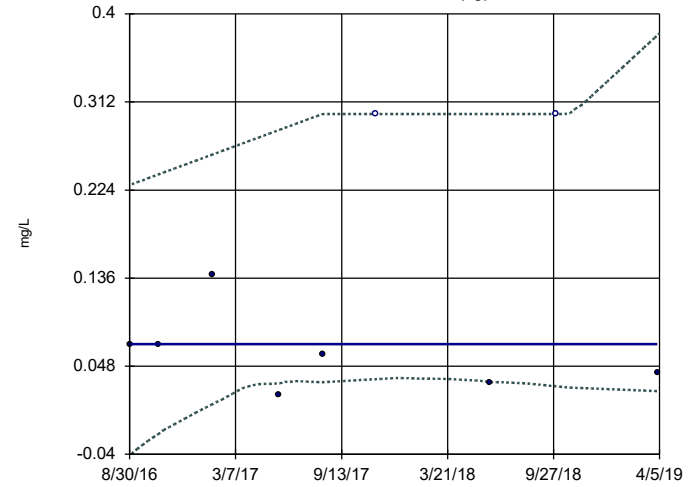
n = 10
 Slope = -0.6658 units per year.
 Mann-Kendall statistic = -7
 critical = -23
 Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Calcium Analysis Run 7/12/2019 5:50 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

HGWA-111 (bg)



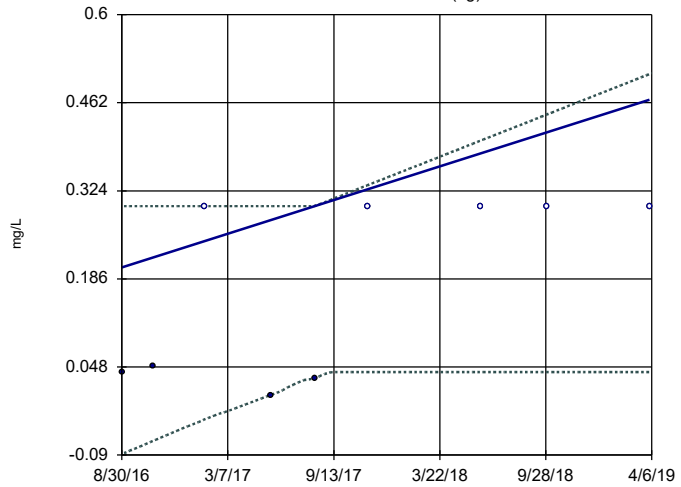
n = 9
 Slope = 0 units per year.
 Mann-Kendall statistic = 0
 critical = 20
 Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/12/2019 5:51 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

HGWA-112 (bg)

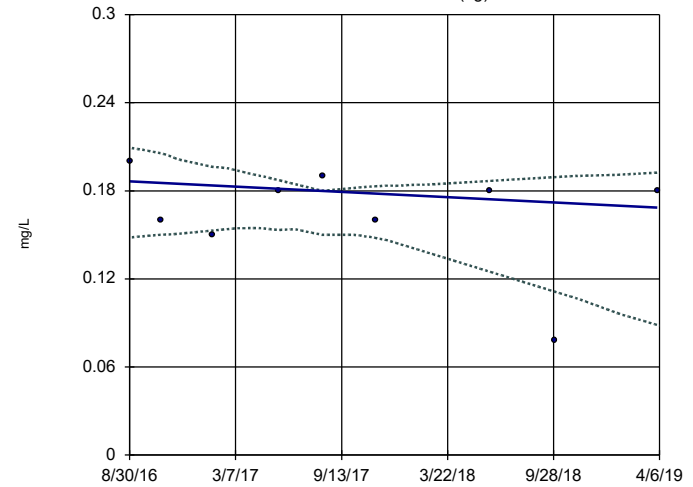


n = 9
 Slope = 0.1015 units per year.
 Mann-Kendall statistic = 14
 critical = 20
 Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/12/2019 5:51 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-113 (bg)

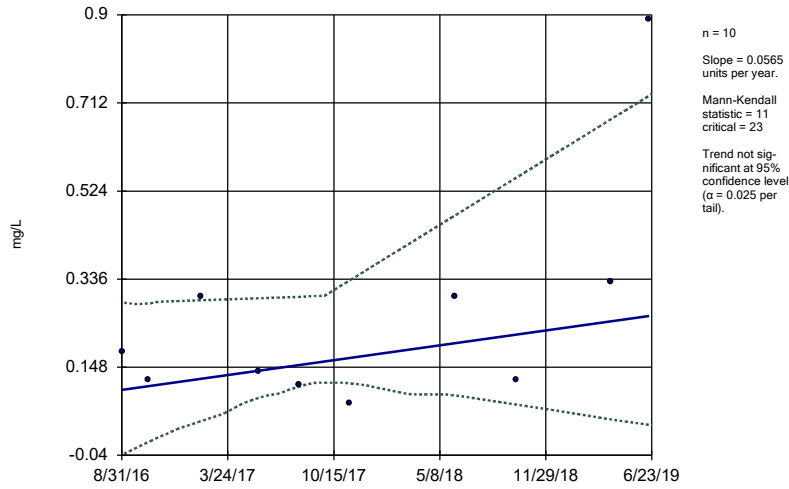


n = 9
 Slope = -0.006904 units per year.
 Mann-Kendall statistic = -6
 critical = -20
 Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/12/2019 5:51 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

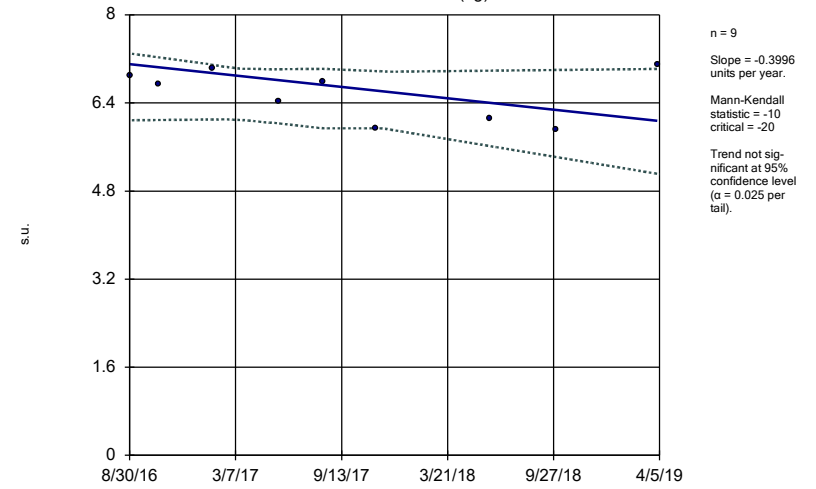
HGWC-118



Constituent: Fluoride Analysis Run 7/12/2019 5:51 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

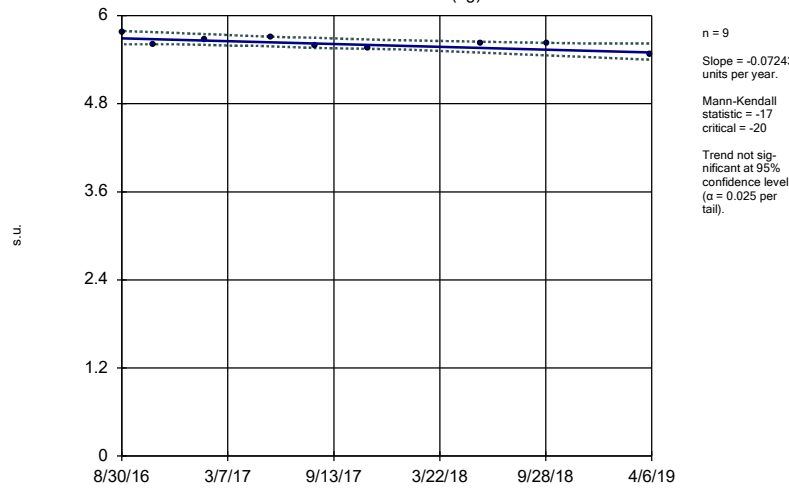
HGWA-111 (bg)



Constituent: pH Analysis Run 7/12/2019 5:53 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

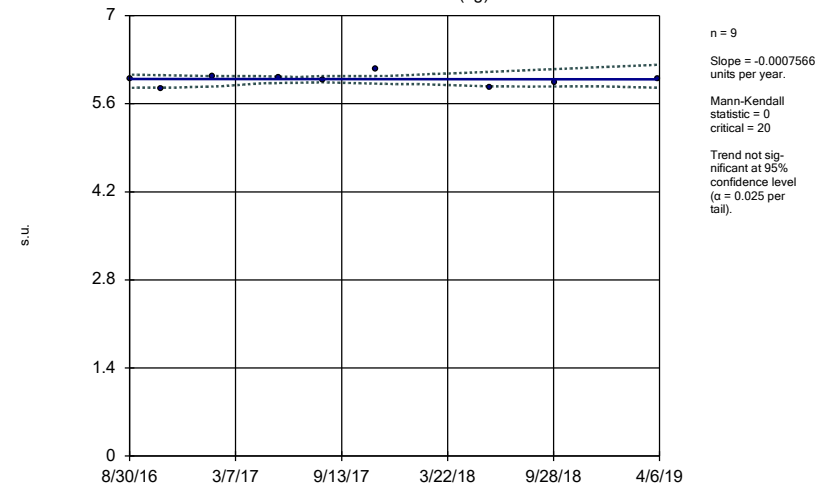
HGWA-112 (bg)



Constituent: pH Analysis Run 7/12/2019 5:53 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

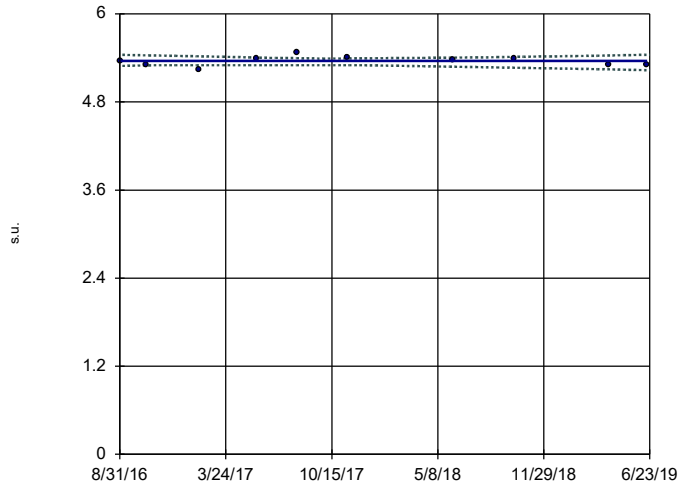
HGWA-113 (bg)



Constituent: pH Analysis Run 7/12/2019 5:53 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

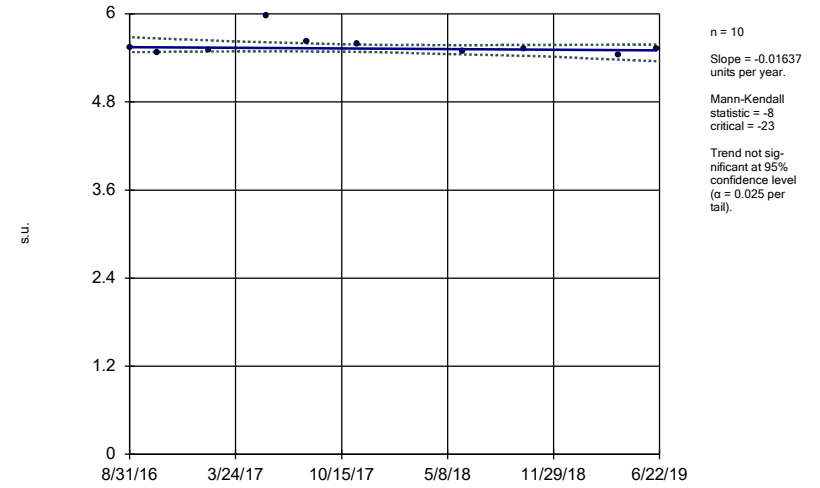
HGWC-101



Constituent: pH Analysis Run 7/12/2019 5:54 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

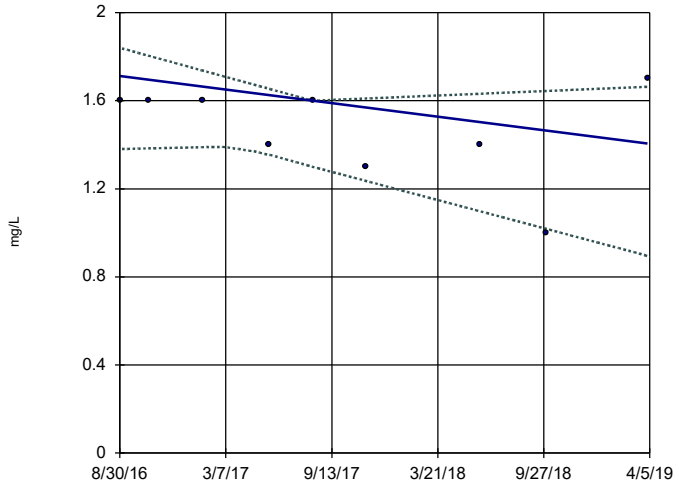
HGWC-103



Constituent: pH Analysis Run 7/12/2019 5:54 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

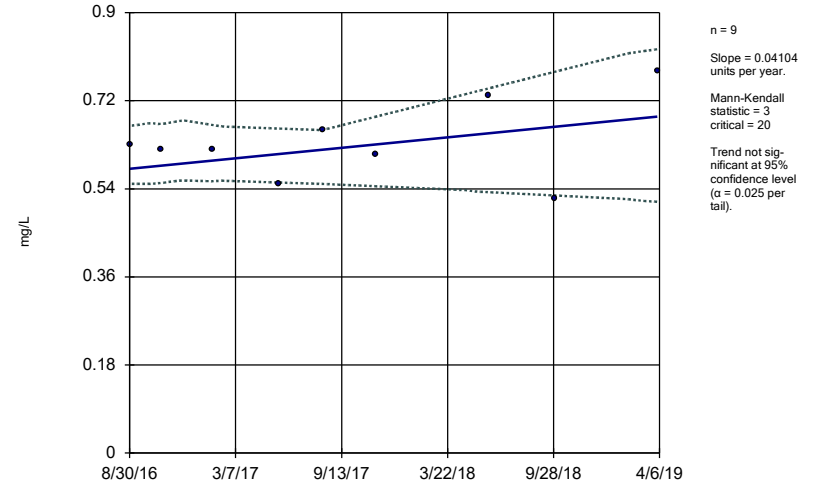
HGWA-111 (bg)



Constituent: Sulfate Analysis Run 7/12/2019 5:54 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

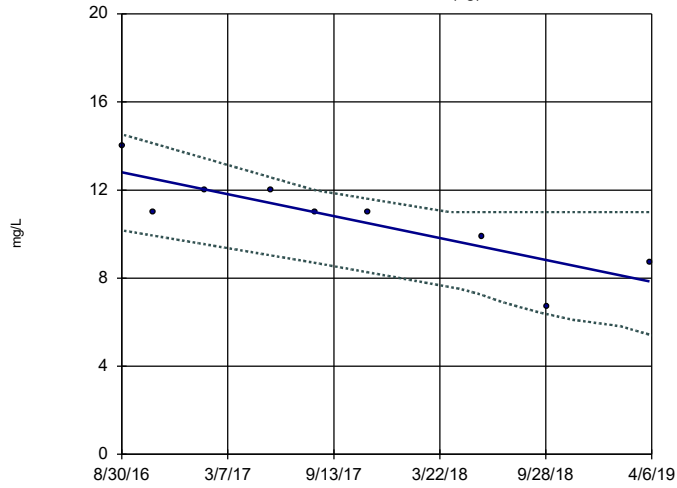
HGWA-112 (bg)



Constituent: Sulfate Analysis Run 7/12/2019 5:54 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-113 (bg)

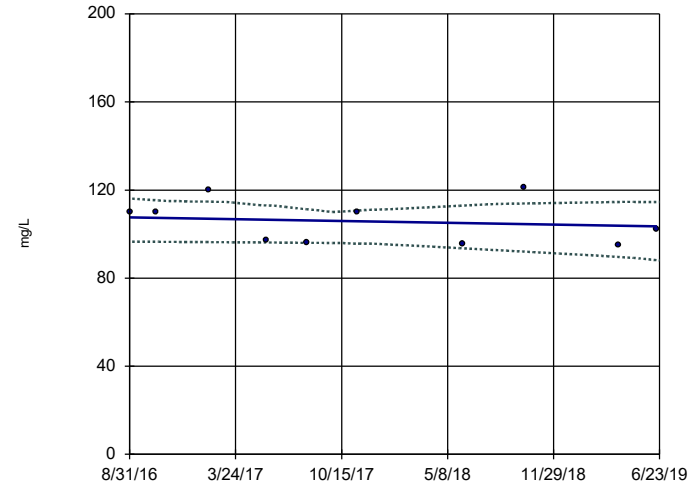


n = 9
 Slope = -1.915 units per year.
 Mann-Kendall statistic = -26
 critical = -20
 Decreasing trend significant at 95% confidence level ($\alpha = 0.025$ per tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:54 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-101

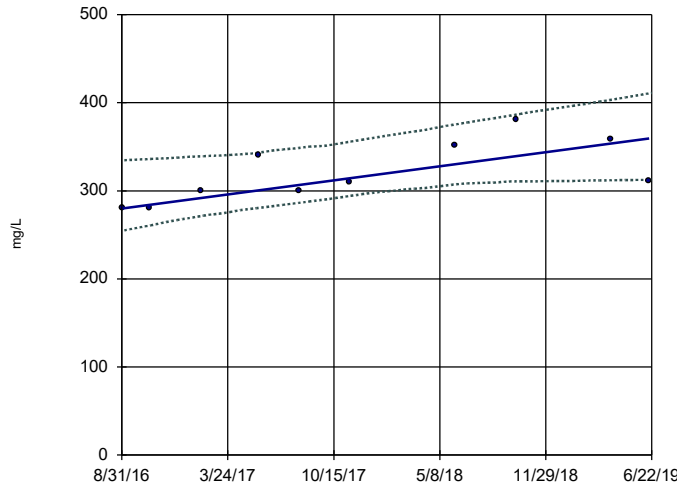


n = 10
 Slope = -1.445 units per year.
 Mann-Kendall statistic = -12
 critical = -23
 Trend not significant at 95% confidence level ($\alpha = 0.025$ per tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:54 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-103

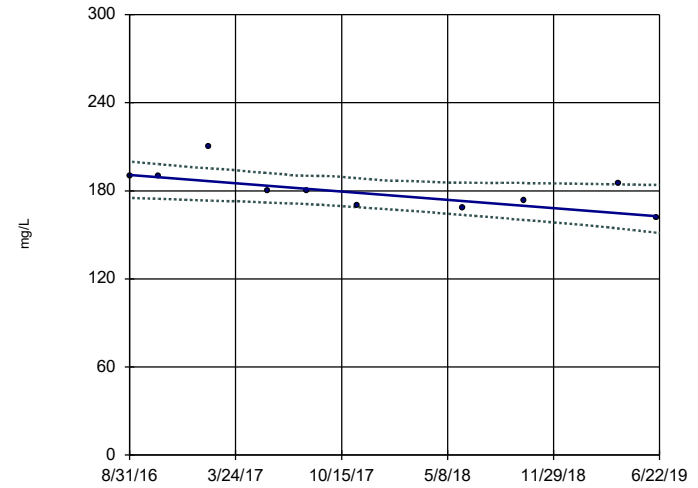


n = 10
 Slope = 28.37 units per year.
 Mann-Kendall statistic = 29
 critical = 23
 Increasing trend significant at 95% confidence level ($\alpha = 0.025$ per tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-105

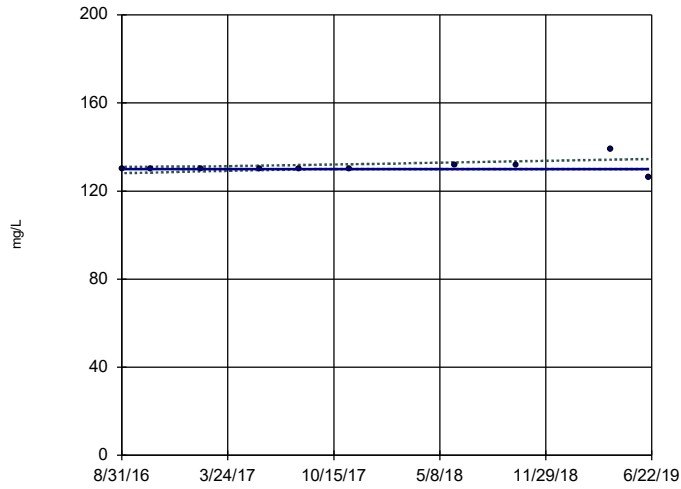


n = 10
 Slope = -10.02 units per year.
 Mann-Kendall statistic = -25
 critical = -23
 Decreasing trend significant at 95% confidence level ($\alpha = 0.025$ per tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-107

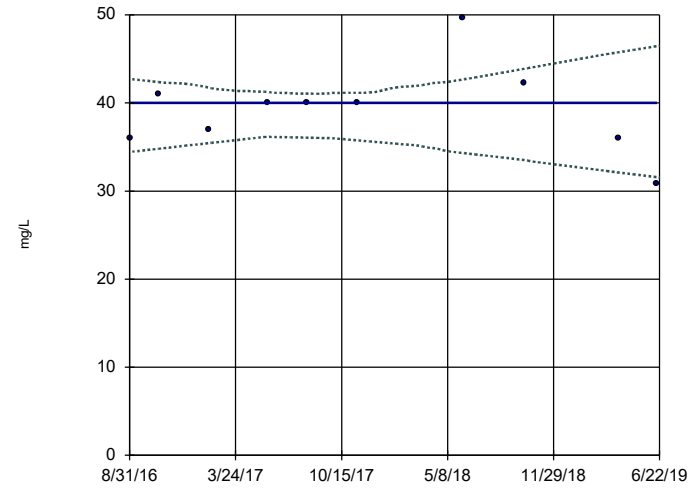


n = 10
 Slope = 0
 units per year.
 Mann-Kendall
 statistic = 11
 critical = 23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-109

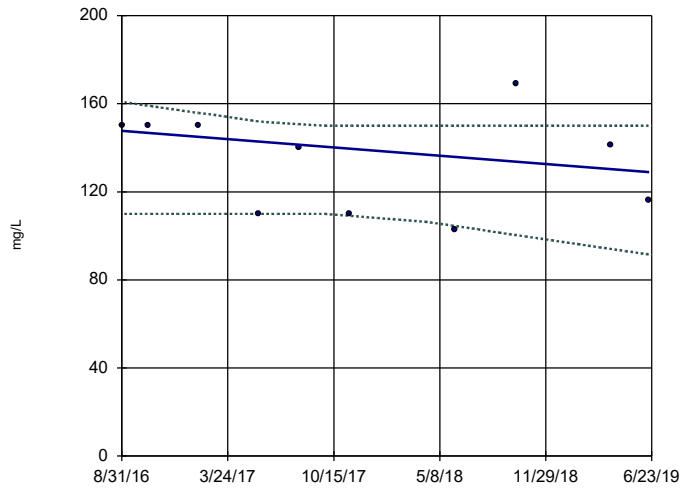


n = 10
 Slope = 0
 units per year.
 Mann-Kendall
 statistic = -1
 critical = -23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-117

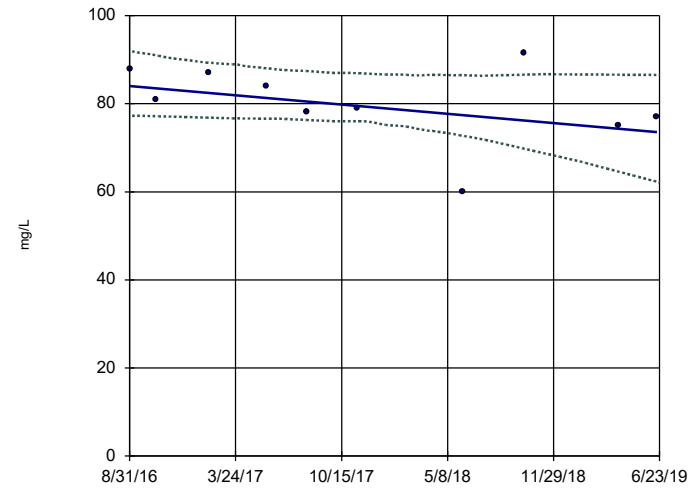


n = 10
 Slope = -6.724
 units per year.
 Mann-Kendall
 statistic = -11
 critical = -23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-118

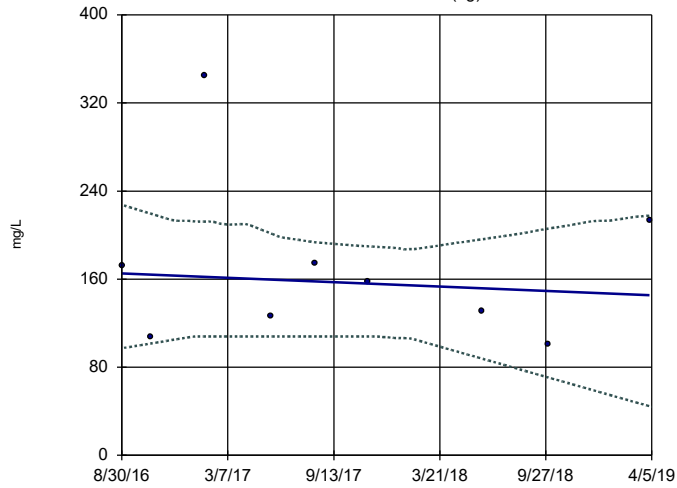


n = 10
 Slope = -3.724
 units per year.
 Mann-Kendall
 statistic = -19
 critical = -23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Sulfate Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-111 (bg)

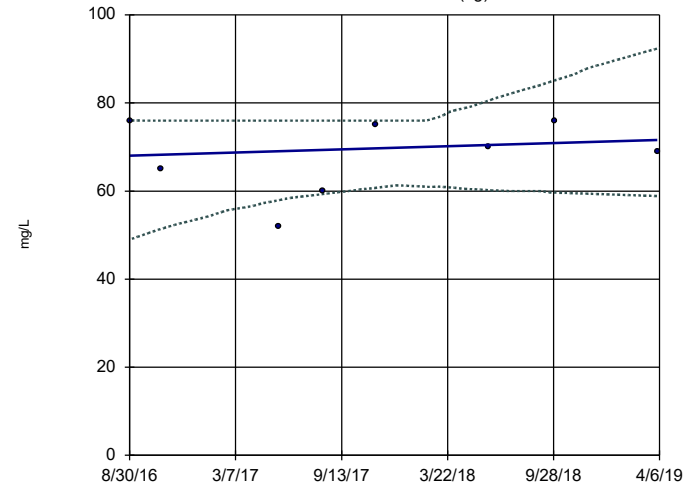


n = 9
 Slope = -7.604
 units per year.
 Mann-Kendall
 statistic = -2
 critical = -20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-112 (bg)

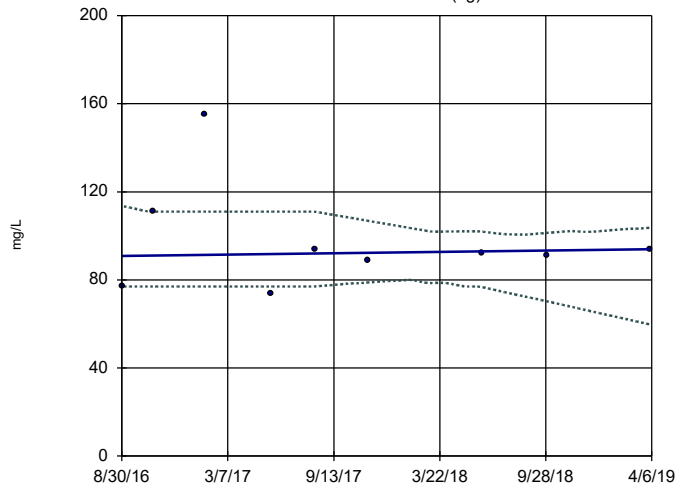


n = 8
 Slope = 1.387
 units per year.
 Mann-Kendall
 statistic = 3
 critical = 17
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWA-113 (bg)

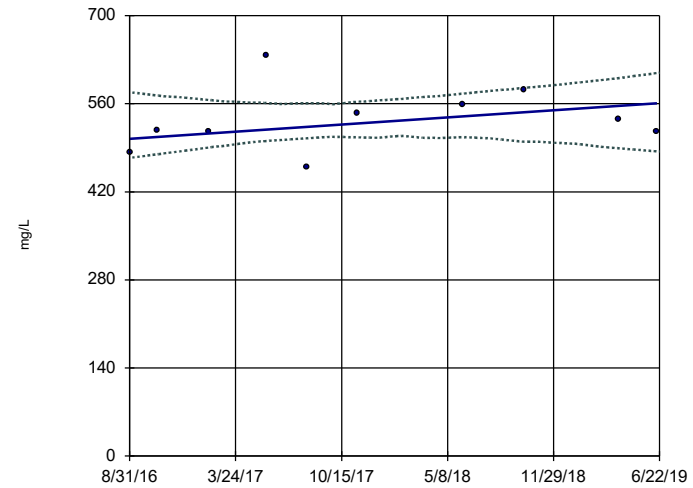


n = 9
 Slope = 1.137
 units per year.
 Mann-Kendall
 statistic = 1
 critical = 20
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:55 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-103

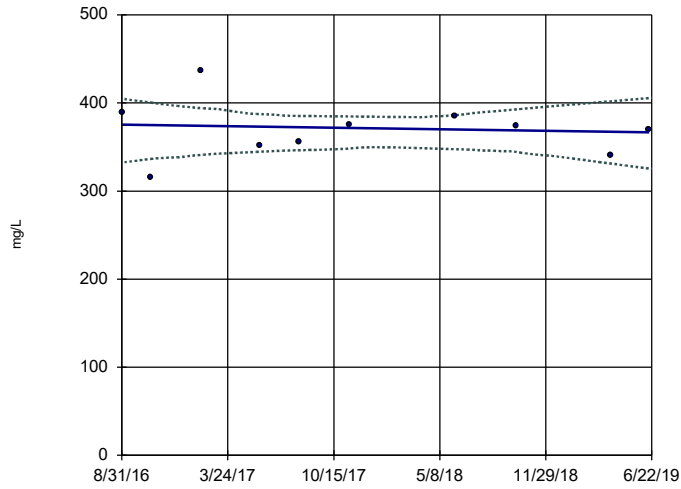


n = 10
 Slope = 20.06
 units per year.
 Mann-Kendall
 statistic = 7
 critical = 23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:56 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-105

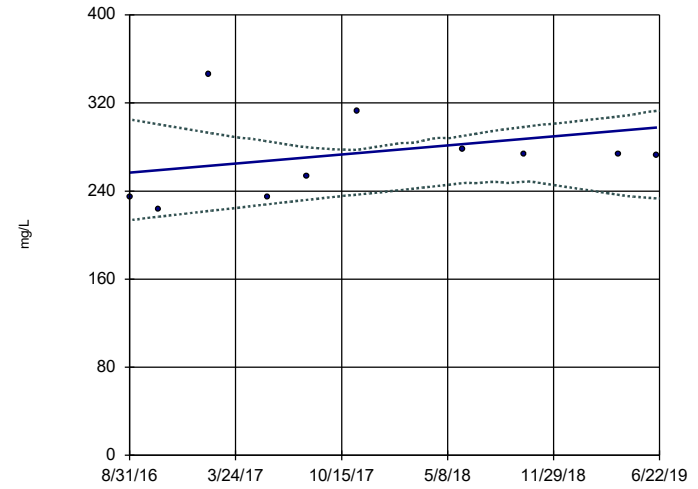


n = 10
 Slope = -3.147
 units per year.
 Mann-Kendall
 statistic = -5
 critical = -23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:56 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-107

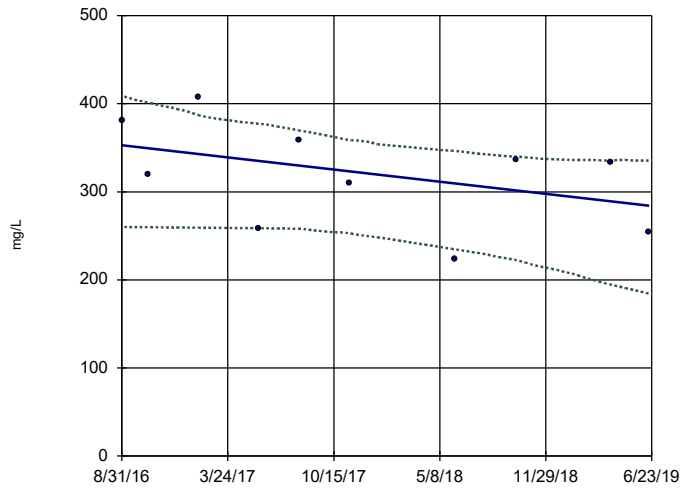


n = 10
 Slope = 14.68
 units per year.
 Mann-Kendall
 statistic = 7
 critical = 23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:56 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Sen's Slope and 95% Confidence Band

HGWC-117



n = 10
 Slope = -24.43
 units per year.
 Mann-Kendall
 statistic = -17
 critical = -23
 Trend not sig-
 nificant at 95%
 confidence level
 ($\alpha = 0.025$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 7/12/2019 5:56 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Outlier Summary - AP-4

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/30/2019, 11:33 AM

HGWA-112 Total Dissolved Solids (mg/L)

1/25/2017

152 (o)

Outlier Analysis - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/30/2019, 11:31 AM

<u>Constituent Name</u>	<u>Well</u>	<u>Outlier Found</u>	<u>Outlier Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha N</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Distribution</u>	<u>Normality Test</u>
Sulfate (mg/L)	HGWC-107	Yes	139	4/3/2019	NP (nrm)	NaN 10	130.9	3.281	unknown	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	Yes	152	1/25/2017	NP	NaN 9	77.22	29.16	ln(x)	ShapiroWilk

Outlier Analysis - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/30/2019, 11:31 AM

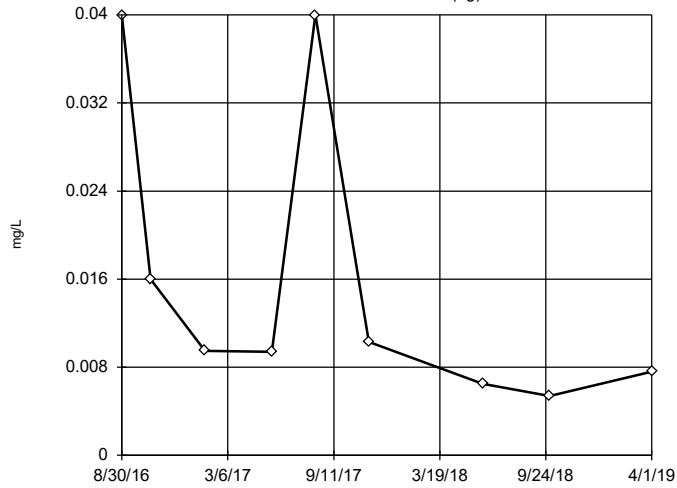
Constituent Name	Well	Outlier Found	Outlier Value(s)	Date(s)	Method	Alpha N	Mean	Standard Deviation	Distribution	Normality Test
Boron (mg/L)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	0.01608	0.01389	ln(x)	ShapiroWilk
Boron (mg/L)	HGWA-112 (bg)	No	n/a	n/a	NP (nrm)	NaN 9	0.0213	0.01703	unknown	ShapiroWilk
Boron (mg/L)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	0.01961	0.03063	ln(x)	ShapiroWilk
Boron (mg/L)	HGWC-101	No	n/a	n/a	NP	NaN 9	0.08387	0.01359	normal	ShapiroWilk
Boron (mg/L)	HGWC-103	No	n/a	n/a	NP	NaN 10	2.293	0.2075	x^6	ShapiroWilk
Boron (mg/L)	HGWC-105	No	n/a	n/a	NP	NaN 9	1.294	0.1005	ln(x)	ShapiroWilk
Boron (mg/L)	HGWC-107	No	n/a	n/a	NP	NaN 10	0.7886	0.07522	x^3	ShapiroWilk
Boron (mg/L)	HGWC-109	No	n/a	n/a	NP	NaN 10	0.4036	0.03377	ln(x)	ShapiroWilk
Boron (mg/L)	HGWC-117	No	n/a	n/a	NP	NaN 9	0.768	0.2195	x^4	ShapiroWilk
Boron (mg/L)	HGWC-118	No	n/a	n/a	NP	NaN 9	0.6532	0.08643	x^2	ShapiroWilk
Calcium (mg/L)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	36.31	14.27	normal	ShapiroWilk
Calcium (mg/L)	HGWA-112 (bg)	No	n/a	n/a	NP	NaN 9	6.513	0.4348	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	6.914	0.4487	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-101	No	n/a	n/a	NP	NaN 9	19.08	1.582	sqrt(x)	ShapiroWilk
Calcium (mg/L)	HGWC-103	No	n/a	n/a	NP	NaN 10	83.49	13.67	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-105	No	n/a	n/a	NP	NaN 10	78.48	5.855	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-107	No	n/a	n/a	NP	NaN 10	51.69	3.922	x^6	ShapiroWilk
Calcium (mg/L)	HGWC-109	No	n/a	n/a	NP	NaN 9	37.96	3.416	ln(x)	ShapiroWilk
Calcium (mg/L)	HGWC-117	No	n/a	n/a	NP	NaN 10	56.62	16.75	x^3	ShapiroWilk
Calcium (mg/L)	HGWC-118	No	n/a	n/a	NP	NaN 10	80.21	3.513	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	2.922	0.531	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWA-112 (bg)	No	n/a	n/a	NP	NaN 9	5.333	0.2345	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	1.8	0.1581	normal	ShapiroWilk
Chloride (mg/L)	HGWC-101	No	n/a	n/a	NP	NaN 9	5.633	0.2345	x^6	ShapiroWilk
Chloride (mg/L)	HGWC-103	No	n/a	n/a	NP	NaN 10	5.83	0.5755	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWC-105	No	n/a	n/a	NP	NaN 9	3.311	0.4457	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWC-107	No	n/a	n/a	NP	NaN 10	3.11	0.2644	ln(x)	ShapiroWilk
Chloride (mg/L)	HGWC-109	No	n/a	n/a	NP	NaN 9	5.156	0.3283	x^4	ShapiroWilk
Chloride (mg/L)	HGWC-117	No	n/a	n/a	NP	NaN 9	6.244	2.04	x^3	ShapiroWilk
Chloride (mg/L)	HGWC-118	No	n/a	n/a	NP	NaN 9	4.378	0.1986	ln(x)	ShapiroWilk
Fluoride (mg/L)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	0.1149	0.1103	ln(x)	ShapiroWilk
Fluoride (mg/L)	HGWA-112 (bg)	No	n/a	n/a	NP (nrm)	NaN 9	0.1804	0.1423	unknown	ShapiroWilk
Fluoride (mg/L)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	0.1642	0.03599	x^5	ShapiroWilk
Fluoride (mg/L)	HGWC-101	No	n/a	n/a	NP (nrm)	NaN 9	0.2422	0.1148	unknown	ShapiroWilk
Fluoride (mg/L)	HGWC-103	No	n/a	n/a	NP (nrm)	NaN 9	0.2091	0.1125	unknown	ShapiroWilk
Fluoride (mg/L)	HGWC-105	No	n/a	n/a	NP	NaN 9	0.1304	0.104	ln(x)	ShapiroWilk
Fluoride (mg/L)	HGWC-107	No	n/a	n/a	NP (nrm)	NaN 9	0.1851	0.1186	unknown	ShapiroWilk
Fluoride (mg/L)	HGWC-109	No	n/a	n/a	NP	NaN 9	0.1544	0.0918	x^(1/3)	ShapiroWilk
Fluoride (mg/L)	HGWC-117	No	n/a	n/a	NP (nrm)	NaN 9	0.1867	0.1125	unknown	ShapiroWilk
Fluoride (mg/L)	HGWC-118	No	n/a	n/a	NP	NaN 10	0.256	0.2412	ln(x)	ShapiroWilk
pH (s.u.)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	6.549	0.4588	x^6	ShapiroWilk
pH (s.u.)	HGWA-112 (bg)	No	n/a	n/a	NP	NaN 9	5.624	0.08618	x^3	ShapiroWilk
pH (s.u.)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	5.98	0.09552	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-101	No	n/a	n/a	NP	NaN 10	5.352	0.06596	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-103	No	n/a	n/a	NP	NaN 10	5.572	0.1532	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-105	No	n/a	n/a	NP	NaN 9	6.378	0.1355	x^6	ShapiroWilk
pH (s.u.)	HGWC-107	No	n/a	n/a	NP	NaN 9	6.049	0.0699	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-109	No	n/a	n/a	NP	NaN 9	6.548	0.1117	ln(x)	ShapiroWilk
pH (s.u.)	HGWC-117	No	n/a	n/a	NP (nrm)	NaN 9	5.841	0.4022	unknown	ShapiroWilk
pH (s.u.)	HGWC-118	No	n/a	n/a	NP	NaN 9	6.987	0.05745	x^3	ShapiroWilk

Outlier Analysis - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4 Printed 7/30/2019, 11:31 AM

<u>Constituent Name</u>	<u>Well</u>	<u>Outlier Found</u>	<u>Outlier Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha N</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Distribution</u>	<u>Normality Test</u>
Sulfate (mg/L)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	1.467	0.2179	x^5	ShapiroWilk
Sulfate (mg/L)	HGWA-112 (bg)	No	n/a	n/a	NP	NaN 9	0.6356	0.08079	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	10.7	2.097	x^2	ShapiroWilk
Sulfate (mg/L)	HGWC-101	No	n/a	n/a	NP	NaN 10	105.7	9.966	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWC-103	No	n/a	n/a	NP	NaN 10	321.1	34.47	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWC-105	No	n/a	n/a	NP	NaN 10	180.8	13.89	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWC-107	Yes	139	4/3/2019	NP (nrm)	NaN 10	130.9	3.281	unknown	ShapiroWilk
Sulfate (mg/L)	HGWC-109	No	n/a	n/a	NP	NaN 10	39.29	4.935	ln(x)	ShapiroWilk
Sulfate (mg/L)	HGWC-117	No	n/a	n/a	NP	NaN 10	133.9	22.4	x^2	ShapiroWilk
Sulfate (mg/L)	HGWC-118	No	n/a	n/a	NP	NaN 10	80.07	8.795	x^5	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWA-111 (bg)	No	n/a	n/a	NP	NaN 9	169.8	74.75	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWA-112 (bg)	Yes	152	1/25/2017	NP	NaN 9	77.22	29.16	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWA-113 (bg)	No	n/a	n/a	NP	NaN 9	97.44	24.06	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-101	No	n/a	n/a	NP	NaN 9	211	47.32	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-103	No	n/a	n/a	NP	NaN 10	534.8	50.39	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-105	No	n/a	n/a	NP	NaN 10	369.4	32.4	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-107	No	n/a	n/a	NP	NaN 10	270.2	37.57	ln(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-109	No	n/a	n/a	NP	NaN 9	212.7	29.51	x^(1/3)	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-117	No	n/a	n/a	NP	NaN 10	318.2	58.66	x^2	ShapiroWilk
Total Dissolved Solids (mg/L)	HGWC-118	No	n/a	n/a	NP	NaN 10	328.5	47.03	x^5	ShapiroWilk

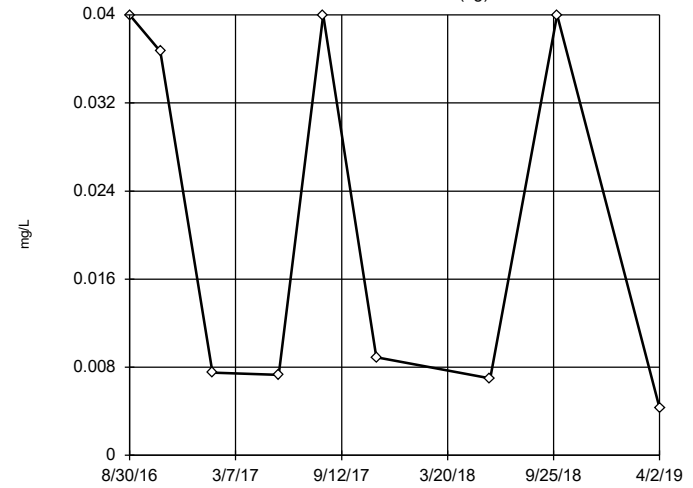
Tukey's Outlier Screening
HGWA-111 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.18, low cutoff = 0.0001507, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

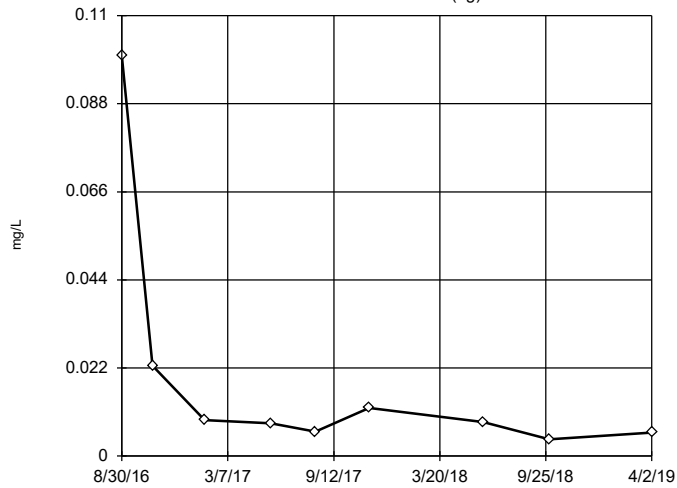
Tukey's Outlier Screening
HGWA-112 (bg)



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 7.008, low cutoff = 0.0000408, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

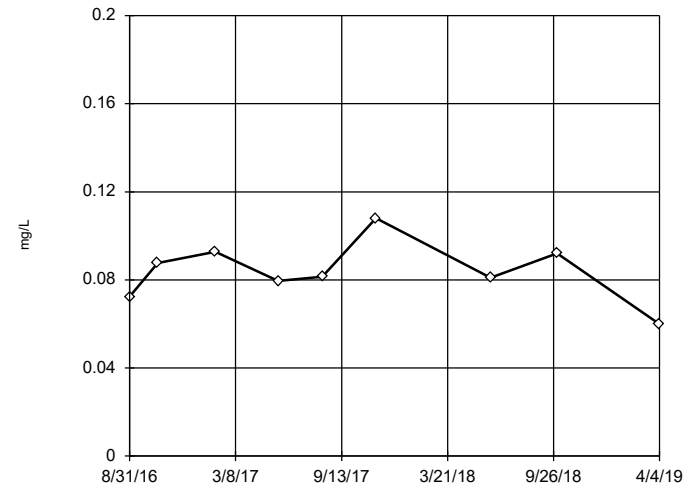
Tukey's Outlier Screening
HGWA-113 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.3406, low cutoff = 0.00029, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

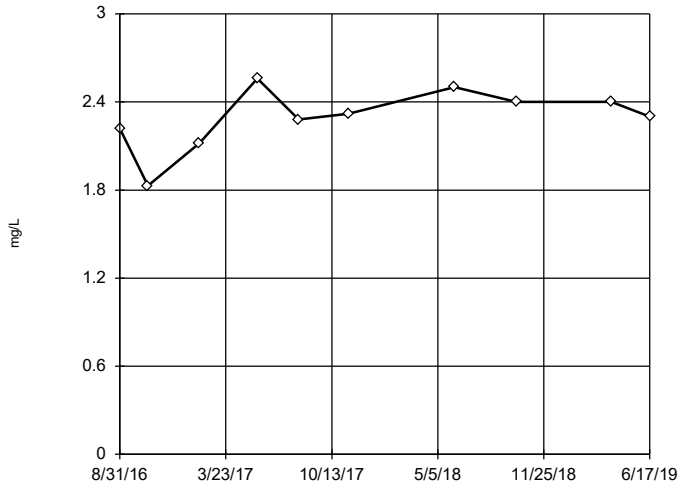
Tukey's Outlier Screening
HGWC-101



n = 9
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 0.1418, low cutoff = 0.0266, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

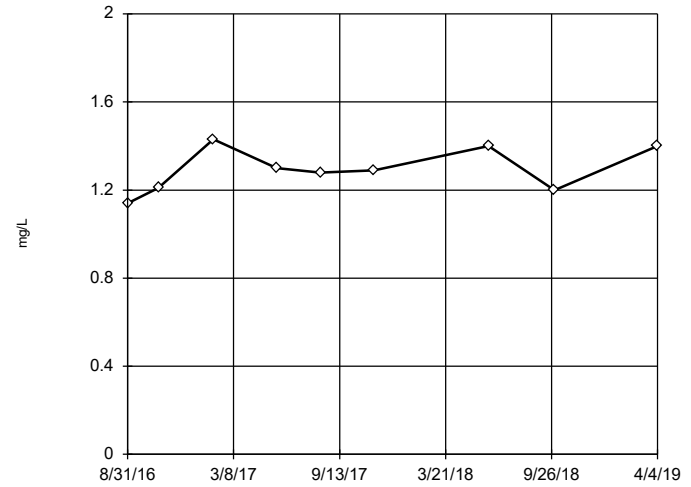
Tukey's Outlier Screening HGWC-103



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 2.866, low cutoff = -2.479, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

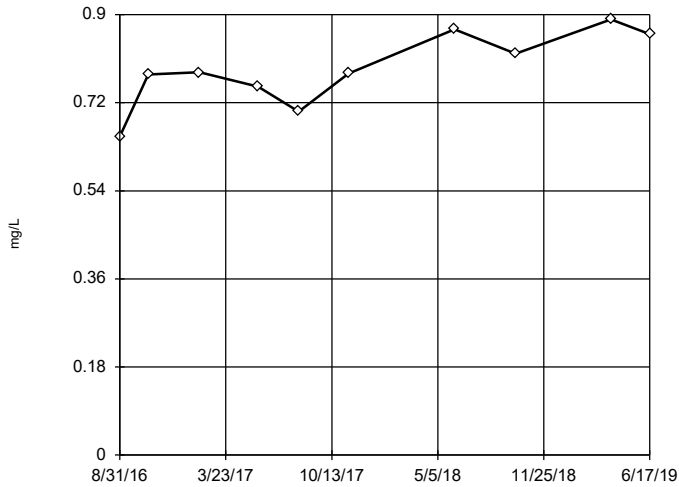
Tukey's Outlier Screening HGWC-105



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 2.196, low cutoff = 0.7683, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

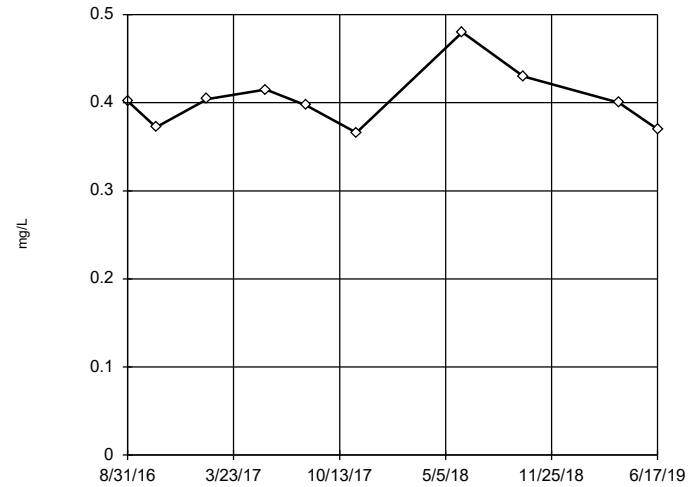
Tukey's Outlier Screening HGWC-107



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.127, low cutoff = -0.7344, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

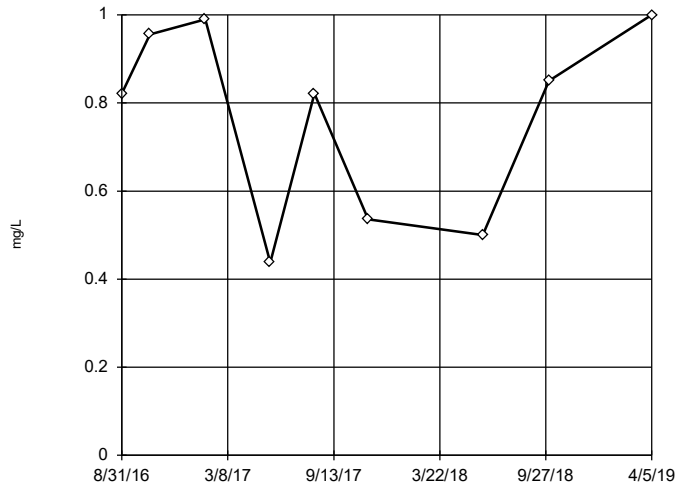
Tukey's Outlier Screening HGWC-109



n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.6236, low cutoff = 0.2513, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

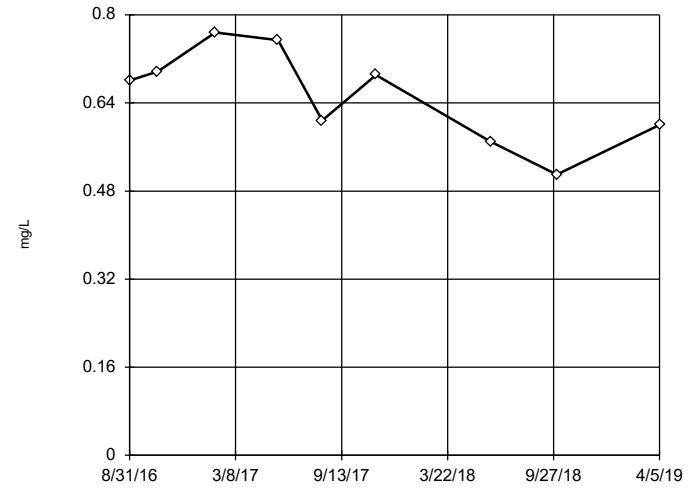
Tukey's Outlier Screening
HGWC-117



n = 9
No outliers found. Tukey's method selected by user.
Data were x⁴ transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.355, low cutoff = -1.245, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

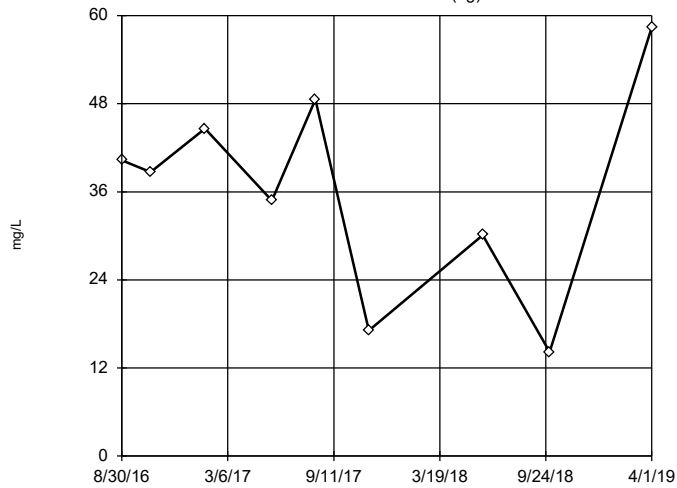
Tukey's Outlier Screening
HGWC-118



n = 9
No outliers found. Tukey's method selected by user.
Data were square transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.04, low cutoff = -0.4601, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

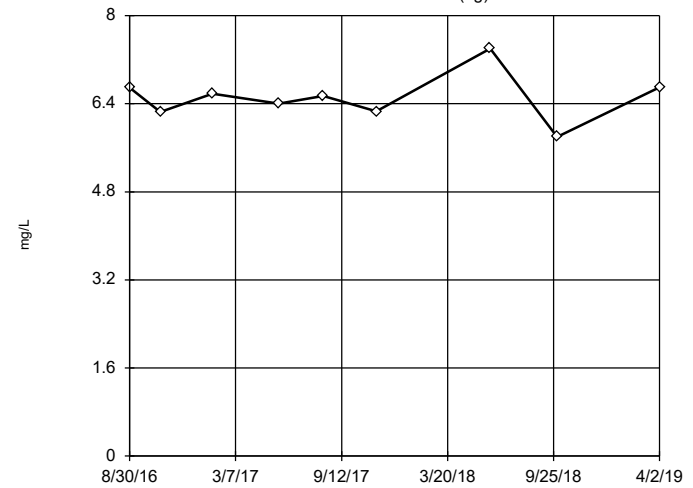
Tukey's Outlier Screening
HGWA-111 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 115.6, low cutoff = -45.4, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening
HGWA-112 (bg)

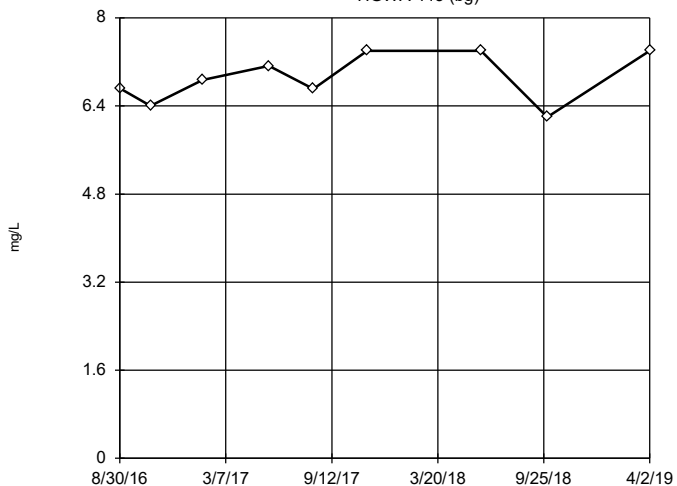


n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 8.21, low cutoff = 5.101, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWA-113 (bg)



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

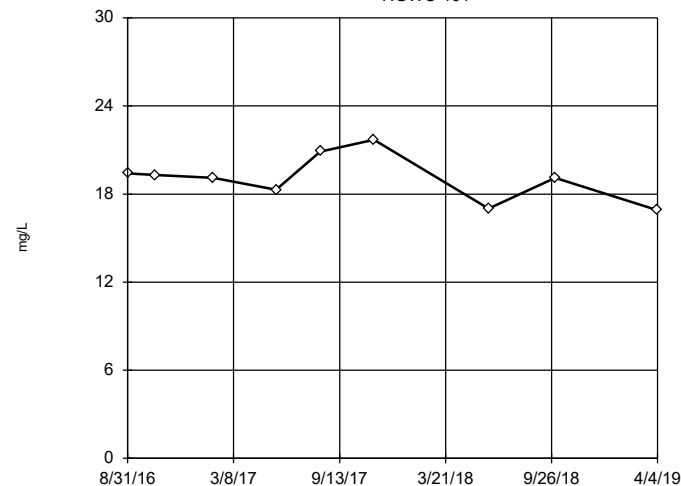
High cutoff = 10.66, low cutoff = 4.551, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-101



n = 9

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

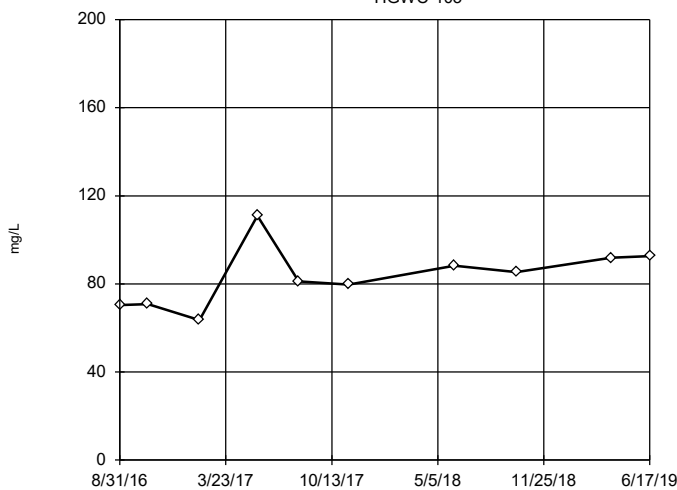
High cutoff = 28.63, low cutoff = 11.14, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-103



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

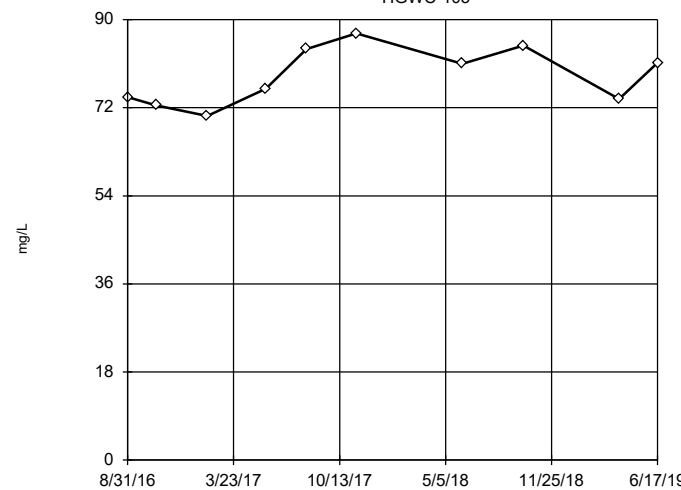
High cutoff = 205.4, low cutoff = 31.74, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-105



n = 10

No outliers found. Tukey's method selected by user.

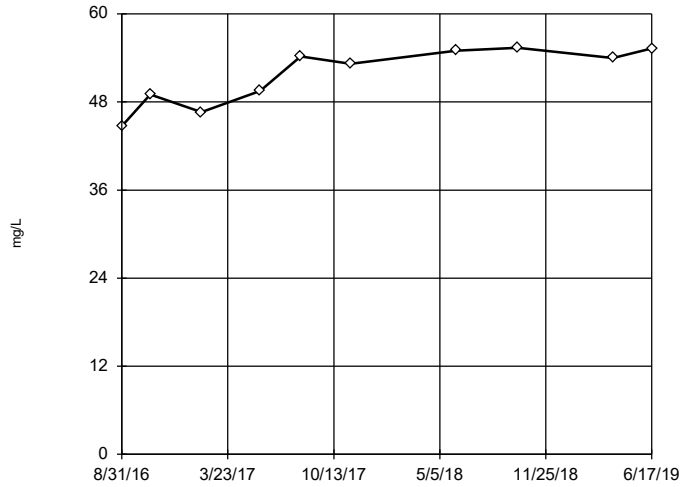
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 129.3, low cutoff = 47.7, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

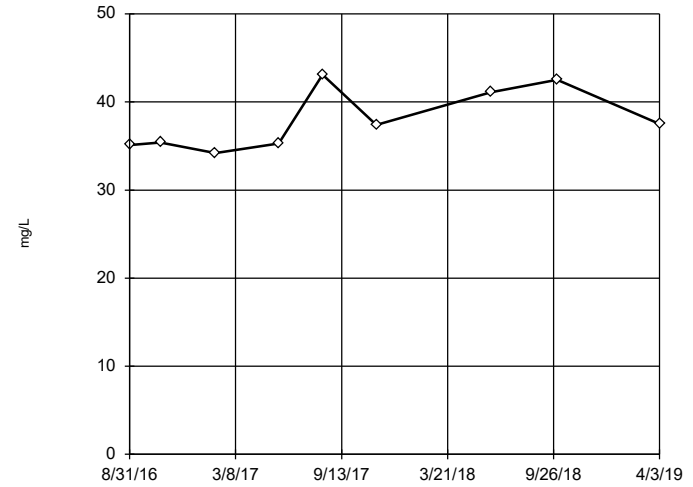
Tukey's Outlier Screening
HGWC-107



n = 10
No outliers found. Tukey's method selected by user.
Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
High cutoff = 65.15, low cutoff = -57.53, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

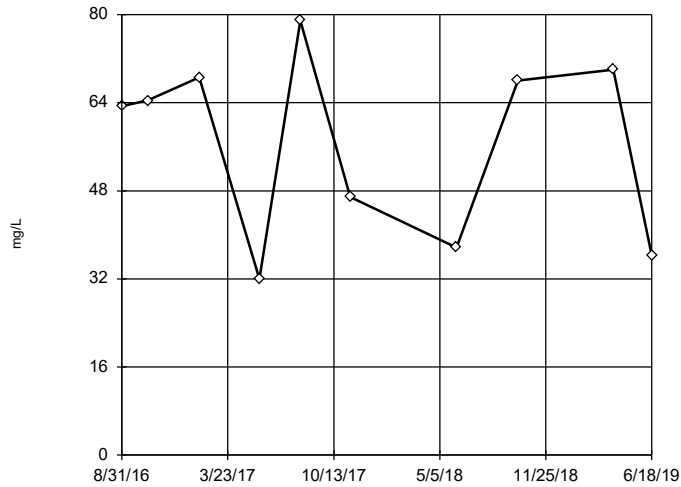
Tukey's Outlier Screening
HGWC-109



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 69.96, low cutoff = 21.03, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

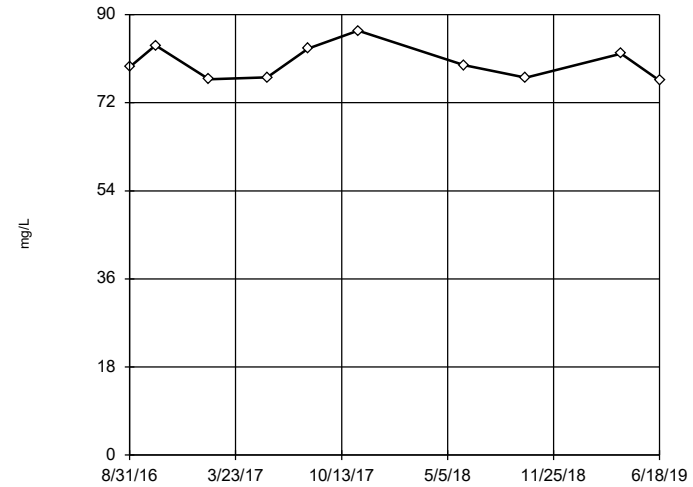
Tukey's Outlier Screening
HGWC-117



n = 10
No outliers found. Tukey's method selected by user.
Data were cube transformed to achieve best W statistic (graph shown in original units).
High cutoff = 105.7, low cutoff = -92.67, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

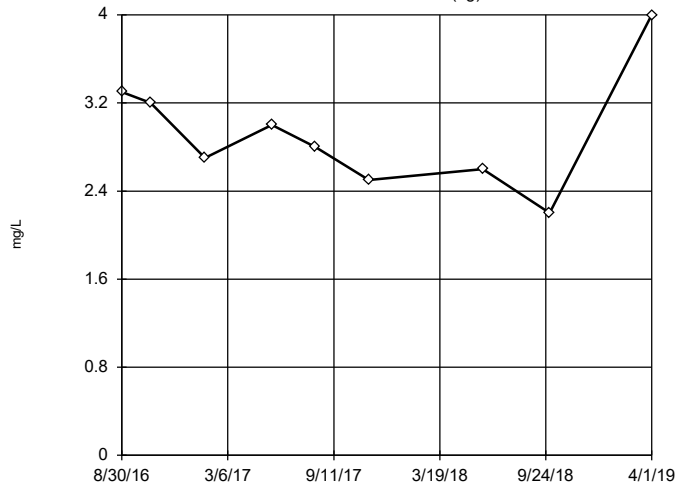
Tukey's Outlier Screening
HGWC-118



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 106.2, low cutoff = 60.44, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

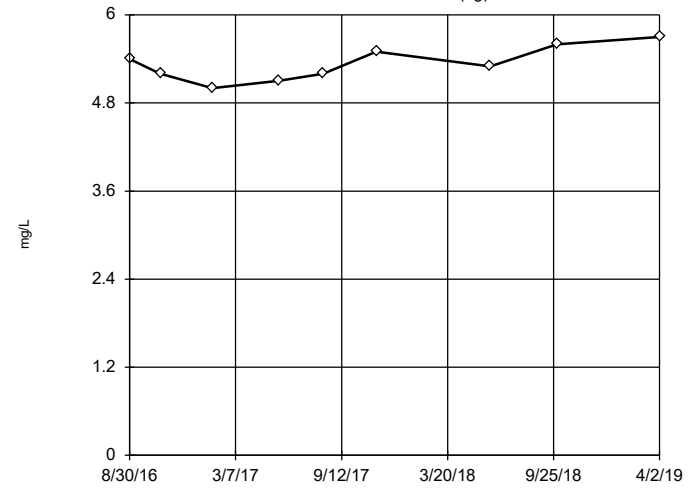
Tukey's Outlier Screening
HGWA-111 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 6.729, low cutoff = 1.231, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:28 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

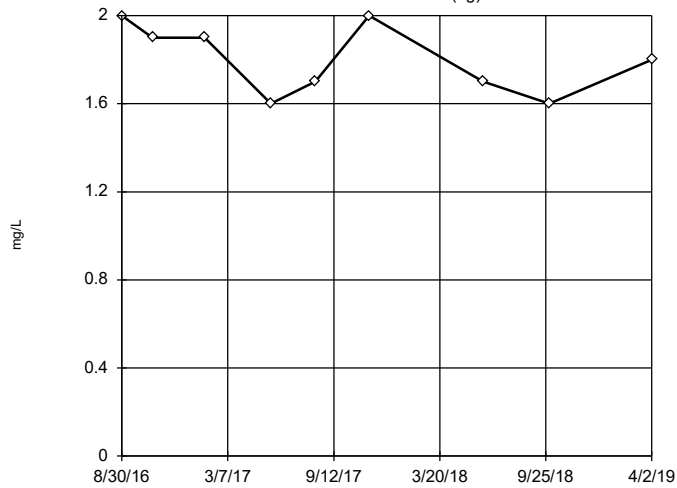
Tukey's Outlier Screening
HGWA-112 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 6.946, low cutoff = 4.115, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

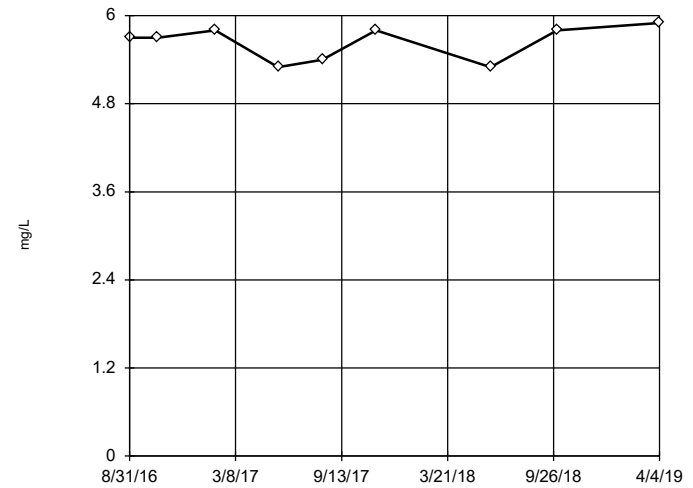
Tukey's Outlier Screening
HGWA-113 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 2.85, low cutoff = 0.75, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening
HGWC-101

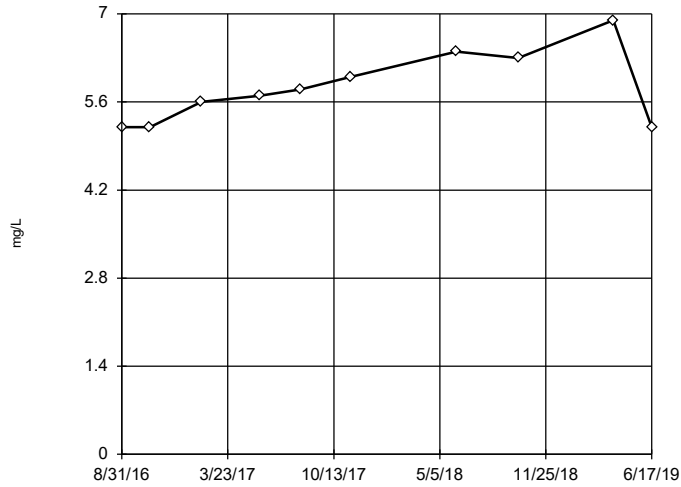


n = 9
No outliers found. Tukey's method selected by user.
Data were x^6 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 6.589, low cutoff = -5.222, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-103



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

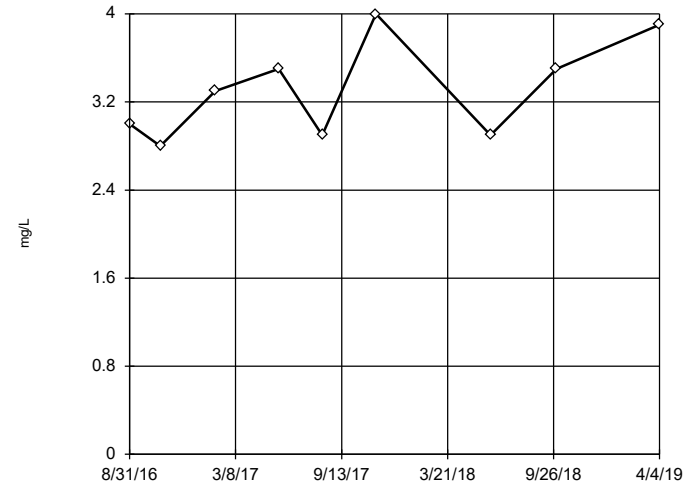
High cutoff = 11.56, low cutoff = 2.856, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-105



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

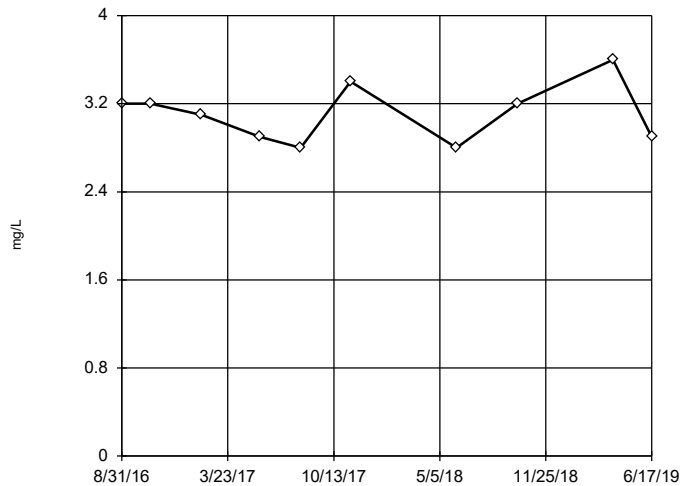
High cutoff = 7.64, low cutoff = 1.402, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-107



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

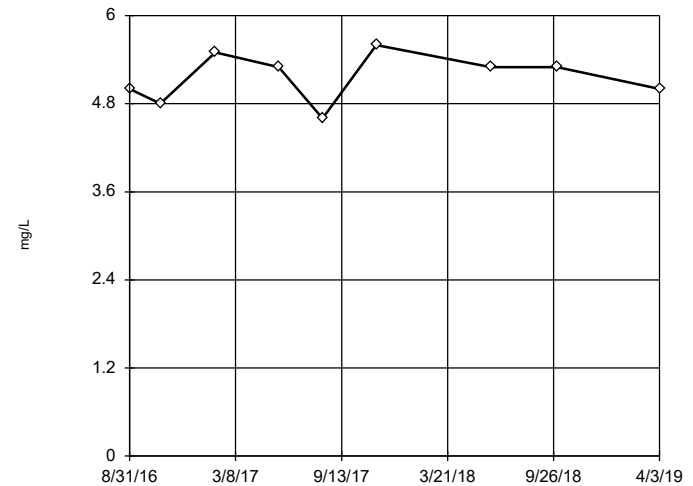
High cutoff = 5.116, low cutoff = 1.837, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-109



n = 9

No outliers found. Tukey's method selected by user.

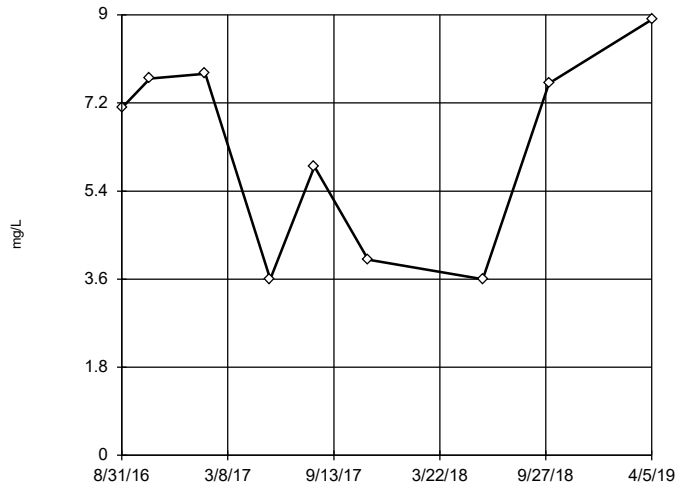
Data were x⁴ transformed to achieve best W statistic (graph shown in original units).

High cutoff = 6.397, low cutoff = -3.954, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

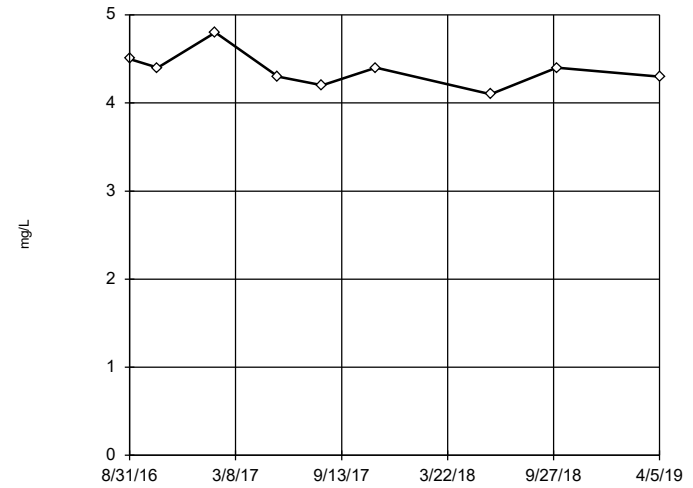
Tukey's Outlier Screening
HGWC-117



n = 9
No outliers found. Tukey's method selected by user.
Data were cube transformed to achieve best W statistic (graph shown in original units).
High cutoff = 11.93, low cutoff = -10.55, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

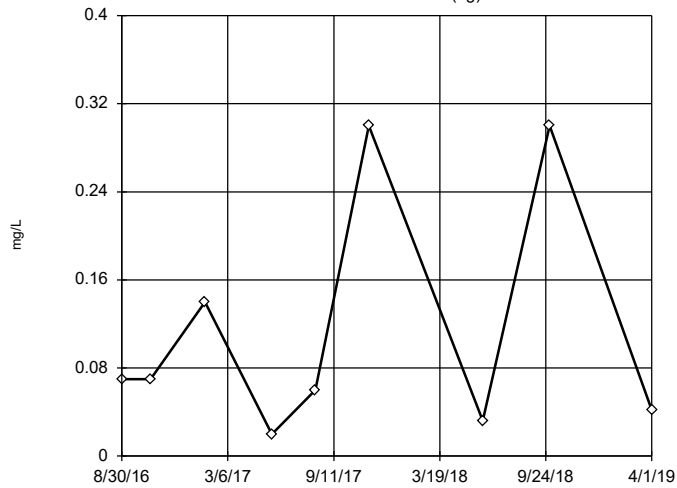
Tukey's Outlier Screening
HGWC-118



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 5.108, low cutoff = 3.702, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

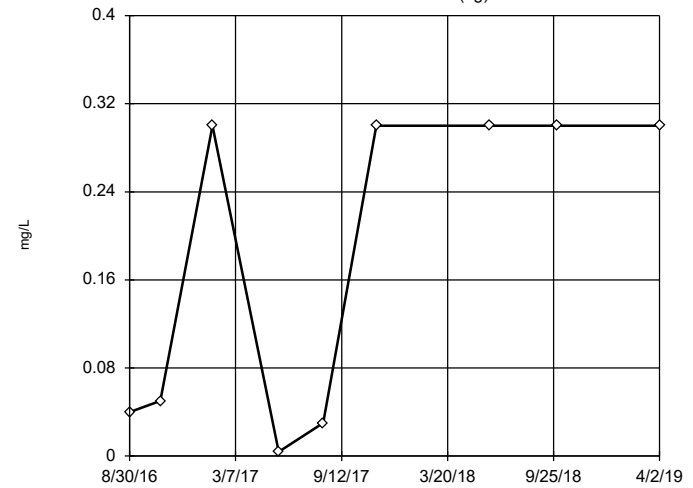
Tukey's Outlier Screening
HGWA-111 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 35.8, low cutoff = 0.0002099, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

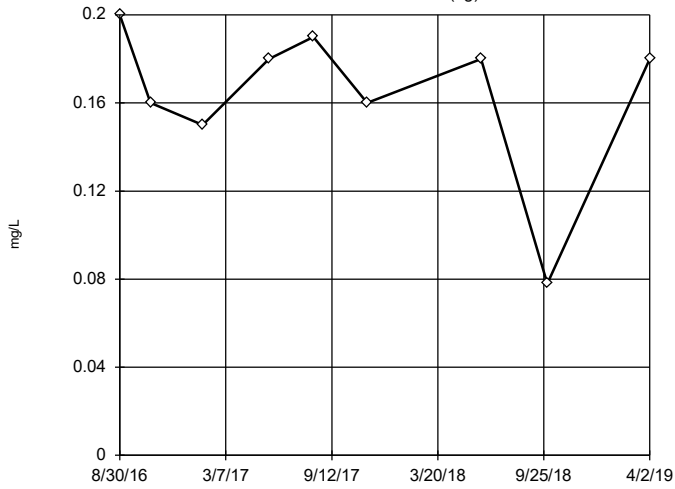
Tukey's Outlier Screening
HGWA-112 (bg)



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 194.9, low cutoff = 0.00005333, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

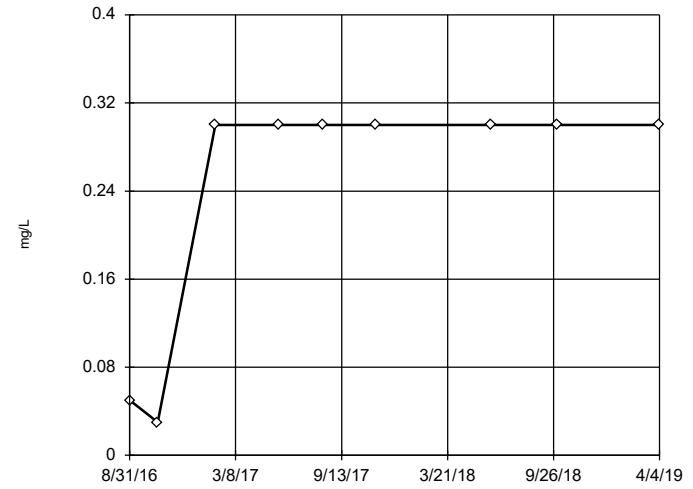
Tukey's Outlier Screening HGWA-113 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were x^{0.5} transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.2269, low cutoff = -0.1965, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

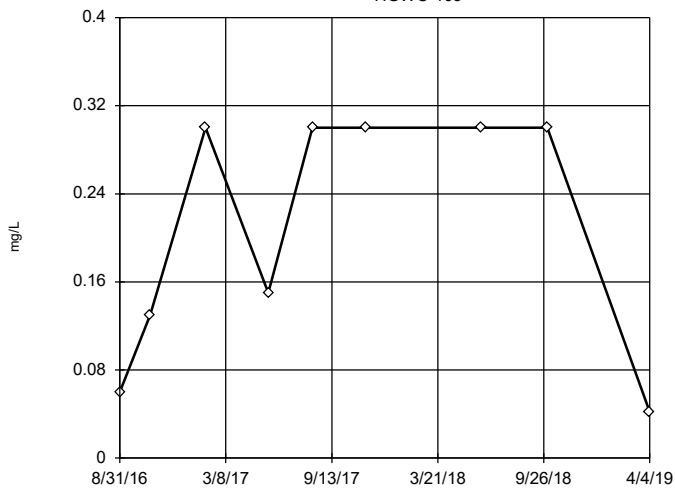
Tukey's Outlier Screening HGWC-101



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 4.409, low cutoff = 0.008333, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

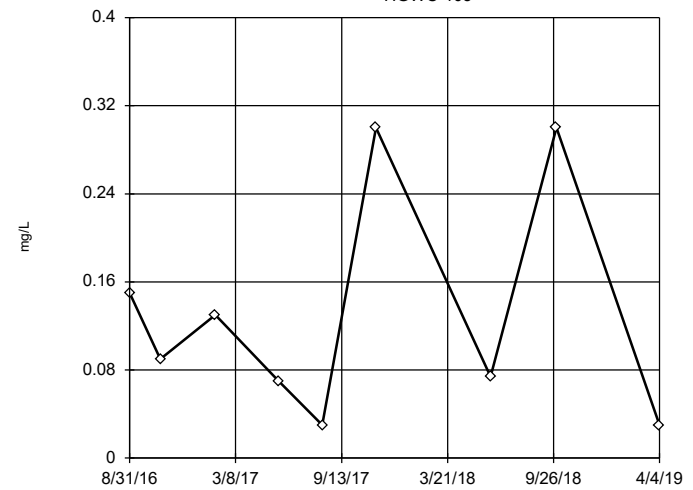
Tukey's Outlier Screening HGWC-103



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 2.356, low cutoff = -0.008551, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

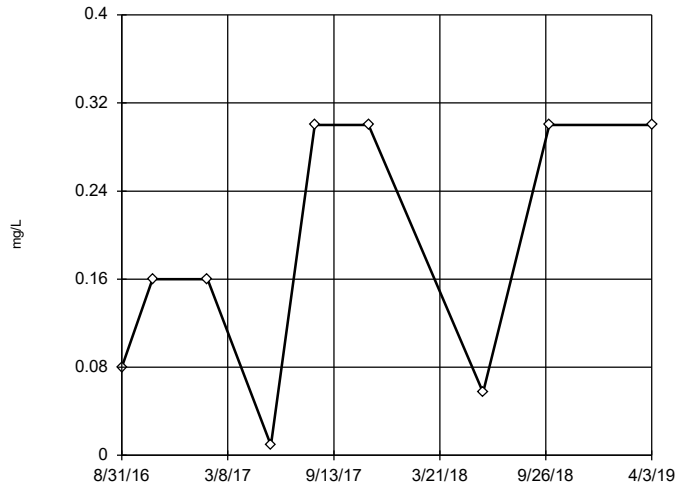
Tukey's Outlier Screening HGWC-105



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 21.04, low cutoff = 0.000462, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

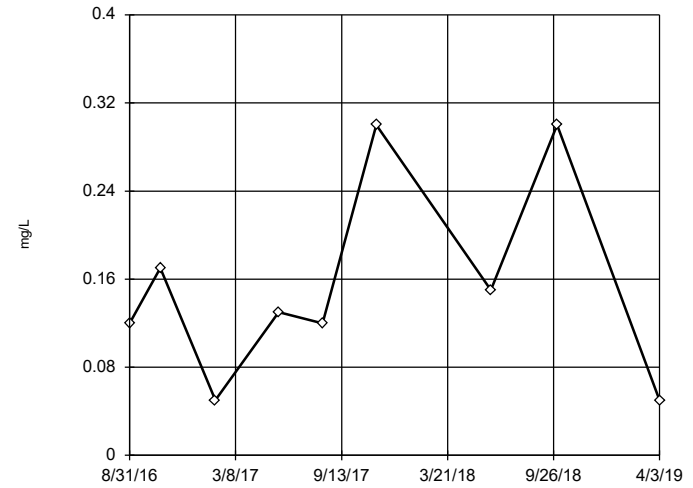
Tukey's Outlier Screening
HGWC-107



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Data were square root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.984, low cutoff = -0.36, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

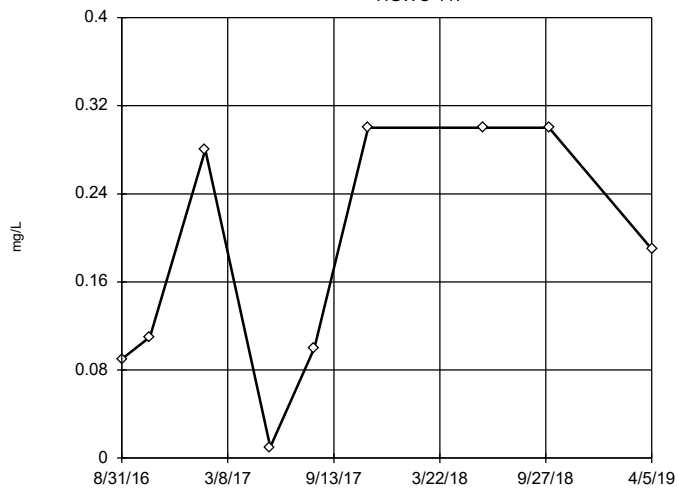
Tukey's Outlier Screening
HGWC-109



n = 9
No outliers found. Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.538, low cutoff = -0.001398, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

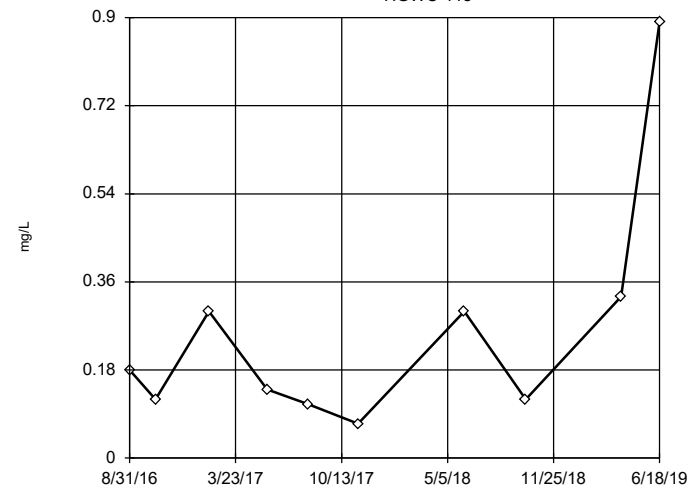
Tukey's Outlier Screening
HGWC-117



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 0.915, low cutoff = -0.52, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

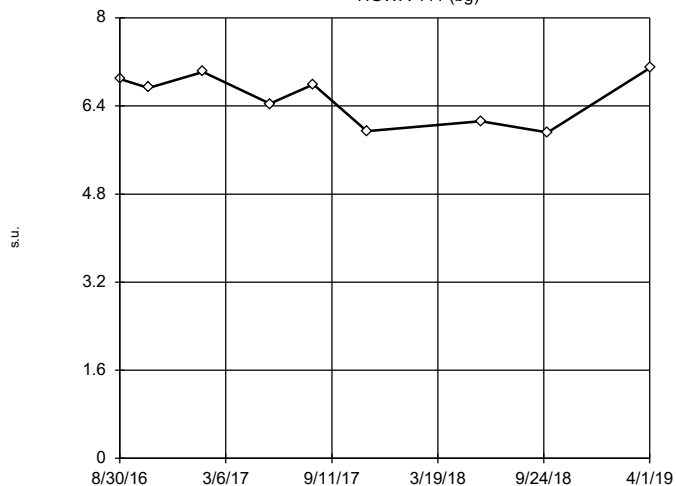
Tukey's Outlier Screening
HGWC-118



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 6.463, low cutoff = 0.005594, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

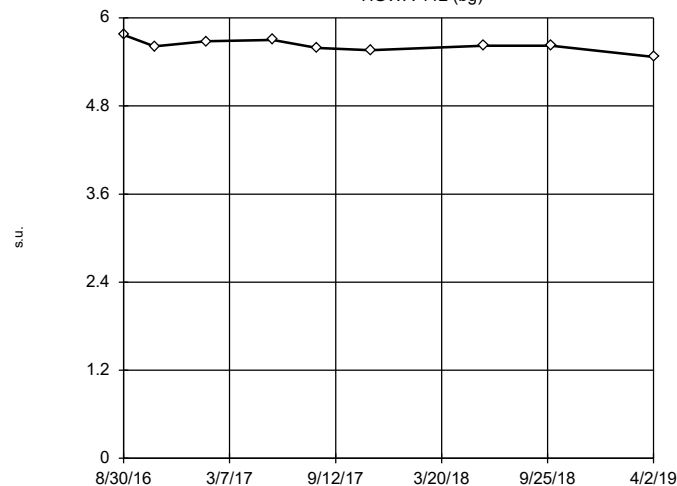
Tukey's Outlier Screening HGWA-111 (bg)



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were x^6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.221, low cutoff = -7.265, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

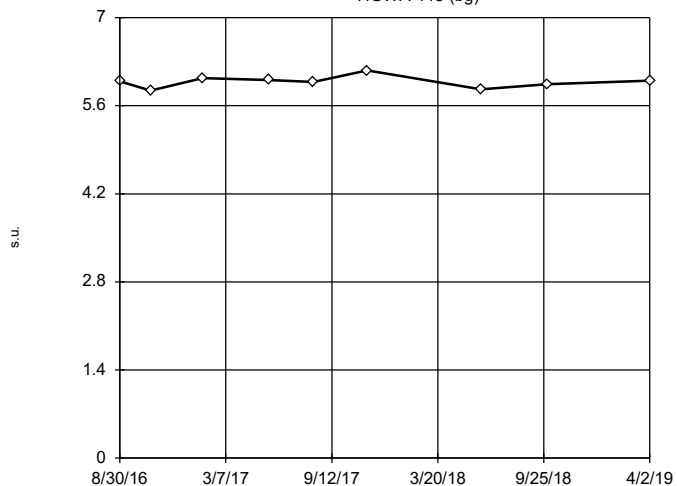
Tukey's Outlier Screening HGWA-112 (bg)



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 6.01, low cutoff = 5.198, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

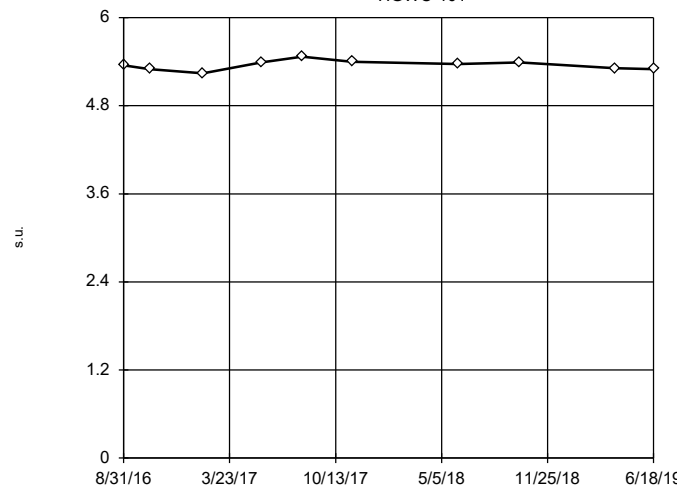
Tukey's Outlier Screening HGWA-113 (bg)



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 6.416, low cutoff = 5.54, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening HGWC-101

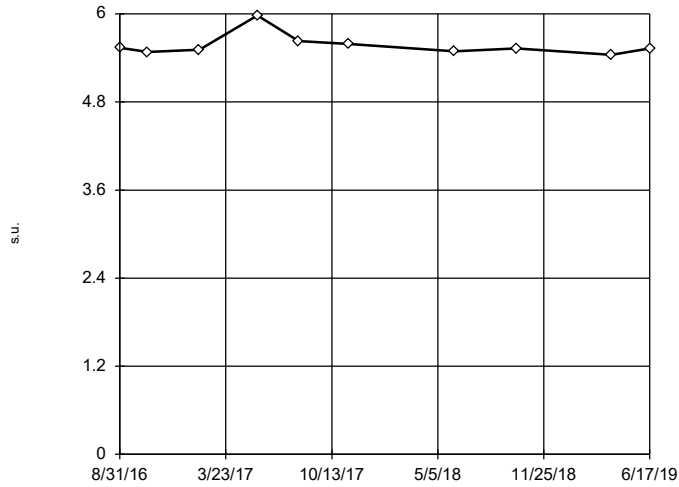


n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 5.69, low cutoff = 5.025, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-103

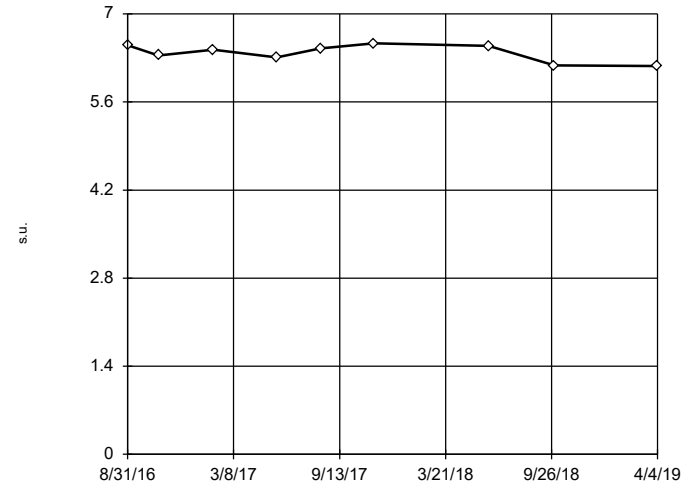


n = 10
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 6.002, low cutoff = 5.127, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-105

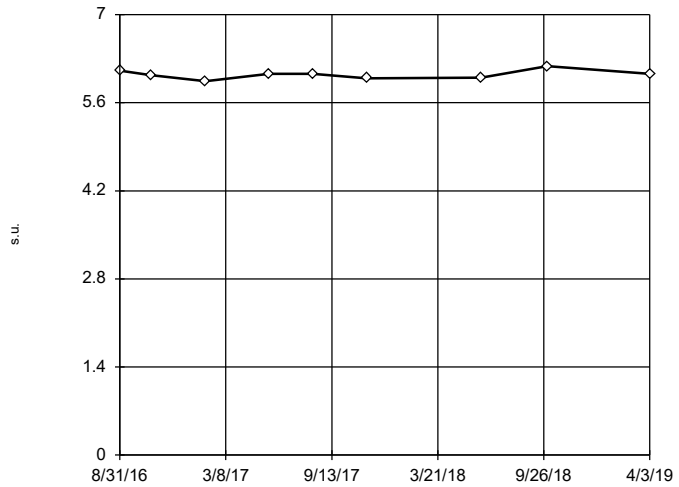


n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.043, low cutoff = 4.814, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

HGWC-107

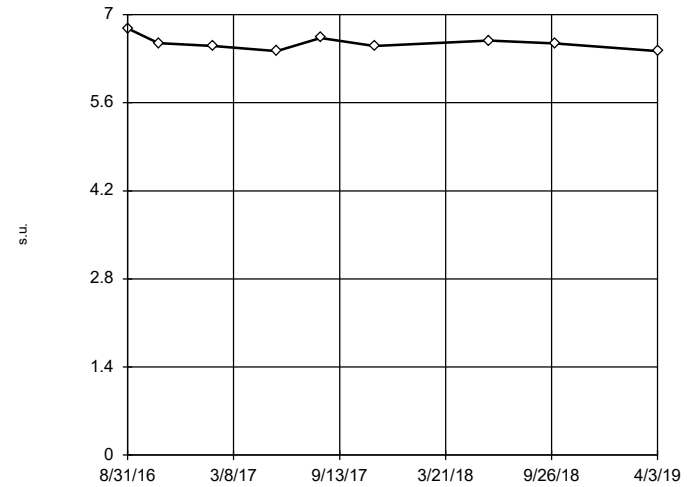


n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 6.363, low cutoff = 5.733, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening

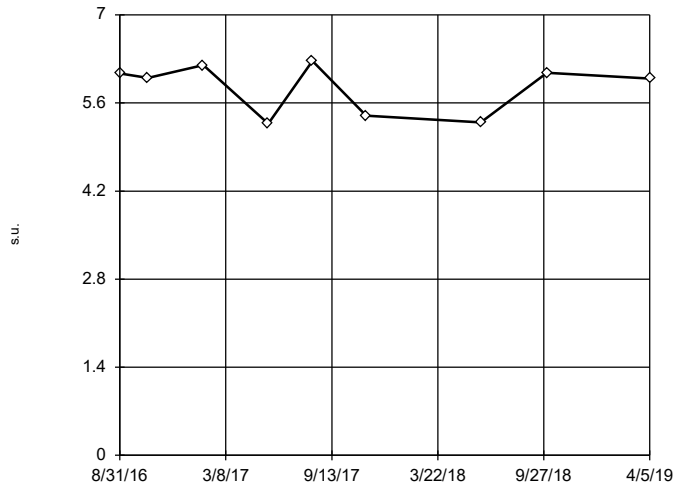
HGWC-109



n = 9
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.082, low cutoff = 6.03, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

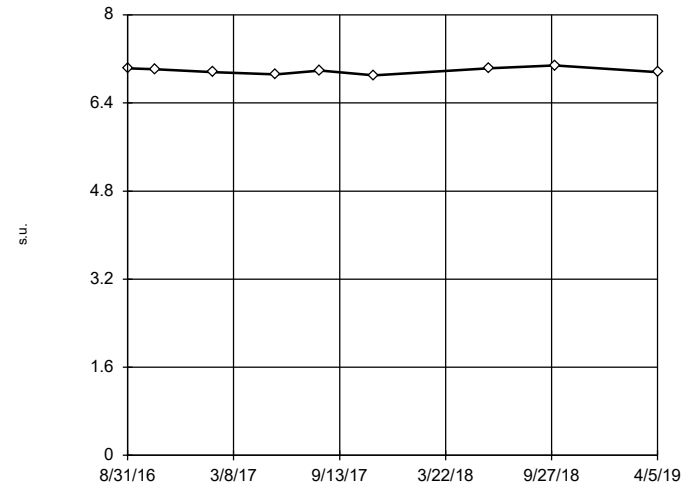
Tukey's Outlier Screening
HGWC-117



n = 9
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
Data were x*6 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 7.245, low cutoff = -6.382, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

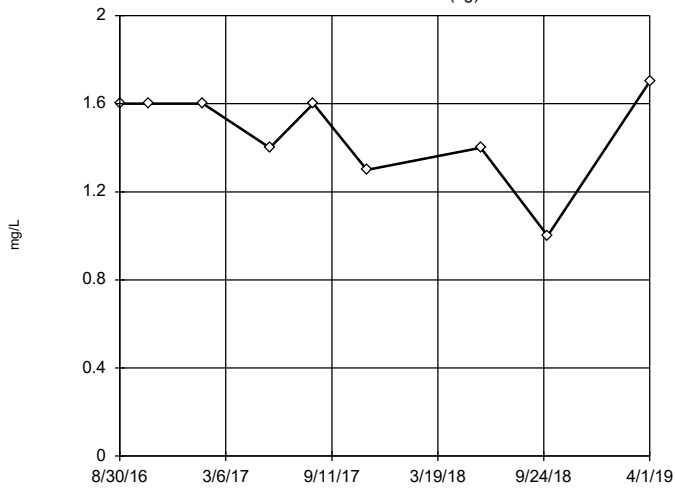
Tukey's Outlier Screening
HGWC-118



n = 9
No outliers found. Tukey's method selected by user.
Data were cube transformed to achieve best W statistic (graph shown in original units).
High cutoff = 7.287, low cutoff = 6.655, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

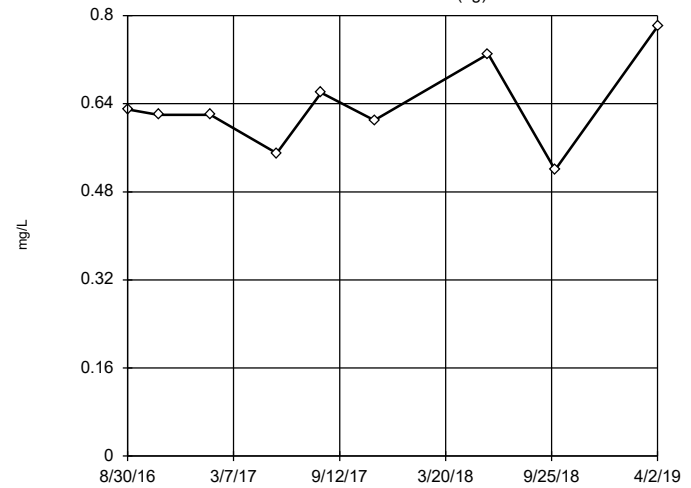
Tukey's Outlier Screening
HGWA-111 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were x*5 transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.952, low cutoff = -1.677, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Tukey's Outlier Screening
HGWA-112 (bg)



n = 9
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.195, low cutoff = 0.3366, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

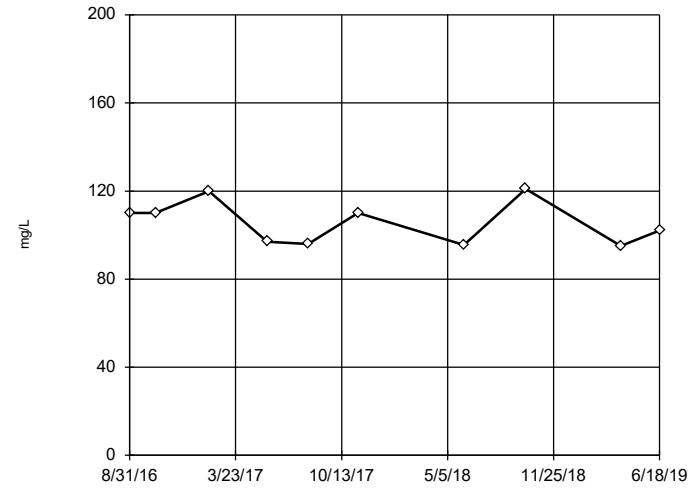
Tukey's Outlier Screening HGWA-113 (bg)



n = 9
No outliers found.
Tukey's method selected by user.
Data were square transformed to achieve best W statistic (graph shown in original units).
High cutoff = 17.76, low cutoff = -9.198, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

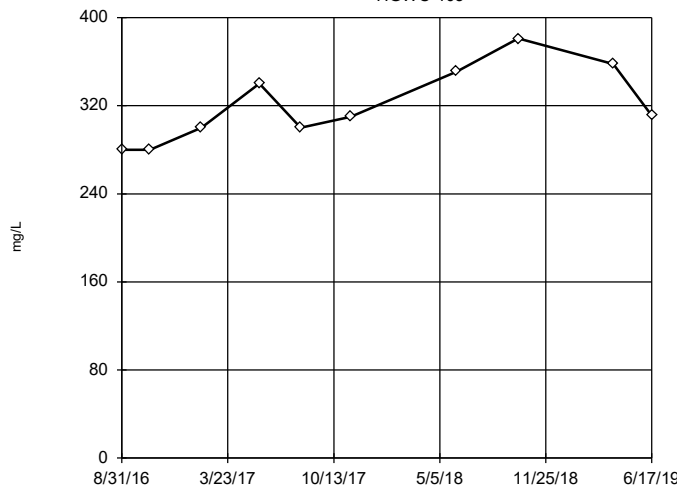
Tukey's Outlier Screening HGWC-101



n = 10
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 198.5, low cutoff = 55.42, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

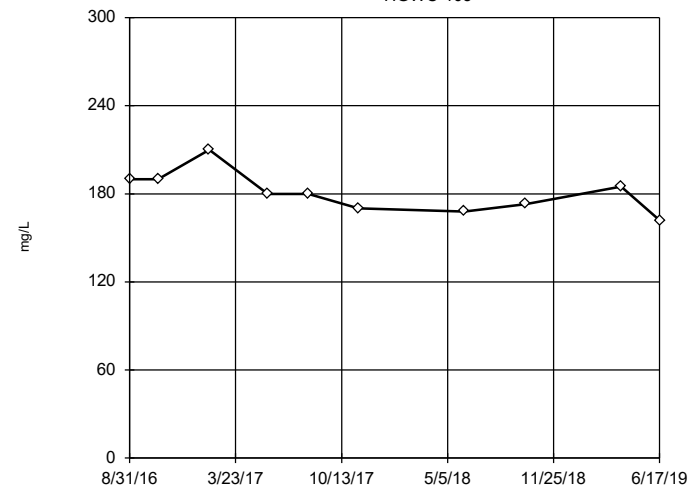
Tukey's Outlier Screening HGWC-103



n = 10
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 648.6, low cutoff = 158.4, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

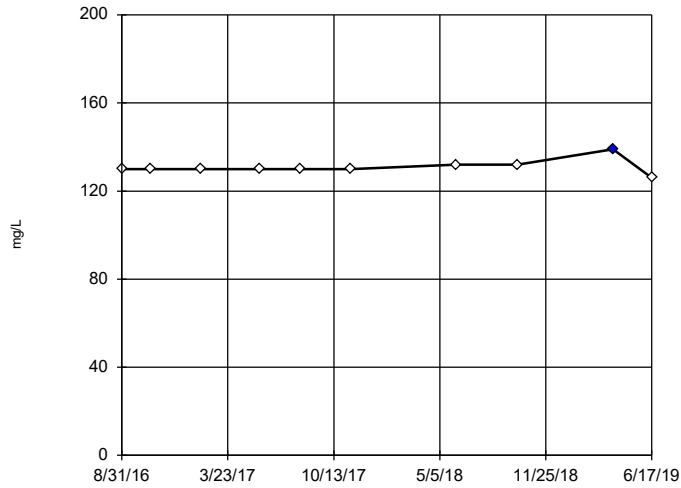
Tukey's Outlier Screening HGWC-105



n = 10
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 270, low cutoff = 118.9, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

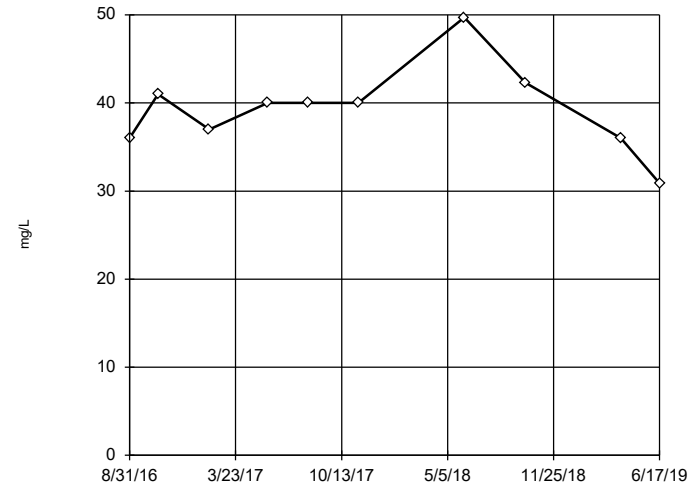
Tukey's Outlier Screening
HGWC-107



n = 10
 Outlier is drawn as solid. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 138.2, low cutoff = 124.2, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

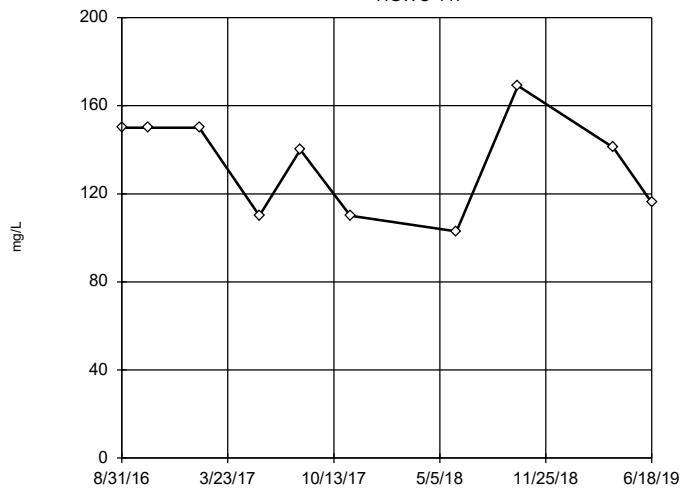
Tukey's Outlier Screening
HGWC-109



n = 10
 No outliers found. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 64.47, low cutoff = 23.26, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

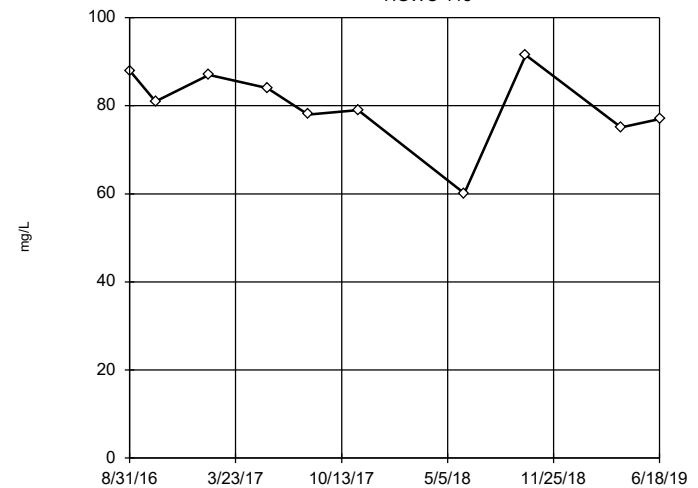
Tukey's Outlier Screening
HGWC-117



n = 10
 No outliers found. Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 231.7, low cutoff = -138.2, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

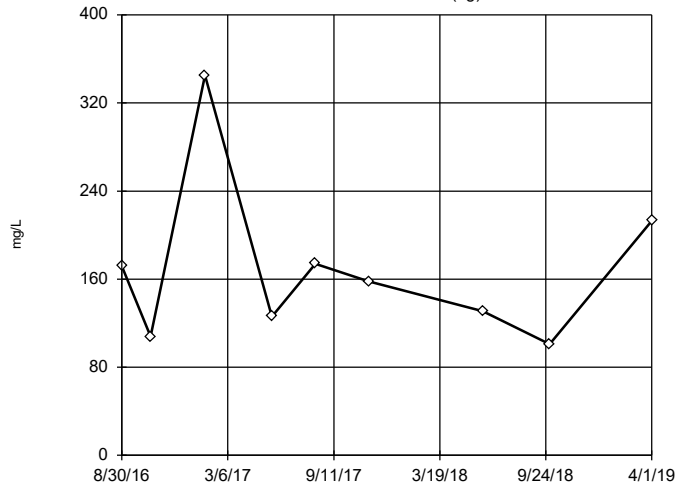
Tukey's Outlier Screening
HGWC-118



n = 10
 No outliers found. Tukey's method selected by user.
 Data were x^5 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 105.2, low cutoff = -87.74, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/30/2019 11:29 AM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

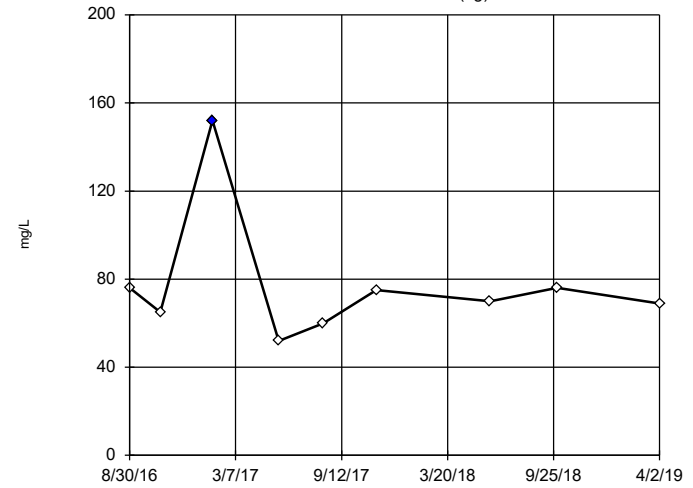
Tukey's Outlier Screening HGWA-111 (bg)



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 865.3, low cutoff = 25.95, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

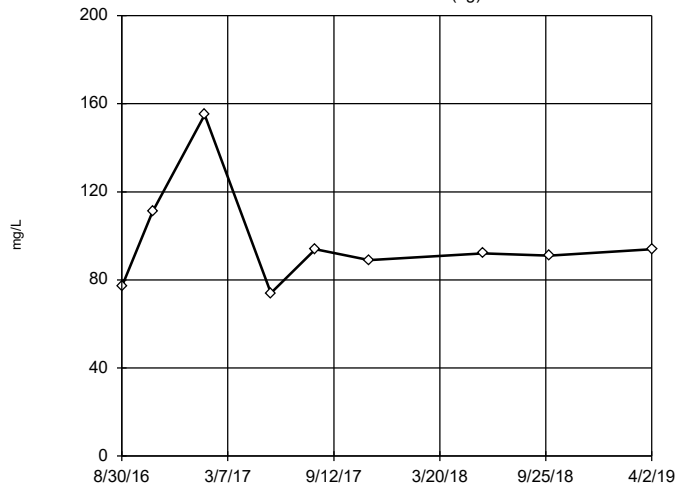
Tukey's Outlier Screening HGWA-112 (bg)



n = 9
Outlier is drawn as solid. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 137, low cutoff = 34.65, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

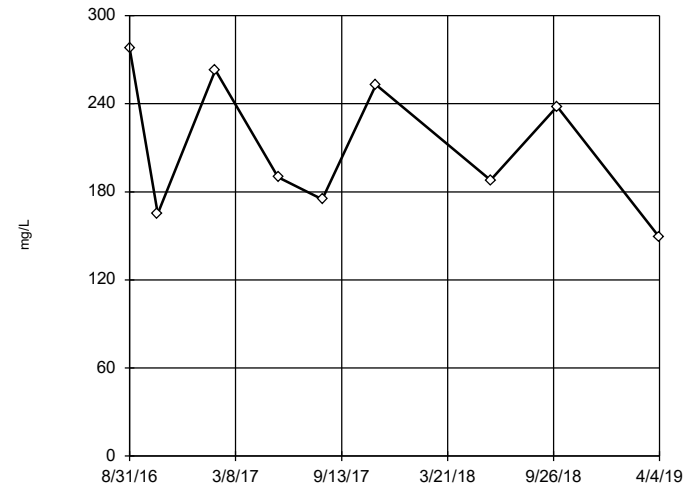
Tukey's Outlier Screening HGWA-113 (bg)



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 191.9, low cutoff = 44.06, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

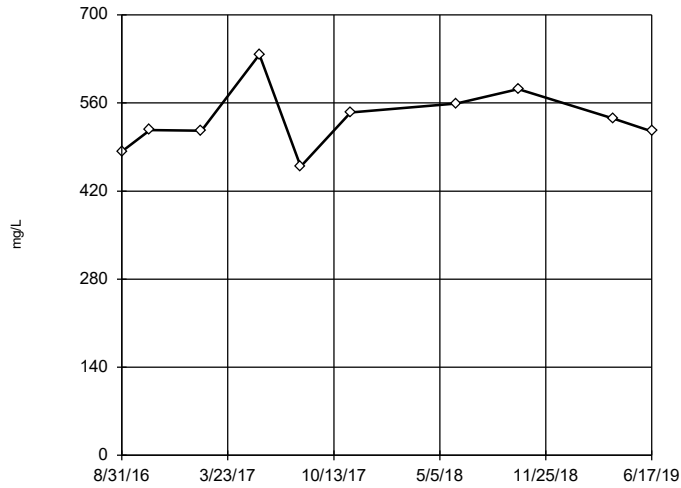
Tukey's Outlier Screening HGWC-101



n = 9
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 902.3, low cutoff = 48.58, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

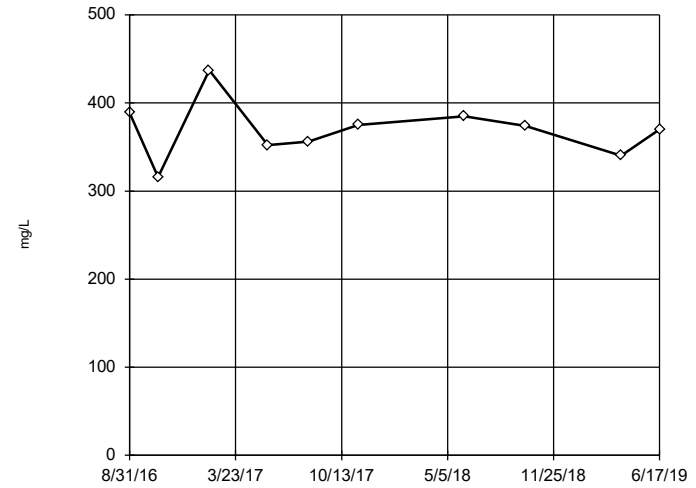
Tukey's Outlier Screening
HGWC-103



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 853.2, low cutoff = 333.4, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

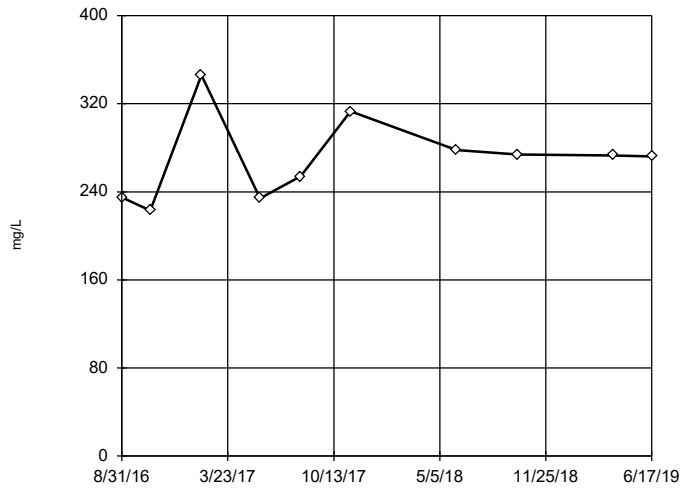
Tukey's Outlier Screening
HGWC-105



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 541.7, low cutoff = 247.1, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

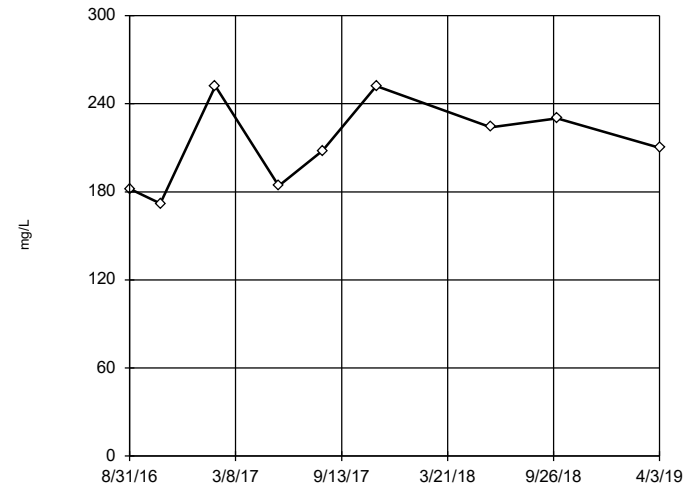
Tukey's Outlier Screening
HGWC-107



n = 10
No outliers found. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 587.2, low cutoff = 117.8, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

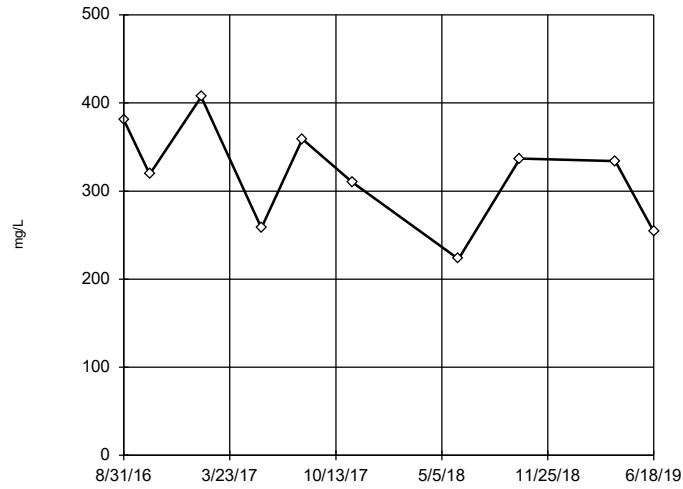
Tukey's Outlier Screening
HGWC-109



n = 9
No outliers found. Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 484.5, low cutoff = 66.17, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

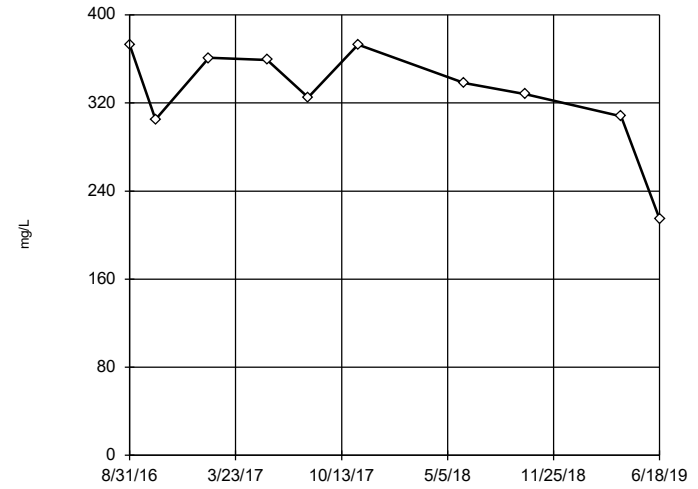
Tukey's Outlier Screening HGWC-117



n = 10
No outliers found.
Tukey's method selected by user.
Data were square transformed to achieve best W statistic (graph shown in original units).
High cutoff = 592.8, low cutoff = -385.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

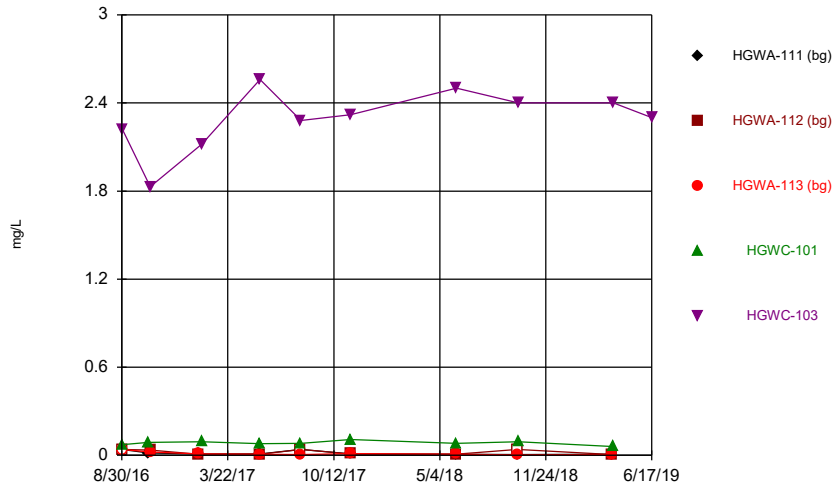
Tukey's Outlier Screening HGWC-118



n = 10
No outliers found.
Tukey's method selected by user.
Data were x⁵ transformed to achieve best W statistic (graph shown in original units).
High cutoff = 450.6, low cutoff = -391.6, based on IQR multiplier of 3.

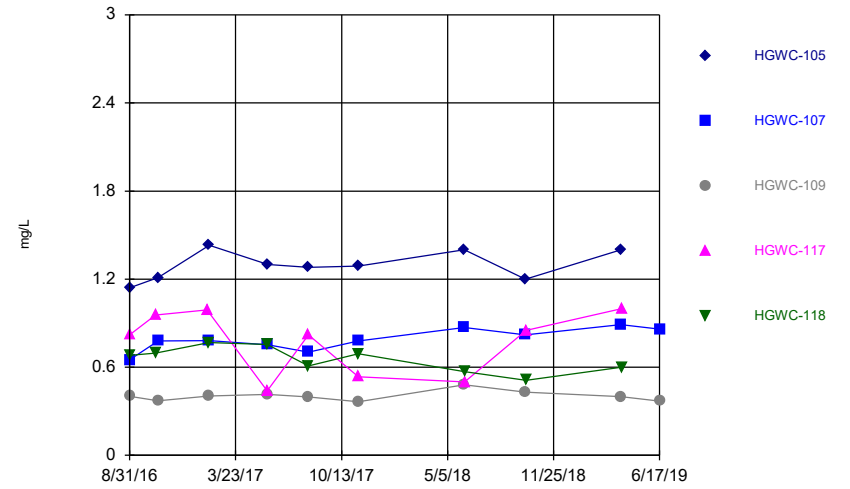
Constituent: Total Dissolved Solids Analysis Run 7/30/2019 11:29 AM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



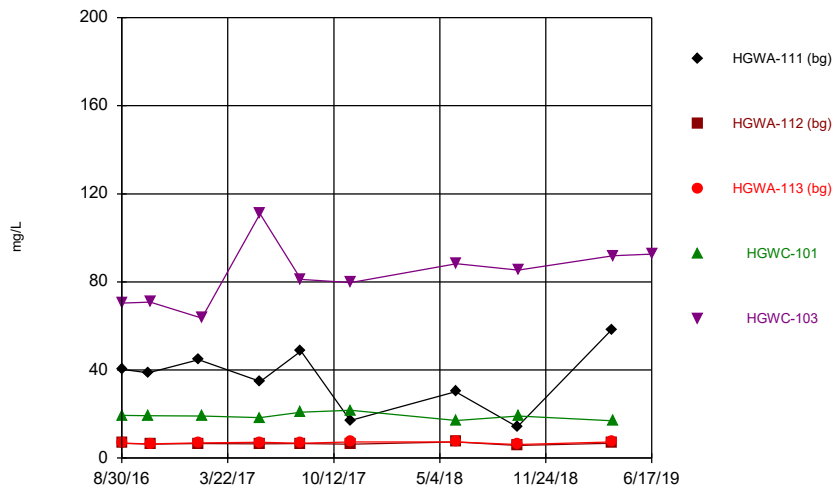
Constituent: Boron Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



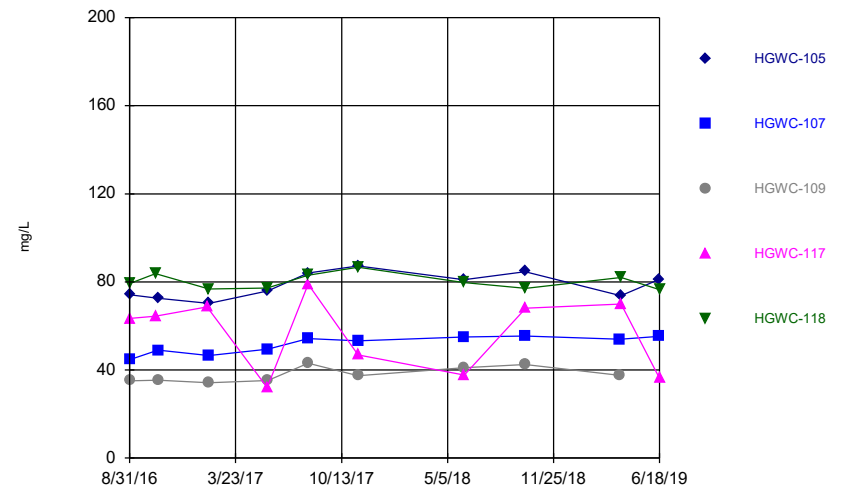
Constituent: Boron Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



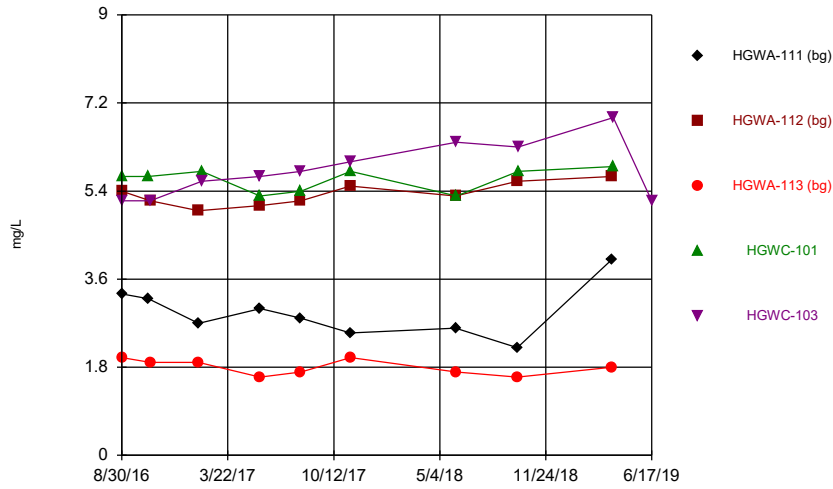
Constituent: Calcium Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



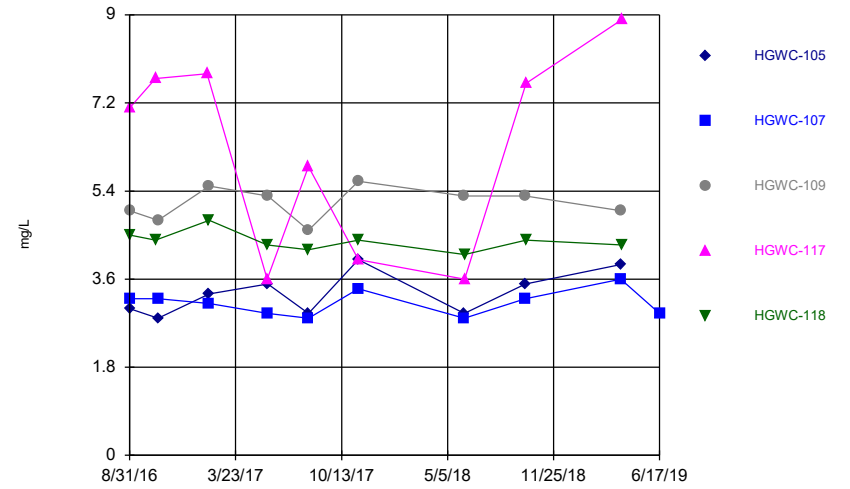
Constituent: Calcium Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



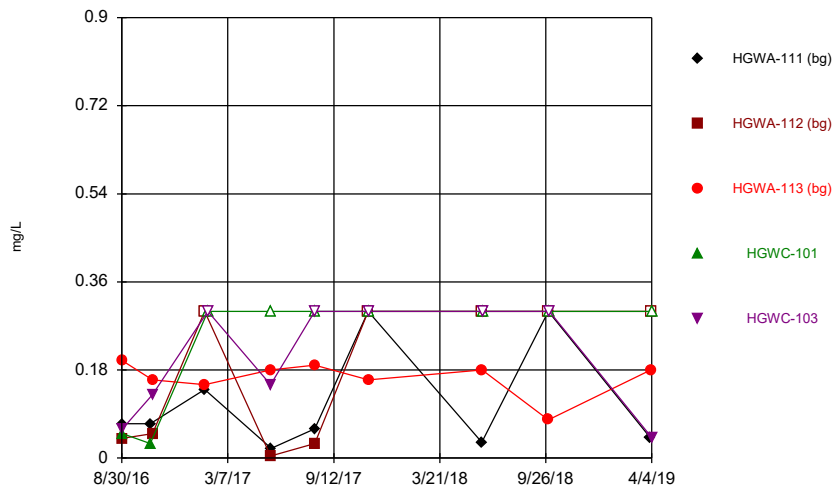
Constituent: Chloride Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



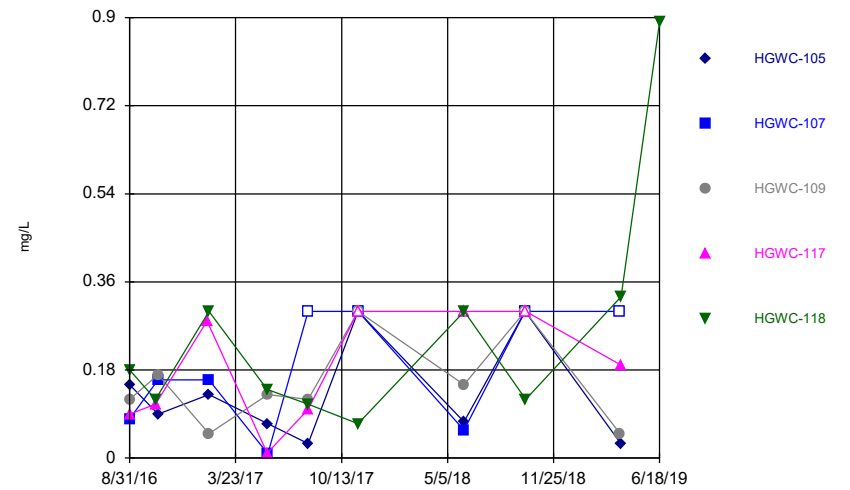
Constituent: Chloride Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



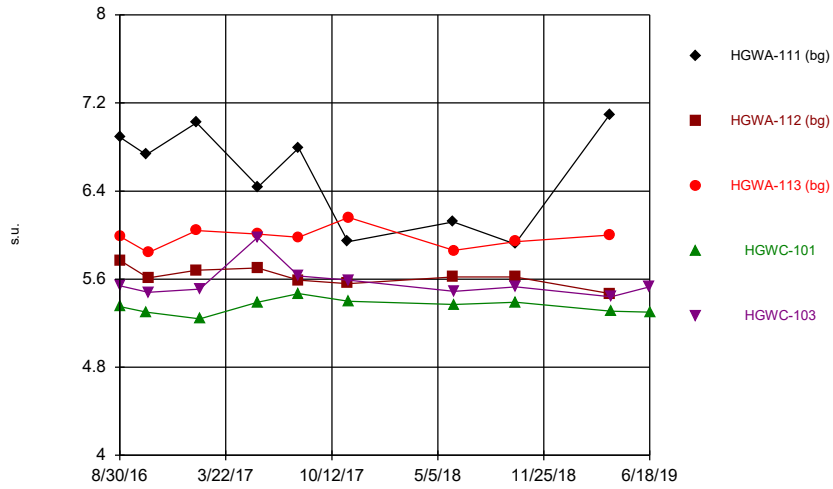
Constituent: Fluoride Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



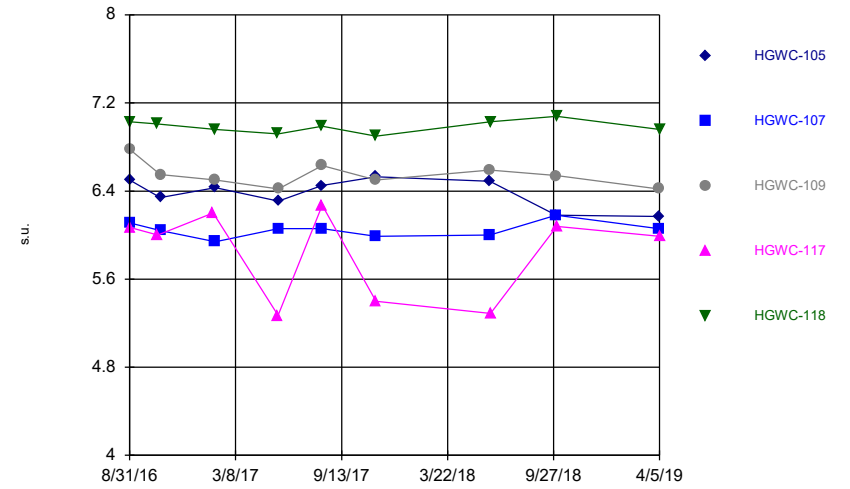
Constituent: Fluoride Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



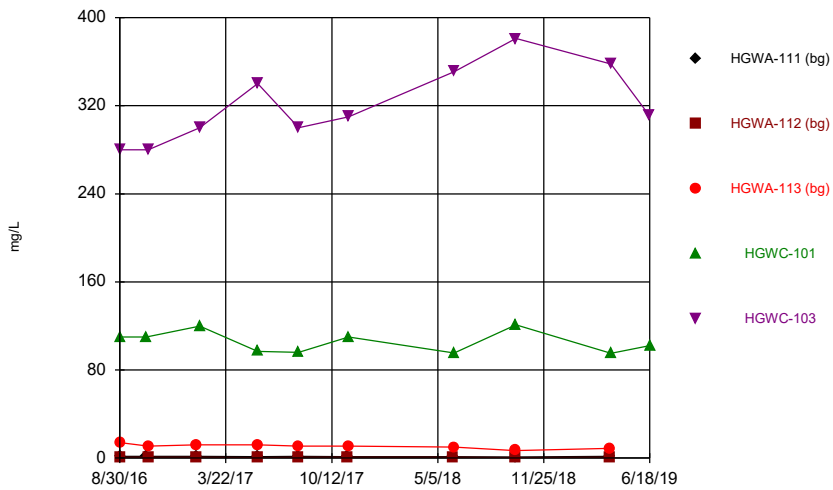
Constituent: pH Analysis Run 7/12/2019 6:01 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



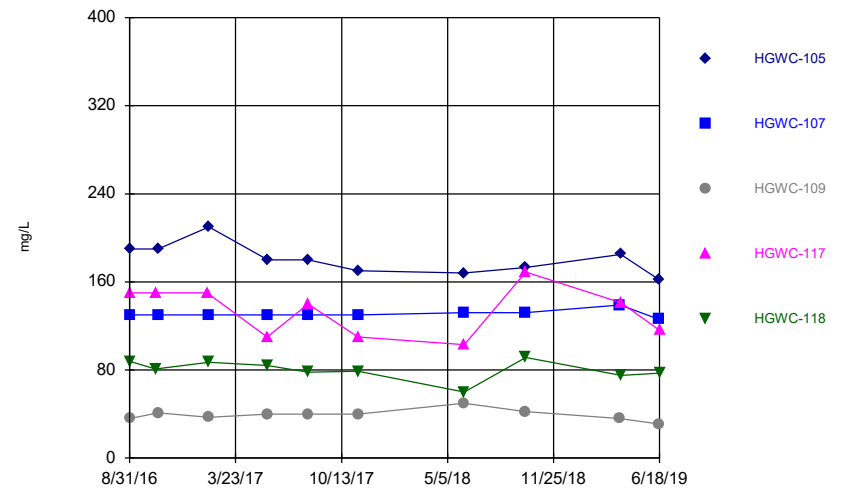
Constituent: pH Analysis Run 7/12/2019 6:01 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



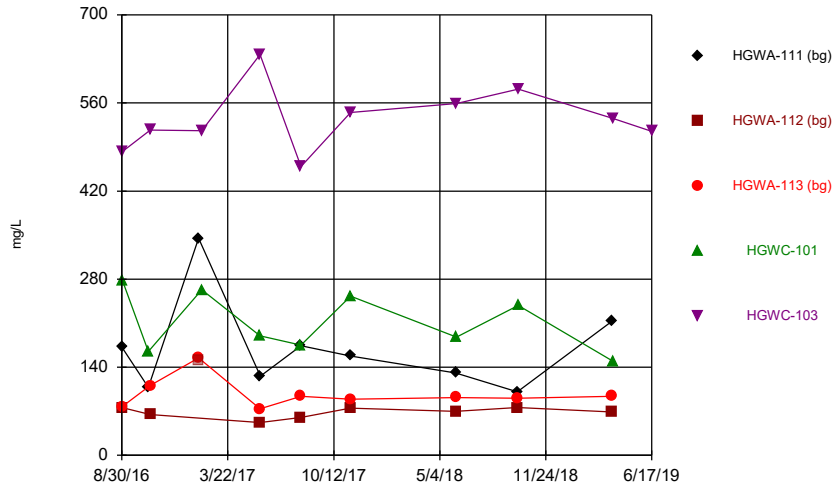
Constituent: Sulfate Analysis Run 7/12/2019 6:01 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



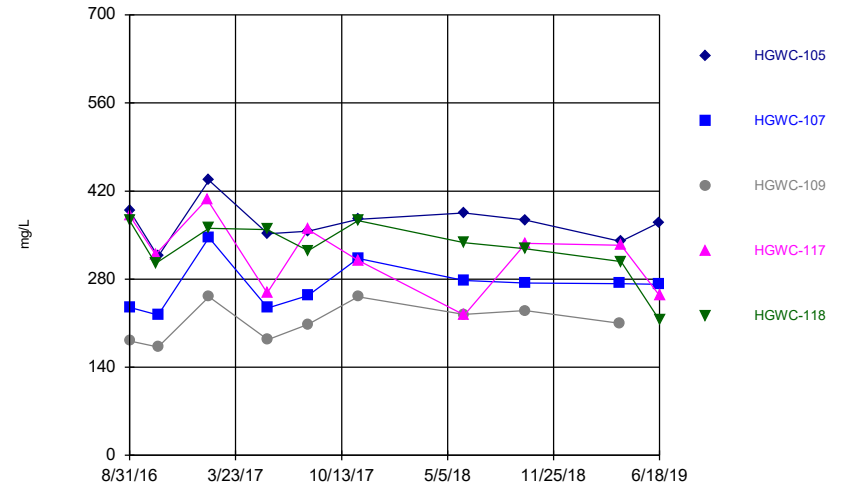
Constituent: Sulfate Analysis Run 7/12/2019 6:01 PM
Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



Constituent: Total Dissolved Solids Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4

Time Series



Constituent: Total Dissolved Solids Analysis Run 7/12/2019 6:01 PM
 Plant Hammond Client: Georgia Power Company Data: Hammond AP-4