Prepared for

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2019 ANNUAL GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 1 (AP-1)

Prepared by

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CERTIFICATION STATEMENT

This *2019 Annual Groundwater Monitoring & Corrective Action Report, Georgia Power Company - Plant Hammond – Ash Pond 1 (AP-1)* has been prepared in compliance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations (CFR) 257 Subpart D] , specifically 40 CFR § 257.90(e), 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.

January 30, 2020

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LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
DO	dissolved oxygen
ft MSL	feet above mean sea level
ft/day	feet per day
ft/ft	feet per foot
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
MCL	Maximum Contaminant Level
mg/L	milligram per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric turbidity units
ORP	oxidation-reduction potential
Pace Analytical	Pace Analytical Services, LLC.
PE	professional engineer
PL	prediction limit
QA/QC	Quality Assurance/Quality Control
SSI	statistically significant increase
SSL	statistically significant level
s.u.	standard unit
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 1 (AP-1). GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a) adopt the Federal CCR rule by reference. For ease of reference, the USEPA CCR rules are cited within this report. This report documents groundwater monitoring activities completed for AP-1 during the 2019 calendar year. A semiannual groundwater report documenting activities from January through July 2019 was prepared and submitted to GA EPD in July 2019 (Geosyntec, 2019c). This report includes the results of the annual monitoring for Appendix IV of 40 CFR § 257 conducted in March 2019 and the first and second semiannual monitoring events conducted in April and September 2019 for AP-1.

Due to statistically significant levels (SSLs) of arsenic and molybdenum identified in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2019a), GPC initiated an assessment of corrective measures (ACM) program for AP-1 on February 12, 2019. Pursuant to 40 CFR § 257.96(b), GPC continues to monitor groundwater associated with AP-1 in accordance with the assessment monitoring program established for the unit in 2018, including annual and semiannual monitoring and reporting pursuant to 40 CFR § 257.90 through 40 CFR § 257.95 of the Federal CCR rule, and GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a). The current 2019 data indicate that arsenic and molybdenum concentrations are horizontally delineated to below corresponding Groundwater Protection Standards (GWPS) and contained within the property boundary.

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.

Plant Hammond is a four-unit, coal-fired electric generating facility. All four units at Plant Hammond were retired on July 29, 2019 and no longer produce electricity.

AP-1 is a 35-acre surface impoundment located at Plant Hammond that received CCR materials from its commission in 1952 until 1969. After 1969, AP-1 was utilized as a co-treatment pond to handle return water flows from the other ponds and for recycling of process water for plant operations. GPC will close AP-1 through removal of the CCR material from the CCR unit; closure activities will be conducted in accordance with 40 CFR § 257.102 and corresponding Rule 391-3-4-.10(7)(b). The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Details of the closure approach are provided in the Initial Written Closure Plan, published in 2016 to GPC's CCR Rule Compliance website.

1.2 Regional Geology & Hydrogeologic Setting

The following section summarizes the geologic and hydrogeologic conditions at AP-1 as described in the *Hydrogeologic Assessment Report Revision 01 – AP-1* (HAR Rev 01) submitted to GA EPD in December 2019 under separate cover in support of the AP-1 solid waste handling permit (Geosyntec, 2019d)

1.2.1 Regional and Site Geology

The Site is located within the Great Valley District of the Valley and Ridge Physiographic Province (Valley and Ridge) in 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-1 is underlain by the middle units of the Cambrian age Conasauga Formation, consisting of mostly shaley limestone. Subsurface investigations at AP-1 describe the bedrock as limestone or shaley limestone. AP-1 is underlain primarily by five lithologic units: (i) fill, (ii) terrace alluvium, (iii) residuum, (iv) highly weathered/fractured shaley limestone bedrock, and (v) competent shaley limestone bedrock.

Based on subsurface investigations the fill material is composed of lean clay or gravelly lean clay with sand from the construction of the pond. The terrace alluvium consists of unconsolidated sediments associated with deposition from the Coosa River and Cabin Creek. Alluvium was variously described as well sorted and poorly sorted sand, clayey sand, sandy gravel, clayey gravel, or gravelly clay. The residuum clay layer or native

soils have been derived from the in-place weathering of the shaley limestone bedrock. The residuum is generally described as a lean to fat clay, sometimes silty with some sand, and rarely gravel. The subsurface investigation data suggests the residuum thins out in places and the alluvial deposits is in direct contact with the upper fractured or the unweathered limestone bedrock. Just below the residuum clay layer is a gradational zone of varying proportions of clayey residuum and sand, gravel, and cobble-sized angular pieces of partially weathered limestone, grading into a zone of fractured shaley limestone, before grading into unweathered, fresh shaley limestone bedrock. The upper highly weathered zone appears more as residuum with various sized rock fragments. The lower zone becomes less clayey with depth and is estimated to be approximately 10 feet thick. The limestone is described as medium to dark gray, very finely laminated with lighter and darker gray layers, and contains interbeds of calcareous shale.

1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-1 is a regional groundwater aquifer that occurs in the terrace alluvium, residuum, and the weathered and fractured bedrock. The uppermost aquifer is considered to be unconfined; however, localized, semi-confined conditions may be encountered due to the low-permeability clayey nature of the residual soils, or as a result of perched groundwater or poorly interconnected fracture networks in the bedrock. Based on observations of soil types and horizontal conductivity values, the movement of groundwater in the soil, and to some degree the highly weathered bedrock zone, can be characterized as low-to moderate permeability, porous media flow. Groundwater flow in the more competent underlying bedrock is characterized as fracture flow. Groundwater flow in the vicinity of AP-1 is to the east and south.

1.3 Groundwater Monitoring Well Network

In accordance with 40 CFR § 257.91, a groundwater monitoring system was installed at AP-1 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 certified compliance monitoring well network for AP-1 consists of ten monitoring wells. The well network was certified by a professional engineer (PE) on October 17, 2017; the certification is maintained in the AP-1 Operating Record.

As part of the assessment program, nine additional groundwater monitoring wells were installed in 2018 and 2019 to provide additional data to characterize flow conditions downgradient of AP-1 and to horizontally and vertically delineate SSLs of arsenic and molybdenum. Wells MW-19, MW-20, and MW-29 were installed to provide horizontal delineation, and wells MW-24D, MW-25D, MW-26D, MW-27D, MW-28D, and MW-30D were installed to provide vertical delineation. The delineation well network was supplemented by adding piezometers MW-5, MW-6, and MW-7, which were originally installed in 2014 to gauge water levels downgradient of AP-1. These three piezometers were suitably located downgradient of AP-1 and therefore reclassified as horizontal delineation wells. Pursuant to 40 CFR § 257.195(g)(1)(iv), these twelve delineation wells will continue to be sampled concurrently with the compliance monitoring well network.

A network of piezometers has been installed at the Site that are used to gauge water levels to define groundwater flow direction and gradients. There are three piezometers (AP1A-1, MW-1, MW-8) used to gauge groundwater levels in vicinity of AP-1.

The locations of the compliance monitoring wells, delineation wells, and groundwater level monitoring piezometers 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 monitoring-related activities performed during January through December 2019 and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with 40 CFR § 257.93.

2.1 Monitoring Well Installation and Maintenance

One additional groundwater monitoring well (MW-30D) was installed in June 2019 to vertically delineate groundwater conditions adjacent to well HGWC-7 and MW-28D. The location of well MW-30D is shown on **Figure 2**; well construction details are also provided in **Table 1**. Also, a well installation report that includes detailed boring and well construction logs for MW-30D is provided in **Appendix A**.

SCS Civil Field Services (CFS) raised the ground surface surrounding wells HGWC-13 and MW-24D in April 2019, raised the elevation of each well pad, and added as section of riser to each well's casing to accommodate an increase in ground surface elevations associated with construction of the low-volume wastewater treatment plant located in vicinity of the two wells. The wells were resurveyed on April 18, 2019; changes in construction details are included 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. The well inspection forms for 2019 are provided in **Appendix B**.

Several AP-1 wells and piezometers located south and east of AP-1 along the Coosa River were redeveloped after the river crested the banks in late February 2019. These wells were redeveloped as a precautionary measure prior to the March 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.

In addition to completing routine maintenance of the well network in 2019, CFS installed dedicated QED bladder pumps in the following AP-1 delineation wells in September 2019: MW-5, MW-6, MW-7, MW-19, MW-20, MW-29, MW-24D, MW-25D, MW-26D, MW-28D, and MW-30D.

2.2 Assessment Monitoring

GPC initiated an assessment monitoring program for groundwater at AP-1 in January 2018. Statistical analyses of the 2018 assessment monitoring groundwater data identified SSLs of molybdenum in wells HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13; SSLs of arsenic were also identified in well HGWC-13.

Pursuant to 40 CFR § 257.96, an ACM was initiated for AP-1 on February 12, 2019. An *Assessment of Corrective Measures Report* was subsequently prepared for AP-1 (Geosyntec, 2019b) and submitted to GA EPD. In accordance with 40 CFR § 257.96(b), groundwater continues to be monitored at AP-1 under the assessment monitoring program while the ACM phase is implemented.

The initial annual Appendix IV sampling event was conducted in March 2019; the semiannual assessment monitoring events were conducted in April and September 2019. The number of groundwater samples collected for analysis and the dates the samples were collected at AP-1 during the 2019 reporting period is summarized in **Table 2**. Details of these events and analytical results are discussed in Section 3, while the statistical results are discussed in Section 4.

2.3 Additional Groundwater Sampling

The following summarizes additional groundwater sampling events or expanded sampling scopes conducted during the 2019 reporting period. Details of these supplementary events are discussed in Section 4.3.

- *July 8, 2019*: Newly-installed vertical delineation well MW-30D was sampled to assess concentrations of molybdenum in groundwater relative to the concentrations reported in wells HGWC-7 and MW-28D and evaluate options for preparing a demonstration that attributes the source of the molybdenum groundwater concentrations in MW-30D to naturally occurring variations in the groundwater unassociated with AP-1.

- *September 23-27, 2019*: Additional groundwater samples were collected from the compliance and delineation wells during the September semiannual assessment monitoring event. The samples were analyzed for supplemental parameters in support of the on-going ACM efforts presented in the ACM Report. The supplementary data will be used to evaluate (i) attenuation mechanisms and rates and aquifer capacity for attenuation; (ii) amount and distribution of select metal

hydroxides or electron donors that may affect geochemical mechanisms parameters; and (iii) groundwater parameters specific to the existing National Pollutant Discharge Elimination System permitted discharge limits and capabilities of on-site low volume wastewater treatment plant. The scope of these additional efforts and associated results are presented in the *Supplemental Semi-Annual Remedy Selection and Design Progress Report* submitted to GA EPD December 12, 2019 (Geosyntec, 2019e). A copy of this report is provided in **Appendix C**.

- *November 25, 2019*: Groundwater samples were collected from wells MW-26D and MW-30D to confirm select Appendix IV constituents that were reported in excess of GWPS for the September 2019 event. The sample from well MW-26D was analyzed for molybdenum; the sample from well MW-30D was analyzed for fluoride, lithium, and molybdenum.

Unless otherwise noted, the field logs and laboratory reports associated with these supplementary sampling events are included in **Appendix D**

3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were implemented and the groundwater sampling results that were obtained in connection with the assessment monitoring program conducted at AP-1 during 2019.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth to groundwater level measurements were recorded from the AP-1 wells and piezometers and used to calculate the corresponding groundwater elevations. The calculated groundwater elevations for the March, April, and September 2019 events are presented in **Table 3**. The groundwater elevations observed for the March 2019 event ranged from 588.76 feet mean sea level (ft MSL) (referenced to the North American Vertical Datum of 1988) in well HGWA-1 to 569.76 ft MSL in well MW-7. For the April 2019 event, the groundwater elevations ranged from 585.20 ft MSL in well HGWA-1 to 565.71 ft MSL in well MW-7. In September 2019, groundwater elevations ranged from 575.67 ft MSL in well HGWA-3 to 562.92 ft MSL in well MW-5.

The groundwater elevation data were used to prepare potentiometric surface maps for the March, April, and September 2019 events, which are presented on **Figures 3**, **4**, and **5**, respectively. Groundwater in the AP-1 area flows under the influence of topography from slightly higher elevations on the north side of the Site in a generally easterly and southerly direction.

3.2 Groundwater Gradient and Flow Velocity

The groundwater hydraulic gradients within the uppermost aquifer beneath AP-1 were calculated using the groundwater elevation data from the March, April, and September 2019 events. The supporting calculations are presented in **Table 4.** The presented hydraulic gradients represent the calculated average of the March, April, and September 2019 events. The general trajectory of the flow paths used in the calculations and associated potentiometric contour lines are shown on **Figures 3**, **4**, and **5**.

As presented in **Table 4**, the average hydraulic gradients along the southerly and easterly groundwater flow path lines associated with AP-1 are 0.049 feet per foot (ft/ft) and 0.029 ft/ft, respectively.

The approximate horizontal flow velocities associated with AP-1 were calculated using the following derivative of Darcy's Law. The calculations are presented on **Table 4**.

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

where:

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

K = Hydraulic Conductivity $\left(\frac{feet}{day}\right)$

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

n_e = Effective porosity

The average hydraulic conductivity for AP-1 of 11.82 feet per day (ft/day) was computed from slug test data derived from ten locations across the AP-1 area and presented in the HAR Rev 01. An estimated effective porosity of 0.15 is used to represent average conditions at AP-1, derived based on review of literature, observed site lithology, and professional judgement. With these variables determined, and accounting for the averaged hydraulic gradient discussed above for the three 2019 events, the average groundwater flow velocity in the vicinity of AP-1 was calculated to be 3.1 ft/day (i.e., average of the southerly and easterly flow velocities). The flow velocity calculations are provided in **Table 4**.

3.3 Groundwater Sampling Procedures

Groundwater samples were collected from the compliance monitoring and delineation well networks using low-flow sampling procedures in accordance with 40 CFR § 257.93(a). Nineteen of the 22 wells were purged and sampled using the installed bladder pump with dedicated tubing; the remaining three wells (HGWC-10, HGWC-11, and MW-27D) were 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 [i.e., pH, conductivity, oxidation-reduction potential (ORP), temperature, and dissolved oxygen (DO)] 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 ± 0.1 Standard Units (s.u.).
- Conductivity ± 5%.
- ±0.2 mg/L or ±10%, whichever is greater for 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 monitoring events conducted during March through September are provided in **Appendix D**.

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 D**.

The Appendix III and IV related groundwater results from the 2019 monitoring events are summarized in **Table 5**. The Pace Analytical laboratory reports associated with the results presented in **Table 5** are provided in **Appendix D**.

3.5 Quality Assurance & Quality Control Summary

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events at the rate of one QA/QC sample per 10 groundwater samples 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, 2011; USEPA, 2017). Where necessary, the data were qualified with supporting documentation and justifications. The associated data validation report is provided in **Appendix D** with the laboratory reports.

4.0 STATISTICAL ANALYSIS

The following section presents a summary of the statistical approach applied to assess the 2019 groundwater analytical data in downgradient compliance wells relative to the available historical dataset. Groundwater monitoring data collected during the semiannual assessment monitoring events in April and September 2019 were statistically analyzed pursuant to 40 CFR § 257.95 following the PE-certified statistical method. Appendix III detection monitoring parameters were statistically analyzed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were analyzed to determine if concentrations statistically exceeded the established GWPS. The following subsections provide an overview of the statistical methods used to evaluate Appendix III and IV parameters and statistical analyses results.

4.1 Statistical Methods

The Sanitas groundwater statistical software was used to perform the statistical analyses. Sanitas 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 and Appendix IV parameters are formally tested using Tukey's box plot method and not used to establish statistical limits. Background well data were updated following the Unified Guidance recommendation, evaluating recent background data using Tukey's box plot method for outliers and Sen's Slope/Mann-Kendall methods for potential trends.

4.1.1 Appendix III Statistical Methods

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for each of the Appendix III parameters. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. If the most recent sample exceeds its respective background statistical limit, an initial statistically significant increase (SSI) is identified. The results are discussed in Section 4.2 and tabulated in **Table E-1, Appendix E**.

4.1.2 Appendix IV Statistical Methods

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

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

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

(1) The maximum contaminant level (MCL) established under 40 CFR § 141.62 and 141.66.

(2) Where an MCL has not been established:

(i) Cobalt 0.006 mg/L;

(ii) Lead 0.015 mg/L;

(iii) Lithium 0.040 mg/L; and

(iv) Molybdenum 0.100 mg/L.

(3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

USEPA's updated GWPS have not yet been incorporated under GA EPD's CCR Rule. The GA EPD CCR Rule GWPS is:

(1) The federally established MCL.

(2) Where an MCL has not been established, the background concentration.

(3) Background levels for constituents where the background level is higher than the MCL.

Following the above federal and state rule requirements, GWPS have been established for statistical comparison of Appendix IV constituents and are presented in **Table 6**. Additional details are presented in the statistical analysis packages provided in **Appendix E**.

4.2 Statistical Analyses Results

Analytical data from the April and September 2019 semiannual monitoring events were statistically analyzed in accordance with the Statistical Analysis Method Certification (October 2017, revised January 2020). Appendix III statistical analysis was performed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were evaluated to determine if concentrations statistically exceeded the established GWPS.

Based on review of the Appendix III statistical analysis presented in **Table E-1**, no pH exceedances over background PLs were identified; however, the remaining Appendix III constituents previously identified to exceed respective PLs have not returned to background levels and assessment monitoring should continue pursuant to 40 CFR § 257.95(f).

A summary of the Sanitas outputs for the April and September 2019 assessment events is provided in **Appendix E**. Based on the statistical analysis of Appendix IV parameters as described in Section 4.1.2, the following parameters were found to exceed the GWPS:

AP-1 (Federal CCR Rule):

- Arsenic: HGWC-13;
- Molybdenum: HGWC-8

AP-1 (GA EPD CCR Rule):

- Arsenic: HGWC-13;

- Molybdenum: HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13

The April and September 2019 statistical evaluation results are consistent with the 2018 reporting year statistical results. A groundwater exceedance notification will be placed in the operating record pursuant to 40 CFR § 257.95(g).

4.3 Delineation Data

Limited groundwater analytical data are available for delineation wells installed at the Site since 2019; therefore, groundwater quality is compared to the applicable GWPS. A review of the 2019 analytical data derived from delineation wells identified the following Appendix IV GWPS exceedance:

AP-1 (Federal CCR Rule):

- Fluoride: MW-30D
- Lithium: MW-25D, MW-30D

AP-1 (GA EPD CCR Rule):

- Fluoride: MW-30D
- Lithium: MW-25D, MW-30D
- Molybdenum: MW-19, MW-26D, MW-28D, MW-30D

GPC is evaluating preparing a demonstration document that outlines evidence illustrating that fluoride, lithium, and molybdenum groundwater detections in well MW-30D are naturally occurring within the localized rock formation. Based on (i) the observed geochemical field parameters, (ii) the lack of fluoride and lithium detections in the shallower wells (MW-28D, HGWC-7) above MW-30D, and (iii) the static groundwater level differential between MW-30D and the two shallower wells, the preliminary evidence indicates the GWPS exceedances in MW-30D originate from a source other than AP-1. The depth differential between the top of screen for MW-30D and the bottom of screen for MW-28D is nearly 40 feet of competent bedrock. Aquifer solid material from well MW-30D will be submitted for analysis of total lithium, fluoride, and molybdenum in February 2020. The results from this analysis will be used to prepare a

demonstration document. Determining the natural-occurring source in MW-30D will serve to vertically delineate molybdenum groundwater concentrations in wells HGWC-7 and MW-28D.

Based on the 2019 Appendix IV groundwater data, the arsenic and molybdenum concentrations in horizontal delineation wells MW-5, MW-6, MW-7, MW-20, and MW-29 are below state and federal GWPS and therefore delineate the two constituents to within the property boundary. The arsenic concentration reported in well MW-24D is below the state and federal GWPS, and therefore vertically delineates the arsenic SSL reported for well HGWC-13. Similarly, the molybdenum concentrations in wells MW-24D, MW-25D, and MW-27D are less than the GWPS, and therefore, vertically delineate molybdenum SSLs in wells HGWC-13, HGWC-11, HGWC-12, and HGWC-8, respectively (the location of MW-25D delineates both HGWC-11 and HGWC-12). Vertical delineation of molybdenum in wells HGWC-9 and MW-26D is currently in progress. GPC is evaluating the installation of an additional deep well to vertically delineate molybdenum concentrations in the vicinity of these two wells.

Under the current conceptual model, the location of well MW-7 serves to horizontally and vertically delineate molybdenum and lithium groundwater concentrations to below the state and federal GWPS for molybdenum in MW-19 and lithium in MW-25D.

5.0 MONITORING PROGRAM STATUS

5.1 Assessment Monitoring Status

Pursuant to 40 CFR 257.96(b), GPC will continue to monitor the groundwater at AP-1 in accordance with the assessment monitoring program regulations of 40 CFR 257.95 while ACM efforts are implemented to address SSL concentrations of arsenic and molybdenum in select AP-1 wells. Pursuant to 40 CFR 257.195(g) (1)(iv), the additional delineation wells will continue to be sampled as part of the ongoing semiannual assessment groundwater monitoring program.

5.2 Assessment of Corrective Measures

The ACM efforts completed during the reporting period covered by this groundwater monitoring and corrective action report are presented in the *Supplemental Semi-Annual Remedy Selection and Design Progress Report* provided in **Appendix D**. The Semi-Annual Progress Report summarizes:

(i) the current conceptual site model applicable to evaluating groundwater corrective measures proposed in the ACM Report (Geosyntec, 2019c);

(ii) the analytical data obtained during supplemental ACM-specific field investigations;

(iii) the status of evaluating applicable corrective measures; and

(iv) the planned activities and anticipated schedule for the following semi-annual reporting period.

GPC will include future Semi-Annual Progress Reports with each groundwater monitoring and corrective action report.

6.0 CONCLUSIONS & FUTURE ACTIONS

This *2019 Annual Groundwater Monitoring & Corrective Action Report* for Plant Hammond AP-1 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 April and September 2019 groundwater monitoring data for AP-1 confirmed the continued presence of SSLs of arsenic in well HGWC-13 and molybdenum in wells HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13.

Based on the most current data from the September 2019 monitoring event, the arsenic SSL in well HGWC-13 is delineated to below current state and federal GWPS within the property boundary by horizontal delineation well MW-19 and vertical delineation well MW-24D.

Molybdenum concentrations in horizontal delineation wells MW-5, MW-6, MW-7, MW-20, and MW-29 are below current state and federal GWPS and therefore delineate this constituent to within the property boundary for wells HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13. Similarly, the molybdenum concentrations in wells MW-24D, MW-25D, and MW-27D are less than the GWPS and therefore vertically delineate molybdenum SSLs in wells HGWC-13, HGWC-11, HGWC-12, and HGWC-8, respectively (the location of MW-25D delineates both HGWC-11 and HGWC-12). Additional data collection to complete a demonstration document for molybdenum in vertical delineation wells associated with well HGWC-7 is currently in progress (i.e., MW-30D). GPC is evaluating the installation of an additional deep well to vertically delineate molybdenum concentrations in the vicinity of HGWC-9 and MW-26D.

GPC will continue to monitor AP-1 groundwater under the assessment monitoring program and proceed with the evaluation of remedies presented in the ACM Report (Geosyntec, 2019b). The initial annual Appendix IV sampling event is scheduled to occur in February 2020, with the first semiannual assessment monitoring event tentatively planned for March 2020.

7.0 REFERENCES

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TABLES

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

Well ID	Hydraulic Location	Installation Date	Northing [1]	Easting [1]	Top of Casing Elevation [2] (ft MSL)	Top of Screen Elevation [2] (ft MSL)	Bottom of Screen Elevation [2] (ft MSL)	Well Depth (ft BTOC) [3]	Screen Interval Length
Compliance Monitoring Well									
HGWA-1	Upgradient	12/3/2014	1550423.69	1940773.31	595.50	573.40	563.40	32.50	10
HGWA-2	Upgradient	12/2/2015	1549796.40	1939845.20	588.18	570.23	560.23	27.95	10
HGWA-3	Upgradient	12/2/2015	1549793.93	1939833.46	588.06	553.19	543.19	44.87	10
HGWC-7	Downgradient	12/3/2015	1549520.39	1942319.97	579.49	561.32	551.32	28.17	10
HGWC-8	Downgradient	12/8/2015	1549114.34	1942392.75	580.08	563.43	553.43	26.65	10
HGWC-9	Downgradient	12/9/2015	1548692.82	1942215.01	580.60	543.62	533.62	46.98	10
HGWC-10	Downgradient	12/8/2015	1548469.50	1941644.41	579.66	566.66	556.66	23.00	10
HGWC-11	Downgradient	12/15/2015	1548477.54	1941146.65	580.96	565.48	555.48	25.78	10
HGWC-12	Downgradient	12/9/2015	1548475.82	1941152.08	581.01	555.33	545.33	35.68	10
HGWC-13[4]	Downgradient	12/10/2015	1548629.32	1940900.36	595.97	560.90	550.90	45.07	10
Groundwater Level Monitoring Piezometer									
AP1A-1	Upgradient	12/15/2015	1550080.50	1941613.87	587.72	576.17	566.17	21.85	10
MW-1	Upgradient	12/2/2014	1549936.35	1941590.63	588.82	568.10	558.10	31.12	10
MW-8	Downgradient	10/29/2014	1548174.39	1940014.36	587.37	565.50	555.50	32.27	10
Delineation Monitoring Well									
MW-5	Downgradient	11/4/2014	1548430.93	1942445.51	581.02	560.60	550.60	30.82	10
MW-6	Downgradient	11/4/2014	1548381.08	1941686.62	581.90	559.30	549.30	33.00	10
MW-7	Downgradient	10/30/2014	1548230.07	1941084.33	577.90	561.50	551.50	26.80	10
MW-19	Downgradient	9/26/2018	1548421.73	1940943.35	580.77	561.20	551.20	29.87	10
MW-20	Downgradient	9/27/2018	1549029.01	1942735.47	579.18	554.82	544.82	34.36	10
MW-24D[4]	Downgradient	11/7/2018	1548637.40	1940900.55	595.88	532.77	522.77	73.11	10
MW-25D	Downgradient	11/6/2018	1548471.80	1941161.62	580.64	527.61	517.61	63.03	10
MW-26D	Downgradient	11/14/2018	1548699.09	1942223.22	580.48	512.57	502.57	77.91	10
MW-27D	Downgradient	11/8/2018	1549103.69	1942391.99	579.74	526.87	516.87	62.97	10
MW-28D	Downgradient	11/13/2018	1549511.13	1942322.32	579.20	531.06	521.06	58.14	10
MW-29	Downgradient	11/13/2018	1549437.24	1942632.41	575.00	556.89	546.89	28.21	10
MW-30D	Downgradient	6/19/2019	1549530.25	1942319.66	578.97	481.57	471.57	107.50	10

Notes:
ft MSL = feet mean sea level
ft BTOC = feet below top of casing
(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.
(2) Elevations referenced to the North Amervican Vertical Datum of 1988 (NAVD88).
(3) Total well depth accounts for sump if data provided on well construction logs.
(4) Well surveyed April 18, 2019.

Table 2

Groundwater Sampling Event Summary for 2019

Plant Hammond AP-1, Floyd County, Georgia

Well ID	Hydraulic Location	Mar 11-15, 2019	Apr 1-8, 2019	July 8, 2019	Sep 23-30, 2019	Nov 25, 2019	Status of Monitoring Well
Purpose of Sampling Event:		**App. IV Annual**	**Assessment**	**Supplemental Delineation**	**Assessment**	**Supplemental Delineation**	
Compliance Monitoring Well							
HGWA-1	Upgradient	S02	A01	--	A02	--	Assessment
HGWA-2	Upgradient	S02	A01	--	A02	--	Assessment
HGWA-3	Upgradient	S02	A01	--	A02	--	Assessment
HGWC-7	Downgradient	S02	A01	--	A02	--	Assessment
HGWC-8	Downgradient	S02	A01	--	A02	--	Assessment
HGWC-9	Downgradient	S02	A01	--	A02	--	Assessment
HGWC-10	Downgradient	S02	A01	--	A02	--	Assessment
HGWC-11	Downgradient	S02	A01	--	A02	--	Assessment
HGWC-12	Downgradient	S02	A01	--	A02	--	Assessment
HGWC-13	Downgradient	S02	A01	--	A02	--	Assessment
Delineation Monitoring Well							
MW-5	Downgradient	S02	A01	--	A02	--	Assessment
MW-6	Downgradient	S02	A01	--	A02	--	Assessment
MW-7	Downgradient	S02	A01	--	A02	--	Assessment
MW-19	Downgradient	S02	A01	--	A02	--	Assessment
MW-20	Downgradient	S02	A01	--	A02	--	Assessment
MW-24D	Downgradient	S02	A01	--	A02	--	Assessment
MW-25D	Downgradient	S02	A01	--	A02	--	Assessment
MW-26D	Downgradient	S02	A01	--	A02	SDE02	Assessment
MW-27D	Downgradient	S02	A01	--	A02	--	Assessment
MW-28D	Downgradient	S02	A01	--	A02	--	Assessment
MW-29	Downgradient	S02	A01	--	A02	--	Assessment
MW-30D	Downgradient	--	--	SDE01	A02	SDE02	Assessment

Notes:

S## = Initial annual Appendix IV sampling event number since program initiation in January 2018.

A## = Semiannual assessment monitoring event number for given reporting year.

SDE##= Supplemental delineation event number

Table 3
Summary of Groundwater Elevations
Plant Hammond AP-1, Floyd County, Georgia

Well ID	Top of Casing Elevation [1] (ft MSL)	Mar 11, 2019		Apr 1, 2019		Sep 23, 2019	
		Depth to Water (ft BTOC)	Groundwater Elevations (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft MSL)
Compliance Monitoring Well Network							
HGWA-1	595.50	6.74	588.76	10.30	585.20	22.17	573.33
HGWA-2	588.18	3.87	584.31	5.51	582.67	12.54	575.64
HGWA-3	588.06	3.46	584.60	5.19	582.87	12.39	575.67
HGWC-7	579.49	3.53	575.96	4.05	575.44	6.81	572.68
HGWC-8	580.08	1.94	578.14	2.25	577.83	6.86	573.22
HGWC-9	580.60	8.48	572.12	12.10	568.50	15.24	565.36
HGWC-10	579.66	6.17	573.49	11.85	567.81	15.16	564.50
HGWC-11	580.96	9.55	571.41	13.59	567.37	16.38	564.58
HGWC-12	581.01	9.71	571.30	13.73	567.28	16.45	564.56
HGWC-13	594.83	16.67	578.16	18.35	576.48	--	--
HGWC-13[2]	595.97	--	--	--	--	23.16	572.81
Groundwater Level Monitoring Piezometer							
AP1A-1	587.72	5.51	582.21	7.02	580.70	12.63	575.09
MW-1	588.82	6.65	582.17	8.17	580.65	13.58	575.24
MW-8	587.37	15.92	571.45	17.84	569.53	20.46	566.91
Delineation Monitoring Well							
MW-5	581.02	10.99	570.03	15.15	565.87	18.10	562.92
MW-6	581.90	10.59	571.31	15.36	566.54	18.28	563.62
MW-7	577.90	8.14	569.76	12.19	565.71	14.75	563.15
MW-19	580.77	7.32	573.45	10.48	570.29	13.49	567.28
MW-20	579.18	8.25	570.93	11.98	567.20	15.74	563.44
MW-24D	594.67	21.00	573.67	24.00	570.67	--	--
MW-24D[2]	595.88	--	--	--	--	28.20	567.68
MW-25D	580.64	9.72	570.92	13.68	566.96	16.34	564.30
MW-26D	580.48	8.55	571.93	12.20	568.28	15.29	565.19
MW-27D	579.74	1.91	577.83	3.16	576.58	6.80	572.94
MW-28D	579.20	3.41	575.79	4.00	575.20	6.74	572.46
MW-29	575.00	3.82	571.18	5.20	569.80	8.94	566.06
MW-30D	578.97	--	--	--	--	6.69	572.28
Surface Water Gauge (ft MSL)							
AP-1	--	--	584.70	--	584.55	--	579.30
Coosa River	--	--	571.00	--	565.00	--	562.50

Notes:
-- = not applicable
ft MSL = feet mean sea level
ft BTOC = feet below top of casing
(1) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).
(2) Survey data recorded April 18, 2019.

Table 4

Groundwater Gradient and Flow Velocity Calculations for 2019

Plant Hammond AP-1, Floyd County, Georgia

	Mar 11, 2019				Apr 1, 2019				Sep 23, 2019				
Flow Path Direction [1]	**h_1 (ft)**	**h_2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**h_1 (ft)**	**h_2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**h_1 (ft)**	**h_2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**Average Δh/Δl (ft/ft)**
Southerly Flow Path	582	571.31	244	0.044	580	566.54	240	0.056	574	563.62	218	0.048	0.049
Easterly Flow Path	582	570.93	425	0.026	580	567.20	388	0.033	574	563.44	370	0.029	0.029

			Averaged for 2019		
Flow Path Direction [1]	**K (ft/d)**	**n**	**Δh/Δl (ft/ft)**	**V (ft/d)[2]**	**V (ft/d)[3]**
Southerly Flow Path	11.82	0.15	0.049	3.9	3.1
Easterly Flow Path	11.82	0.15	0.029	2.3	

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

ft/yr = feet per year

h_1, h_2 = point of interpreted groundwater elevation

Δh/Δl = hydraulic gradient

K = hydraulic conductivity

Δl = distance between location 1 and 2

n = effective porosity

V = groundwater flow velocity

(1) Flow path direction relative to the orientation of AP-1 and illustrated on Figures 3, 4, and 5 of associated report.

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

(3) Average groundwater flow velocity for unit.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-1, Floyd County, Georgia

	Well ID:	HGWA-1	HGWA-1	HGWA-1	HGWA-2	HGWA-2	HGWA-2	HGWA-3	HGWA-3	HGWA-3	HGWC-10	HGWC-10	HGWC-10	HGWC-11	HGWC-11	HGWC-11
	Sample Date:	3/12/2019	4/2/2019	9/23/2019	3/12/2019	4/2/2019	9/23/2019	3/12/2019	4/1/2019	9/23/2019	3/13/2019	4/3/2019	9/27/2019	3/13/2019	4/3/2019	9/27/2019
	Parameter (1,2,3)															
APPENDIX III	Boron*	--	ND (0.016 J)	ND (0.021 J)	--	ND (0.034 J)	ND (0.040 J)	--	ND (0.0066 J)	ND (0.0081 J)	--	0.66	1.0	--	0.23	0.53
	Calcium*	--	132	118	--	ND (22.5 J)	19.5	--	80.5	71.0	--	137	157	--	112	113
	Chloride*	--	20.3	17.7	--	5.8	5.1	--	6.5	5.9	--	49.3	49.9	--	4.6	27.9
	Fluoride*	ND (0.29 J)	ND (0.10 J)	ND (0.078 J)	ND (0.038 J)	ND (0.071 J)	ND	ND (0.072 J)	ND (0.029 J)	ND	ND (0.17 J)	ND (0.082 J)	ND (0.17 J)	0.51	0.43	0.42
	pH*	7.03	6.86	7.02	5.42	5.41	5.33	7.29	7.16	7.30	6.70	6.55	6.64	5.92	5.69	5.75
	Sulfate*	--	84.3	70.2	--	48.7	47.2	--	50.4	43.9	--	159	181	--	298	ND
	TDS*	--	452	442	--	133	129	--	284	268	--	525	624	--	483	528
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic+	ND	ND	ND (0.00046 J)	ND (0.00069 J)	ND	ND (0.00067 J)	ND (0.00063 J)	ND	ND (0.0011 J)	ND	ND	ND	ND (0.0024 J)	ND (0.00094 J)	ND (0.0018 J)
	Barium	0.042	0.040	0.042	0.12	0.13	0.13	0.13	0.13	0.13	0.044	0.076	0.078	0.024	0.023	0.033
	Beryllium	ND	ND	ND	ND (0.00017 J)	ND (0.00015 J)	ND (0.00011 J)	ND	ND	ND	ND	ND	ND	ND (0.00010 J)	ND (0.00017 J)	ND (0.000086 J)
	Cadmium	ND	ND	ND	ND (0.00013 J)	ND (0.00015 J)	ND	ND	ND	ND	ND	ND (0.0001 J)	ND	ND	ND (0.000096 J)	ND
	Chromium	ND	ND	ND	ND	ND (0.0079 J)	ND (0.00058 J)	ND	ND	ND	ND	0.020	ND	ND	ND	ND
	Cobalt	ND	ND	ND	0.017	0.019	0.038	ND	ND	ND	ND	ND	ND	ND (0.00098 J)	ND (0.0018 J)	ND (0.00071 J)
	Fluoride	ND (0.29 J)	ND (0.10 J)	ND (0.078 J)	ND (0.038 J)	ND (0.071 J)	ND	ND (0.072 J)	ND (0.029 J)	ND	ND (0.17 J)	ND (0.082 J)	ND (0.17 J)	0.51	0.43	0.42
	Lead	ND	ND	ND (0.000078 J)	ND	ND	ND (0.000092 J)	ND	ND	--	ND	--	--	ND	--	--
	Lithium	ND (0.0010 J)	ND (0.0010 J)	ND (0.0011 J)	ND (0.0018 J)	ND (0.0018 J)	ND (0.0016 J)	ND (0.0032 J)	ND (0.0032 J)	ND (0.0029 J)	ND	ND	ND	ND	ND	ND
	Mercury	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--
	Molybdenum+	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.0021 J)	ND (0.0014 J)	0.012	0.010	0.016
	Comb. Radium 226/228	0.327 U	0.739 U	0.306 U	0.454 U	0.651 U	1.04 U	1.01 U	0.760 U	0.384 U	1.19 U	1.82 U	1.16 U	0.584 U	0.360 U	1.78
	Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.0015 J)	ND	ND	0.023	0.016	0.013
	Thallium	ND	ND	ND	ND	ND	ND	ND	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)
ND = Indicates the parameter was not detected above the analytical MDL
TDS = total dissolved solids
U = Indicates the parameter was not detected above the analytical MDL (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. The pH value presented was recorded at the time of sample collection in the field.
(3) Appendix III parameters with a "*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April and September 2019 assessment monitoring event.
(4) Well is designated a delineation monitoring well.
(5) Value J-flagged by laboratory due to an elevated dilution factor required to process the sample. The result is above the RL of 0.1 mg/L for a dilution factor of 1.
(6) Value J-flagged by laboratory. The result is above the UPL of 0.234 mg/L.The concentration reported for the September 2019 event is consistent with historical data and therefore deemed an exceedance in spite of the assigned J-flag.

Table 5

Summary of Groundwater Analytical Data

Plant Hammond AP-1, Floyd County, Georgia

	Well ID:	HGWC-12	HGWC-12	HGWC-12	HGWC-13	HGWC-13	HGWC-13	HGWC-7	HGWC-7	HGWC-7	HGWC-8	HGWC-8	HGWC-8	HGWC-9	HGWC-9	HGWC-9	MW-5[4]	MW-5[4]	MW-5[4]
	Sample Date:	3/14/2019	4/3/2019	9/27/2019	3/13/2019	4/5/2019	9/26/2019	3/13/2019	4/2/2019	9/25/2019	3/12/2019	4/3/2019	9/24/2019	3/13/2019	4/3/2019	9/27/2019	3/13/2019	4/3/2019	9/25/2019
	Parameter (1,2,3)																		
APPENDIX III	Boron*	--	1.8	2.1	--	0.86 J [5]	1.7	--	0.99	1.1	--	2.8	2.8	--	2.3	2.9	--	ND (0.030 J)	0.11
	Calcium*	--	114	153	--	77.1	195	--	101	105	--	125	113	--	164	175	--	82	105
	Chloride*	--	62.8	81.0	--	36.4	109	--	55.5	49.8	--	91.6	60.2	--	130	126	--	1.8	35.9
	Fluoride*	1.1	ND (0.30 J)	ND (0.26 J)	0.78	0.83	0.64	ND (0.12 J)	ND (0.097 J)	ND (0.10 J)	0.58	0.63	0.49	ND (0.14 J)	ND (0.14 J)	ND (0.26 J)	ND (0.10 J)	ND (0.049 J)	ND (0.076 J)
	pH*	7.09	6.96	7.07	7.24	7.24	6.94	7.27	7.27	7.11	6.91	6.85	6.95	7.06	6.88	7.01	6.16	5.96	6.37
	Sulfate*	--	176	198	--	105	444	--	127	109	--	194	133	--	214	214	--	218	134
	TDS*	--	462	653	--	331	1010	--	428	503	--	543	457	--	673	730	--	396	460
APPENDIX IV	Antimony	ND	ND	ND	ND	ND (0.00021 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic+	ND (0.0026 J)	ND (0.0022 J)	0.0061	0.42	0.36	0.44	ND	ND	ND	ND	ND	ND	ND (0.00075 J)	ND	ND (0.00037 J)	ND	ND	ND
	Barium	0.081	0.077	0.096	0.10	0.079	0.11	0.083	0.072	0.061	0.062	0.066	0.053	0.10	0.12	0.11	0.056	0.049	0.046
	Beryllium	ND	ND	ND	ND (0.000062 J)	ND	ND (0.00011 J)	ND	ND	ND	ND	ND (0.000074 J)	ND	ND	ND	ND	ND	ND	ND
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.00020 J)	ND (0.00032 J)	ND (0.00020 J)	ND	ND	ND	ND	ND	ND
	Chromium	ND (0.0025 J)	ND	ND	ND	ND	ND	ND	ND	0.071	ND	ND	ND	ND	ND	ND	ND (0.0030 J)	ND (0.0030 J)	ND (0.0052 J)
	Cobalt	ND (0.0011 J)	ND (0.0011 J)	ND (0.0012 J)	ND (0.0022 J)	ND (0.0017 J)	ND (0.0042 J)	ND (0.00067 J)	ND (0.00069 J)	ND (0.0026 J)	ND (0.002 J)	ND (0.0019 J)	ND (0.0015 J)	ND (0.00065 J)	ND (0.00069 J)	ND (0.00057 J)	ND	ND	ND
	Fluoride	1.1	ND (0.30 J)	0.26 J[6]	0.78	0.83	0.64	ND (0.12 J)	ND (0.097 J)	ND (0.10 J)	0.58	0.63	0.49	ND (0.14 J)	ND (0.14 J)	0.26 J[6]	ND (0.10 J)	ND (0.049 J)	ND (0.076 J)
	Lead	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND (0.0058 J)	ND (0.0066 J)	ND (0.011 J)	ND (0.029 J)	ND (0.023 J)	0.035	ND (0.0024 J)	ND (0.0020 J)	ND (0.0019 J)	ND (0.0025 J)	ND (0.0025 J)	ND (0.0024 J)	ND (0.0040 J)	ND (0.0040 J)	ND (0.0044 J)	ND	ND	ND
	Mercury	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--
	Molybdenum+	0.046	0.049	0.052	0.033	0.030	0.026	0.040	0.041	0.047	0.50	0.50	0.54	0.028	0.030	0.033	ND	ND	ND
	Comb. Radium 226/228	0.992 U	0.734 U	0.958 U	0.390 U	0.422 U	0.939 U	0.403 U	0.865 U	0.884 U	0.544 U	0.885 U	1.30	1.00 U	0.156 U	0.428 U	0.621 U	0.932 U	0.798 U
	Selenium	ND	ND	ND	ND	ND (0.00018 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.0033 J)	ND (0.0027 J)	ND (0.0021 J)
	Thallium	ND	ND	ND (0.000088 J)	ND (0.00039 J)	ND (0.00034 J)	ND (0.00039 J)	ND	ND	ND	ND	ND	ND (0.00011 J)	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)

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

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical MDL (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. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April and September 2019 assessment monitoring event.

(4) Well is designated a delineation monitoring well.

(5) Value J-flagged by laboratory due to an elevated dilution factor required to process the sample. The result is above the RL of 0.1 mg/L for a dilution factor of 1.

(6) Value J-flagged by laboratory. The result is above the UPL of 0.234 mg/L.The concentration reported for the September 2019 event is consistent with historical data and therefore deemed an exceedance in spite of the assigned J-flag.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-1, Floyd County, Georgia

	Well ID:	MW-6[4]	MW-6[4]	MW-6[4]	MW-7[4]	MW-7[4]	MW-7[4]	MW-19[4]	MW-19[4]	MW-19[4]	MW-20[4]	MW-20[4]	MW-20[4]	MW-24D[4]	MW-24D[4]	MW-24D[4]	MW-25D[4]	MW-25D[4]	MW-25D[4]
	Sample Date:	3/13/2019	4/3/2019	9/26/2019	3/13/2019	4/3/2019	9/26/2019	3/14/2019	4/3/2019	9/27/2019	3/13/2019	4/2/2019	9/25/2019	3/13/2019	4/8/2019	9/26/2019	3/14/2019	4/3/2019	9/27/2019
	Parameter (1,2,3)																		
APPENDIX III	Boron*	--	0.67	0.93	--	0.094	0.26	--	0.63	0.58	--	0.11	0.091	--	0.47 J [5]	0.49	--	0.37	0.36
	Calcium*	--	178	189	--	50.2	83.9	--	74.9	90.0	--	109	113	--	83	83.1	--	25.4	26.4
	Chloride*	--	60.9	64.9	--	5.6	15.6	--	19.5	46.2	--	27.5	25.7	--	43.3	39.7	--	32.0	36.2
	Fluoride*	ND (0.19 J)	ND (0.15 J)	ND (0.19 J)	ND (0.069 J)	ND	ND (0.17 J)	0.35	ND (0.19 J)	0.53	ND (0.072 J)	ND	ND	ND (0.074 J)	ND (0.048 J)	ND (0.18 J)	2.2	1.6	1.5
	pH*	6.86	6.77	6.76	6.37	6.19	6.50	6.48	6.14	6.33	6.75	6.70	6.75	7.58	7.47	7.50	7.67	7.56	7.57
	Sulfate*	--	228	225	--	75.3	129	--	105	170	--	122	112	--	97.3	91.0	--	53.0	48.0
	TDS*	--	437	735	--	213	383	--	310	442	--	435	461	--	323	360	--	ND (15.0 J)	409
APPENDIX IV	Antimony	ND	ND	ND	ND (0.00086 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic+	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.0023 J)	ND	ND	ND	ND	ND	ND (0.0019 J)	ND	ND (0.0011 J)
	Barium	0.10	0.090	0.089	0.063	0.058	0.066	0.060	0.050	0.068	0.087	0.080	0.085	0.053	0.043	0.12	0.44	0.38	0.39
	Beryllium	ND	ND	ND	ND	ND (0.000051 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.00013 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	ND	ND	ND	ND	ND (0.0023 J)	ND (0.0013 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.00042 J)	ND	ND	ND
	Cobalt	ND (0.00055 J)	ND	ND (0.00036 J)	ND	ND	ND	0.025	0.036	0.033	ND (0.0011 J)	ND	ND	ND	ND (0.00025 J)	ND (0.0011 J)	ND	ND	ND
	Fluoride	ND (0.19 J)	ND (0.15 J)	ND (0.19 J)	ND (0.069 J)	ND	ND (0.17 J)	0.35	ND (0.19 J)	0.53	ND (0.072 J)	ND	ND	ND (0.074 J)	ND (0.048 J)	ND (0.18 J)	2.2	1.6	1.5
	Lead	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--
	Lithium	ND	ND	ND	ND	ND	ND	ND (0.0089 J)	ND (0.0061 J)	ND (0.013 J)	ND (0.0016 J)	ND (0.0015 J)	ND	ND (0.0029 J)	ND (0.0027 J)	ND (0.0030 J)	0.050	ND (0.047 J)	0.047
	Mercury	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--
	Molybdenum+	ND (0.0021 J)	ND (0.0021 J)	ND (0.0026 J)	ND	ND	ND (0.0033 J)	0.057	0.040	0.063	ND	ND	ND	ND	ND (0.00027 J)	ND	ND (0.0022 J)	ND	ND
	Comb. Radium 226/228	2.07	0.872 U	0.745 U	1.23	1.05 U	0.947 U	0.347 U	0.884 U	0.534 U	0.538 U	1.02 U	1.35 U	0.311 U	0.573 U	0.878 U	1.28 U	0.662 U	0.945 U
	Selenium	ND	ND	ND	ND (0.0016 J)	ND	ND (0.0014 J)	ND	ND (0.0070 J)	ND (0.0013 J)	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.00027 J)	ND	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)
ND = Indicates the parameter was not detected above the analytical MDL
TDS = total dissolved solids
U = Indicates the parameter was not detected above the analytical MDL (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. The pH value presented was recorded at the time of sample collection in the field.
(3) Appendix III parameters with a "*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April and September 2019 assessment monitoring event.
(4) Well is designated a delineation monitoring well.
(5) Value J-flagged by laboratory due to an elevated dilution factor required to process the sample. The result is above the RL of 0.1 mg/L for a dilution factor of 1.
(6) Value J-flagged by laboratory. The result is above the UPL of 0.234 mg/L.The concentration reported for the September 2019 event is consistent with historical data and therefore deemed an exceedance in spite of the assigned J-flag.

Table 5

Summary of Groundwater Analytical Data

Plant Hammond AP-1, Floyd County, Georgia

	Well ID:	MW-26D[4]	MW-26D[4]	MW-26D[4]	MW-26D[4]	MW-27D[4]	MW-27D[4]	MW-27D[4]	MW-28D[4]	MW-28D[4]	MW-28D[4]	MW-29[4]	MW-29	MW-29[4]	MW-30D[4]	MW-30D[4]	MW-30D[4]
	Sample Date:	3/13/2019	4/3/2019	9/26/2019	11/25/2019	3/13/2019	4/42019	9/26/2019	3/12/2019	4/2/2019	9/26/2019	3/12/2019	4/2/2019	9/24/2019	7/8/2019	9/24/2019	11/26/2019
	Parameter (1,2,3)																
APPENDIX III	Boron*	--	1.5	2.0	--	--	(0.12 J) [5]	0.14	--	0.17	0.60	--	1.2	1.2	--	0.69	--
	Calcium*	--	122	158	--	--	26.3	32.1	--	64.6	84.0	--	131	140	--	34.2	--
	Chloride*	--	90.6	118	--	--	26.9	31.8	--	44	43.5	--	80.9	83.8	--	99.2	--
	Fluoride*	ND (0.052 J)	ND (0.044 J)	ND (0.19 J)	--	ND (0.28 J)	ND (0.26 J)	0.42	ND (0.24 J)	ND (0.18 J)	ND (0.22 J)	ND (0.07 J)	ND (0.045 J)	ND (0.18 J)	--	5.7	10.3
	pH*	7.40	7.25	7.16	--	7.78	7.63	7.56	7.46	7.40	7.40	7.20	6.91	6.86	8.07	7.85	--
	Sulfate*	--	131	189	--	--	11.8	15.6	--	67.7	96.2	--	151	154	--	756	--
	TDS*	--	493	643	--	--	203	265	--	350	418	--	548	603	--	1970	--
APPENDIX IV	Antimony	ND	ND	ND	--	ND	ND (0.00016 J)	ND (0.00030 J)	ND	ND	ND	ND	ND	ND	--	ND (0.00046 J)	--
	Arsenic+	ND	ND	ND	--	ND	ND (0.0002 J)	ND	ND	ND	ND	ND	ND	ND	--	ND (0.0026 J)	--
	Barium	0.099	0.12	0.12	--	1.5	1.2	0.95	0.82	0.37	0.15	0.089	0.078	0.081	--	0.054	--
	Beryllium	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	--
	Cadmium	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	--
	Chromium	ND	ND	ND (0.00076 J)	--	ND	ND	ND	ND	ND	ND (0.00081 J)	ND	ND	ND	--	ND (0.00041 J)	--
	Cobalt	ND	ND	ND (0.00053 J)	--	ND	ND (0.000091 J)	ND	ND	ND	ND	ND (0.00057 J)	ND (0.00084 J)	ND (0.0015 J)	--	ND	--
	Fluoride	ND (0.052 J)	ND (0.044 J)	ND (0.19 J)	--	ND (0.28 J)	ND (0.26 J)	0.42	ND (0.24 J)	ND (0.18 J)	ND (0.22 J)	ND (0.07 J)	ND (0.045 J)	ND (0.18 J)	--	5.7	10.3
	Lead	ND	--	--	--	ND	--	--	ND	--	--	ND	--	--	--	--	--
	Lithium	ND (0.0033 J)	ND (0.0034 J)	ND (0.0041 J)	--	ND (0.0097 J)	ND (0.0069 J)	ND (0.0055 J)	ND (0.011 J)	ND (0.0052 J)	ND (0.0055 J)	ND (0.0024 J)	ND (0.0021 J)	ND (0.0022 J)	--	0.16	0.23
	Mercury	ND	--	--	--	ND	--	--	ND	--	--	ND	--	--	--	--	--
	Molybdenum+	ND	ND (0.0083 J)	0.017	0.020	ND	ND (0.0018 J)	ND (0.0042 J)	0.013	0.028	0.017	ND (0.0038 J)	ND (0.0028 J)	ND (0.0021 J)	0.022	0.036	0.041
	Comb. Radium 226/228	0.627 U	0.205 U	0.912 U	--	1.81	1.33	0.974 U	0.926 U	0.479 U	0.997 U	1.37	0.620 U	0.675 U	--	1.16	--
	Selenium	ND	ND	ND	--	ND	ND (0.00012 J)	ND	ND	ND	ND	ND	ND	ND	--	ND	--
	Thallium	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.000064 J)	--	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)

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

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical MDL (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. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April and September 2019 assessment monitoring event.

(4) Well is designated a delineation monitoring well.

(5) Value J-flagged by laboratory due to an elevated dilution factor required to process the sample. The result is above the RL of 0.1 mg/L for a dilution factor of 1.

(6) Value J-flagged by laboratory. The result is above the UPL of 0.234 mg/L.The concentration reported for the September 2019 event is consistent with historical data and therefore deemed an exceedance in spite of the assigned J-flag.

Table 6

Summary of Background Concentrations and Groundwater Protection Standards
Plant Hammond AP-1, Floyd County, Georgia

Analyte	Units	Background[1]	Federal GWPS[2]	State GWPS[3]
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.14	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.001, 0.003	0.005	0.005
Chromium	mg/L	0.01	0.1	0.1
Cobalt	mg/L	0.029, 0.038	0.029, 0.038	0.029, 0.038
Fluoride	mg/L	0.36	4	4
Lead	mg/L	0.005	0.015	0.005
Lithium	mg/L	Federal 0.025[4], 0.03 State 0.05, 0.03	0.04	0.05, 0.03
Mercury	mg/L	0.0005	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	1.34, 1.33	5	5

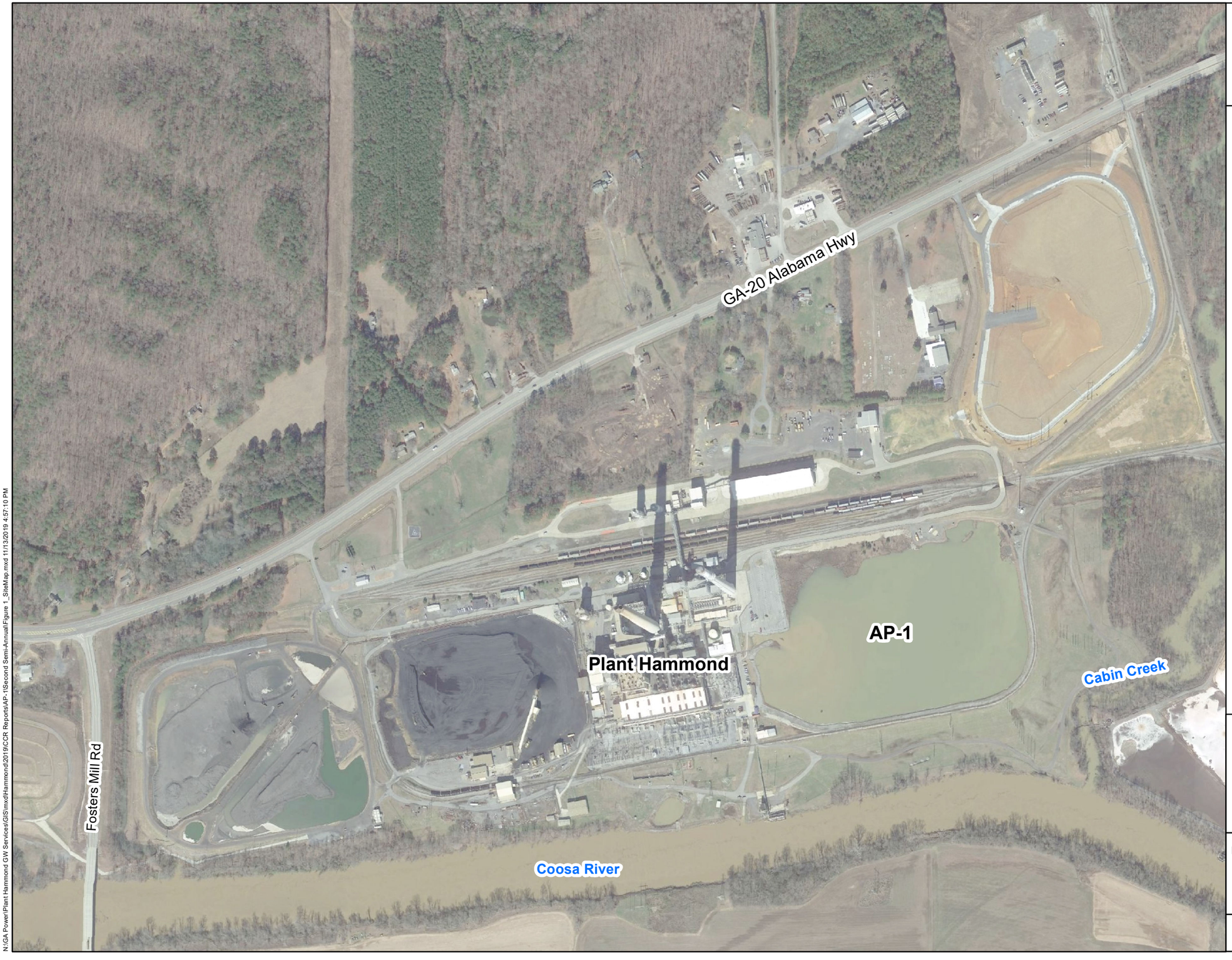
Notes:

"mg/L" = milligrams per liter

"pCi/L" = picocuries per liter

1. The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a). Where two numbers are present, they denote the different background levels for each of the two semiannual monitoring events in the order that they were determined.
2. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under 141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS is used; or (iii) background concentrations for constituents were the background level is higher than the MCL or rule-specified GWPS.
3. Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents were the background level is higher than the MCL. Where two numbers are present, they denote the different background levels for each of the two semiannual monitoring events in the order that they were determined.
4. The background tolerance limit (TL) used to evaluate GWPS for this analyte equals half the laboratory specified reporting limit (RL). Per the Statistical Analysis Plan (SAP), and in accordance with the Unified Guidance, a non-parametric TL approach was used since the data set contained greater than 50% non-detect (ND) results for this analyte. Under this approach, the TL equals the highest value reported, for which is the laboratory RL. Since a RL may be influenced due to sample matrix interference at the time of analysis, half the RL was applied in this select case.

FIGURES



N

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

0 250 500 1,000
SCALE IN FEET

SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | JANUARY 2020

FIGURE 1

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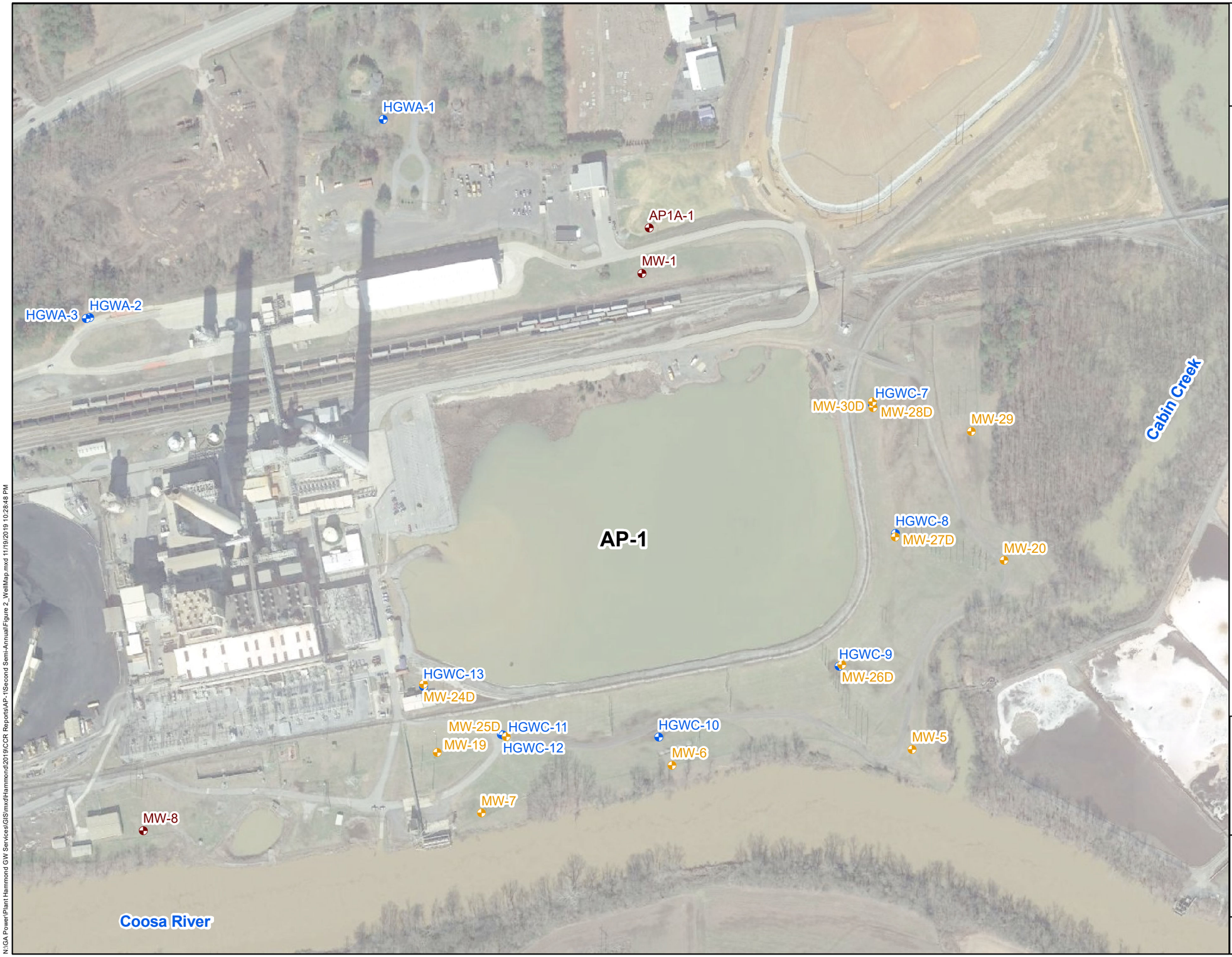
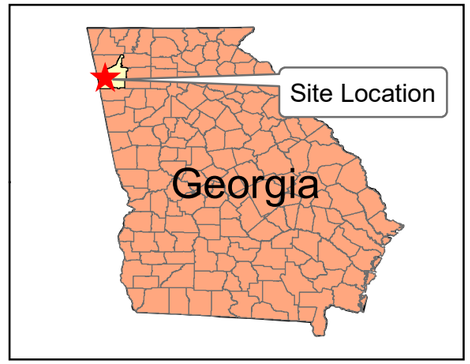


N

LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer



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

0 150 300 600

SCALE IN FEET

MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | JANUARY 2020

FIGURE 2

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-1\Second Semi-Annual\Figure 2_WellMap.mxd 11/19/2019 10:28:48 PM

HGWA-1
588.76

AP1A-1
582.21

MW-1
582.17

HGWA-3
584.60

HGWA-2
584.31

584

HGWC-7
575.96

MW-28D
(575.79)

MW-29
571.18

Cabin Creek

HGWC-8
578.14

MW-27D
(577.83)

MW-20
570.93

AP-1

AP-1
584.70

582

580

578

576

574

572

MW-24D
(573.67)

HGWC-13
578.16

HGWC-11
571.41

HGWC-10
573.49

HGWC-9
572.12

MW-26D
(571.93)

MW-19
573.45

MW-25D
(570.92)

HGWC-12
571.30

MW-6
571.31

MW-5
570.03

MW-8
571.45

MW-7
569.76

River
571.00

Coosa River

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-1\Second Semi-Annual\Figure 3_POT Map_March2019_AP1.mxd 11/19/2019 11:07:25 PM

N

LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer
- Surface Water Staff Gauge
- Groundwater Elevation Iso-Contour (inferred where dashed)
- Approximate Groundwater Flow Direction

Notes:

1. Water level elevation recorded on March 11, 2019. Surface water level elevation recorded on March 14, 2019. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.
2. Water elevation in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
3. The AP-1 surface water staff gauge measurement was not used in development of groundwater contours.
4. Aerial photograph source: Google Earth Pro, February 2018.

0 150 300 450 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - MARCH 2019

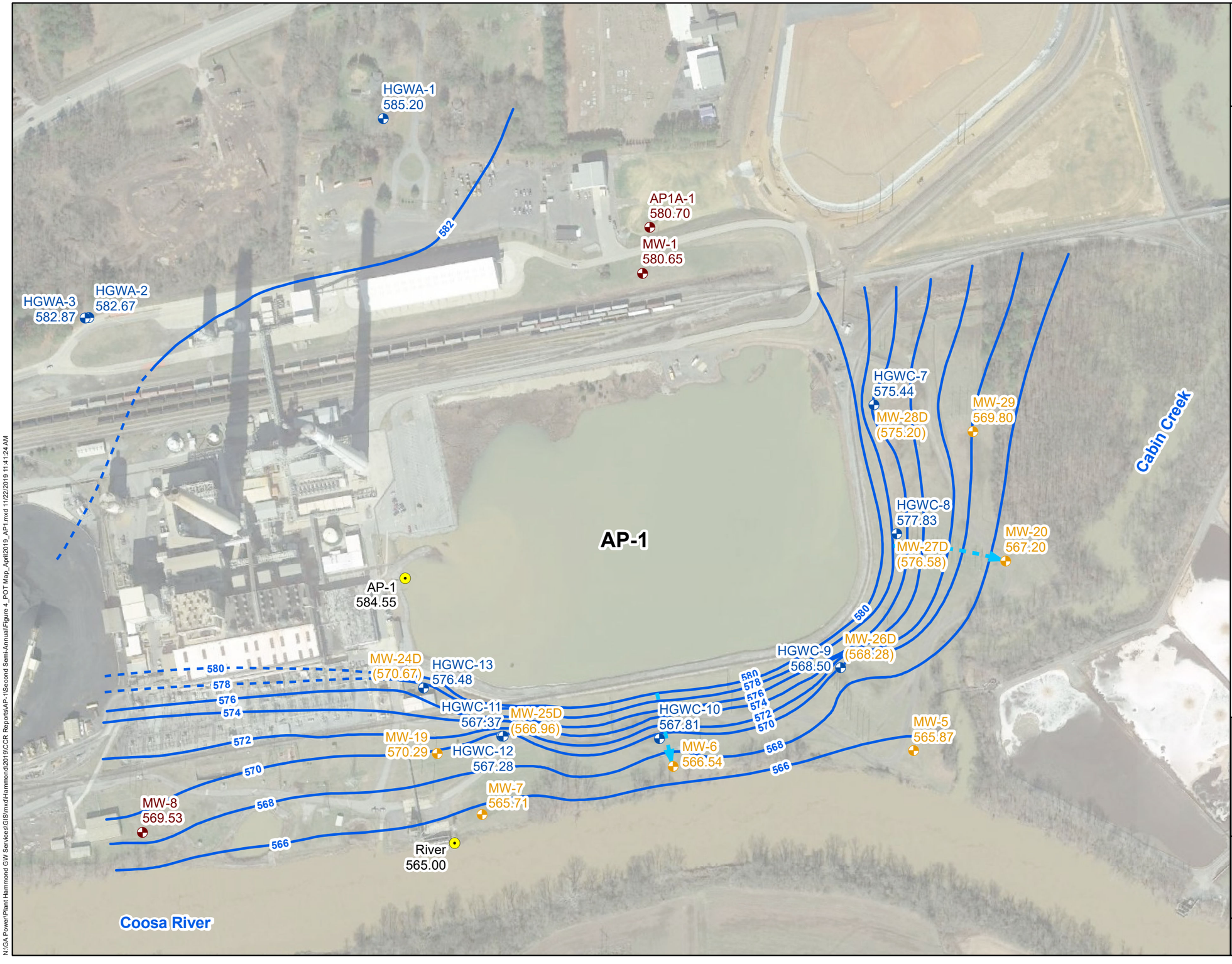
GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | JANUARY 2020

FIGURE 3



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N

LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer
- Surface Water Staff Gauge
- Groundwater Elevation Iso-Contour (inferred where dashed)
- 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. Water elevation in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
3. The AP-1 surface water staff gauge measurement was not used in development of groundwater contours.
4. Aerial photograph source: Google Earth Pro, February 2018.

0 150 300 450 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - APRIL 2019

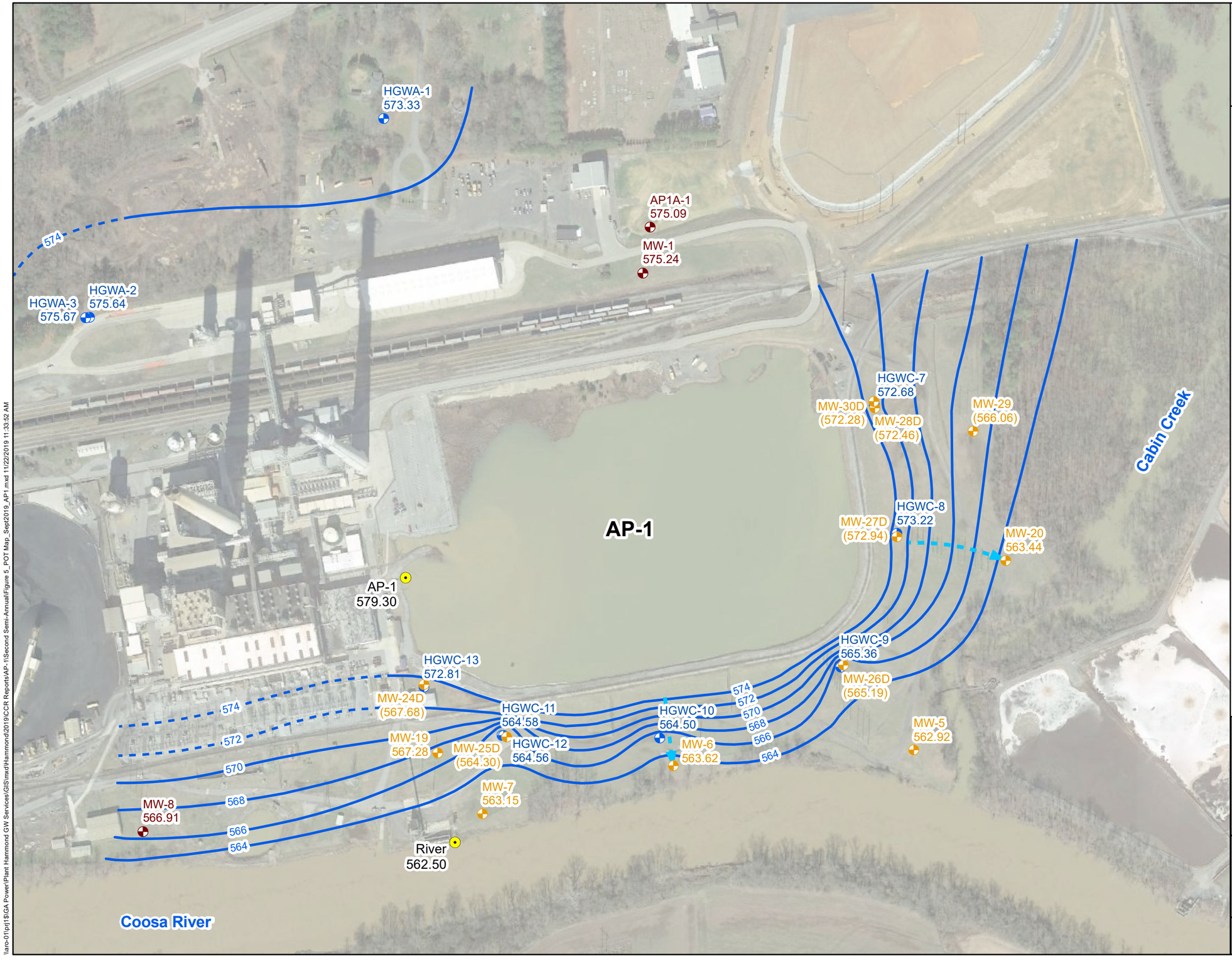
GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | JANUARY 2020

FIGURE 4



N

LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer
- Surface Water Staff Gauge
- Groundwater Elevation Iso-Contour (inferred where dashed)
- Approximate Groundwater Flow Direction

Notes:
1. Water level elevation recorded on September 23, 2019. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88
2. Water elevation in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
3. The AP-1 surface water staff gauge measurement was not used in development of groundwater contours.
4. Aerial photograph source: Google Earth Pro, February 2018.

0 150 300 450 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - SEPTEMBER 2019

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | JANUARY 2020

FIGURE 5

\\aro-01\prj1$\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-1\Second Semi-Annual\Figure 5_POT Map_Sept2019_AP1.mxd 11/22/2019 11:33:52 AM

APPENDIX A

Well Design, Installation, and Development Report – Addendum, Plant Hammond Ash Pond 1 (AP-1)

Prepared for

Georgia Power Company
241 Ralph McGill Blvd NE
Atlanta, Georgia 30308

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT – ADDENDUM No. 2

PLANT HAMMOND ASH POND 1 (AP-1)

Prepared by

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

January 2020

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT – ADDENDUM No .2

Plant Hammond
Ash Pond 1
January 29, 2020

Whitney Law, P.E.
Project Manager
Geosyntec Consultants

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LIST OF ACRONYMS

AP	Ash Pond
ASTM	American Society for Testing and Materials
CCR	coal combustion residual
CFR	Code of Federal Regulations
CFS	Civil Field Services
DO	dissolved oxygen
ft MSL	feet mean sea level
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
NAD	North America Datum
NAVD	North American Vertical Datum
NSF	National Sanitation Foundation
ORP	oxygen reduction potential
PVC	polyvinyl chloride
SCS	Southern Company Services
TOC	top of casing
US EPA	United States Environmental Protection Agency

1. INTRODUCTION

This report provides details regarding the design, installation, and development of one groundwater monitoring well, MW-30D, to supplement the current groundwater monitoring system at Georgia Power Company (GPC) Plant Hammond (Site) Ash Pond 1 (AP-1). Well MW-30D will be used as a groundwater delineation monitoring well and supplements the current AP-1 delineation monitoring well network. The report was prepared as an addendum to the *Well Design, Installation, Development, and Decommissioning Report – Plant Hammond Ash Ponds 1 and 2* (ERM, 2017) and meets the requirements promulgated in the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D], specifically 40 CFR §257.91(e)(1).

Plant Hammond is located in Floyd County, approximately 10 miles west of Rome, Georgia. Accounting for MW-30D, the groundwater monitoring system at AP-1 includes ten wells associated with the certified CCR compliance monitoring well network, twelve wells associated with the delineation well network, and a network of secondary groundwater level monitoring piezometers specific to AP-1. The locations of these wells and piezometers are shown on **Figure 1**. Details regarding the installation of the certified compliance well network are presented in the above referenced ERM report, whereas details regarding the installation of the delineation wells are provided in the initial addendum prepared by Geosyntec Consultants (Geosyntec) (Geosyntec, 2019).

2. DRILLING AND WELL INSTALLATION

Well installation and development activities were performed according to accepted industry standards and application of the USEPA Region 4 Science and Ecosystem Support Division (SESD) *Operating Procedure for Design and Installation of Monitoring Wells* (USEPA, SESDGUID-101-R1) as a general guide for best practices. Well drilling, installation, and surface completion activities were performed by Cascade Drilling Inc. (Cascade) of Midland, North Carolina under contact with, and the supervision of, Southern Company Services (SCS) Civil Field Services (CFS) personnel. In accordance with the Georgia Water Well Standards Act, the driller was required to have an insurance bond on file with the State of Georgia at the time of drilling. A copy of this bond is provided in **Appendix A**. A professional geologist (PG) employed with Geosyntec and registered to practice in the State of Georgia oversaw the drilling and installation efforts to document the boring and well, to record observations, soil and rock descriptions, subsurface stratigraphy, water elevations, and other field activities. Geosyntec was also responsible for the development of the well.

One well, MW-30D, was installed in AP-1 in June 2019. The location of this well is shown on **Figure 1**. Well construction details are provided in **Table 1**; boring and well construction logs are included in **Appendix B**.

2.1 Drilling Method

Prior to any intrusive work, CFS personnel cleared the borehole to approximately 10 feet below ground surface (ft bgs) using hydro excavation methods (i.e., "air knife").

Drilling methods used for borehole advancement were rotosonic drilling techniques with continuous core collection. A Geoprobe 8140LC rig equipped with a rotosonic drill head installed the well. The rig used 6-inch sonic drill rods to advance the borehole. The continuous core samples were logged in the field for lithologic properties by the overseeing PG.

Drill cuttings and bedrock cores were managed by CFS personnel for eventual off-site storage or disposal.

2.2 Screened Interval

Well MW-30D is screened in the uppermost water bearing unit from approximately 482 to 472 feet mean sea level (ft MSL) [referenced to the North American Vertical Datum of 1988 (NAVD88)]. The well is constructed with a 10-foot long well screen.

2.3 Well Casings and Screens

The well was constructed of 2-inch inner diameter Schedule 40 polyvinyl chloride (PVC) casing with flush-threaded fittings. The well was installed with a 10-foot nominal length pre-packed dual-wall well screen with 0.010-inch slots. The casings and pre-packed screens arrived pre-cleaned and packaged by the manufacturer. Well construction materials are sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. Casing and screens are flush-threaded. Solvent or glue was not used to construct the wells. A threaded bottom cap was attached to the bottom of the screen. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF) rated. Well screen interval details are provided in **Table 1**.

2.4 Well Intake Design

The well was designed and constructed to: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the wells; and (3) ensure sufficient structural integrity to prevent collapse of the well. The annular space between the face of the formation and the screen was filled to minimize passage of formation materials into the wells. A filter pack of clean, well-rounded, quartz sand was installed in each well. The 0.010-inch slot size was selected to minimize the inflow of formation material without impairing influent groundwater flow.

2.5 Filter Pack

Highly Pure Quartzite of Southern Products & Silica Co. silica sand filter pack was used as the appropriate gradation for all wells. Highly Pure Quartzite meets the ASTM D5092 uniformity coefficient specification of 2.5 or less, with a uniformity coefficient of 1.6.

Filter pack material was placed within the pre-packed dual-wall well screen and in the annular space between the outside of the pre-pack screen and borehole wall to ensure an adequate thickness of filter pack material between the well and the formation. Filter pack material placed in the annular space outside of the well screen extended approximately 2 feet above the top of screen. No bridging occurred during filter pack placement.

Upon placement of the filter pack, the well was pumped with a submersible pump to assure settlement of the filter pack. The top of filter pack depth was measured following pumping to ensure appropriate extension of filter sand above the screen. The depth of top of filter pack was measured and recorded on the well construction log provided in **Appendix B**.

2.6 Annular Seal

Eighty-two feet of bentonite chips (PelPlug and HolePlug non-coated 3/8" bentonite chips) was placed immediately above the filter pack by gravity-pouring into the annular space and hydrated per manufacture's specifications. A tremie pipe was used to probe the annular space to ensure that no bridging occurred. Following the hydration period, the bentonite seal was extended to at least one foot above the residual soil/bedrock contact observed. Since the new well was installed within 15 feet of an existing well, the bentonite seal was also brought above the elevation corresponding to the screen top of the nearby well. This was done to prevent cementitious grout from entering the water-bearing or screen zone. The bentonite was hydrated with potable water for a duration meeting or exceeding the manufacture's specifications prior to grouting the remaining annulus.

The depth of placement of the sand and bentonite in the annular space of the groundwater well was checked frequently with a metal tape to assure that bridging did not occur, and a record was kept of the volumes of materials used.

The annulus above the bentonite seal was grouted with Aqua Guard bentonite grout placed via tremie pipe from the top of the bentonite seal. During grouting, care was taken to assure that the bentonite seal was not disturbed by locating the base of the tremie pipe approximately 2 feet above the bentonite seal and injecting grout at low pressure/velocity. A cement apron 4-feet by 4-feet by 4-inches was poured around each well. The pad is mounded slightly outward to direct surface drainage away from the well.

2.7 Cap and Protective Casing

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

The well is clearly marked with signs with the proper designation. A weep hole was drilled in the outer protective casing near the bottom above the concrete pad. Pea gravel was placed inside the protective casing between the riser pipe and the outer casing. The well is clearly marked with the proper well identification number on the stand-up casing. Construction details are documented on the well construction log provided in **Appendix B**.

3. WELL DEVELOPMENT

The well was developed using a combination of surging and pumping to (1) restore the natural hydraulic conductivity of the formation, and (2) to remove fine-grained sediment to ensure low-turbidity groundwater samples. The well was purged using a combination of a bladder pump, submersible pump, inertial pump, and manual bailing due to elevated initial turbidity. The well was evacuated three times and allowed to recharge before continuing the well development efforts. The well development forms are included in **Appendix C**. Due to equipment issues, field parameters [i.e., turbidity, pH, temperature, conductivity, oxidation-reduction potential (ORP), and dissolved oxygen (DO)] could not be recorded during the well development. However, the field parameter data recorded when the well was initially sampled on July 8, 2019, indicates the well was adequately developed (i.e., stable field parameters and a turbidity of less than 10 NTUs). The groundwater sampling purge log from July 7 is also included in **Appendix C**.

4. SURVEY

Upon completion of the well installation, the horizontal locations and vertical elevations were surveyed by CFS. The survey pin installed at each well pad was surveyed to within +/- 0.5-foot horizontal accuracy. Elevations were also measured to the nearest 0.01-foot on the top of the PVC well casing [top of casing (TOC) elevation] and ground surface adjacent to the well pad. Northings and eastings were recorded in feet relative to the North America Datum of 1983 (NAD). Top of casing and ground surface elevations are in feet relative to NAVD88. Survey data are provided in the well construction tables.

5. REFERENCES

Environmental Resources Management (ERM), 2017. *Well Design, Installation, Development, and Decommissioning Report – Plant Hammond Ash Ponds 1 and 2*. October 2017.

Georgia Environmental Protection Division (GA EPD), Georgia Department of Natural Resources, 1991. *Manual for Groundwater Monitoring*. September 1991.

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United States Environmental Protection Agency. 2015a. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. [EPA-HQ-RCRA–2009–0640; FRL–9919–44–OSWER]. RIN–2050–AE81, April 2015

TABLE

Table 1

Summary of Well Construction Details

Plant Hammond AP-1, Floyd County, Georgia

Well ID	Ash Pond	Purpose	Installation Date	Northing [1]	Easting [1]	Top of Nail Elevation [2] (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Well Depth (ft bgs) [3]
MW-30D	1	Groundwater Monitoring	6/19/2019	1549530.25	1942319.66	576.56	578.96	481.57	471.57	105.00

Notes:

ft MSL = feet mean sea level

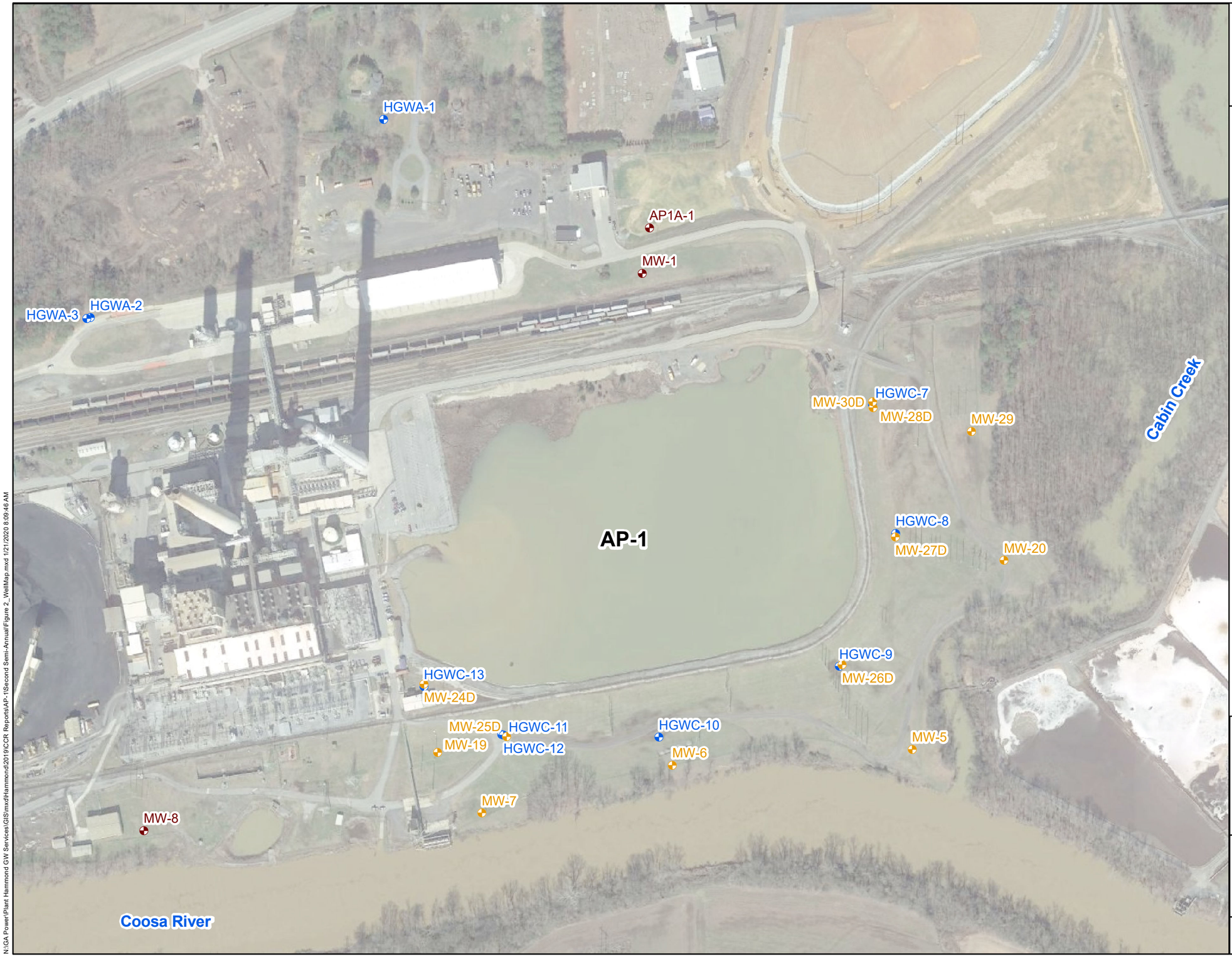
ft bgs = feet below ground surface

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

(2) Elevation referenced to the North American Vertical Datum of 1988 (NAVD88).

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

FIGURE



N

LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer

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

0 150 300 600

SCALE IN FEET

GROUNDWATER MONITORING NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | JANUARY 2020

FIGURE 1

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-1\Second Semi-Annual\Figure 2_WellMap.mxd 1/21/2020 8:09:46 AM

APPENDIX A

Well Driller Performance Bonds

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company , Surety upon

a certain Bond No. 800033976

Issued on 9/27/2017
Expires on 6/30/2019
Renewed on 3/4/2019
Expires on 6/30/2021

dated effective 09/27/2017
(MONTH-DAY-YEAR)

on behalf of Ricky Davis / Cascade Drilling, L.P.
(PRINCIPAL)

and in favor of Department of Natural Resources, State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on 06/30/2019
(MONTH-DAY-YEAR)

and ending on 06/30/2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and 00/100 Dollars ($30,000.00)

Description of bond Performance Bond for Water Well Contractors

Premium: $1200.00

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

Signed and dated on March 4th, 2019
(MONTH-DAY-YEAR)

Atlantic Specialty Insurance Company

By Andrew P. Larsen
Attorney-in-Fact Andrew P. Larsen

Parker, Smith & Feek, Inc.
Agent

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

425-709-3600
Telephone Number of Agent

S-0157/GE 8/08

XDP

APPENDIX B

Boring and Well Construction Log

Geosyntec consultants
engineers | scientists | innovators

Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

MONITORING WELL MW30D

CLIENT Southern Company Services
PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B
PROJECT LOCATION Plant Hammond
DATE STARTED 6/19/19 **COMPLETED** 6/20/19
NORTHING 1549530.24 ft **EASTING** 1942319.6 ft
DRILLER Cascade Drilling
GROUND ELEVATION 576.56 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 578.96 ft
SAMPLING METHOD Core barrel (4")
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Geoprobe 8140LC
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	575			Hydro excavation (0-10') - No sample
10	565			GRAVELLY CLAY, Yellowish brown to dark brown, trace silt and fine sand, angular to subrounded gravel, medium dense, wet, low to medium plasticity.
15	560			CLAY, Pale to dark brown, with partially weathered rock, low to medium plasticity, moist, firm to stiff, trace rock fragments.
25	550			PARTIALLY WEATHERED ROCK (PWR), Pale gray to white limestone, trace white calcite, dry to moist, angular rock fragments, weathered and fractured.
30	545			LIMESTONE, Broken pieces due to sonic drilling, calcite veins, pale to white and dark gray, slightly weathered.
35	540			

CONSTRUCTION DIAGRAM

- Bentonite grout
- Schedule 40 PVC 2"
- Bentonite 3/8" chips

(Continued Next Page)

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1255 Roberts Boulevard
Kennesaw, GA 30144

MONITORING WELL MW30D

CLIENT Southern Company Services **PROJECT NAME** Plant Hammond Well Installation

PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40	535			LIMESTONE, Broken pieces due to sonic drilling, calcite veins, pale to white and dark gray, slightly weathered. *(continued)*	
45	530				
50	525				Bentonite 3/8" chips
55	520				
60	515				
65	510				
70	505				
75	500				
80	495				
85					

(Continued Next Page)

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1255 Roberts Boulevard
Kennesaw, GA 30144

MONITORING WELL MW30D

CLIENT Southern Company Services
PROJECT NAME Plant Hammond Well Installation
PROJECT NUMBER GW6581B
PROJECT LOCATION Plant Hammond

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
90	490			LIMESTONE, Broken pieces due to sonic drilling, calcite veins, pale to white and dark gray, slightly weathered. *(continued)*	
95	485				20/40 Silica Sand
100	480				
105	475				0.010 slot size, Schedule 40 PVC 2" screen
	470			Bottom of borehole at 105.0 feet.	
110	465				
115	460				
120	455				
125	450				
130					

APPENDIX C

Well Development Form

Geosyntec consultants

WELL DEVELOPMENT LOG SHEET

Client: SCS
Site: Plant Hammond
Well ID: MW-30D
Total Depth (ft) (after purge): 106.4
Depth to Water (ft): 63.49
Well Diameter (in): 2
Well Volume (gal) = $0.041 d_2 h$: 10.15
Well Volume (L) = gal * 3.785: 38.45
d = well diameter (inches); h = length of water column (feet)

Project No.: GW6591B
Location: AP-1
Pump Type/Model: Bladder
Tubing Material: Polyethylene
Pump Intake Depth (ft): 104
Start/Stop Purge Time: 9:00 / 15:30
Purge Rate (mL/min): 130
Total Purge Volume (L) (G): 7

Development Date: 6/25/19
Field Personnel Name: Dalton Anderson

Well Type: Flush / (Stick Up)
Well Lock: (Yes) / No
Well Cap Condition: (Good) / Replace
Well Tag Present: (Yes) / No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)(G)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
9:00							63.49	130	1	Started Pumping
10:00			Stopped				73.84	130	2	
										Pump Controller Died
13:30		Started Pumping					73.99	130	1	New Controller
							75.62	130	2	
							76.93	130	3	
							82.31	130	3.5	
							85.94		4	[redacted]
							87.62		6	
17:30						89.9	[redacted]		7	Stopped Pumping
						6/25/19				
					DA					
Stabilizing Criteria	**+/- 0.1 SU**	**+/- 5%**		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		**< 5 NTUs**				

Geosyntec consultants

WELL DEVELOPMENT LOG SHEET

Client: SCS
Site: Hammond
Well ID: MW-30D
Total Depth (ft) (after purge): 1010.9
Depth to Water (ft): 79.3
Well Diameter (in): 2
Well Volume (gal) = 0.041 d_2 h: 12.68
Well Volume (L) = gal * 3.785: 48.02
d = well diameter (inches); h = length of water column (feet)

Project No.: GWC6581B
Location: AP-1
Pump Type/Model: Mega Monsoon
Tubing Material: Polyethylene
Pump Intake Depth (ft): 105
Start/Stop Purge Time: 9:00 / 5:30
Purge Rate (mL/min): Varied
Total Purge Volume (G): 15

Development Date: 6/27/19
Field Personnel Name: Dalton Anderson

Well Type: Flush / (Stick Up)
Well Lock: (Yes) / No
Well Cap Condition: (Good) / Replace
Well Tag Present: (Yes) / No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (G)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
9:00							79.3		1	Started Pumping
10:00							86.93		5	
10:30							104.72		7.5	Well Dry / Stopped Pumping
									—	
15:00							98.37		—	Pumping Started
15:45							97.34		.5	Problem with pump
16:30							95.27		1	Bail by hand
17:30							103.34		Ce	Bailing Stopped
Stabilizing Criteria	**+/- 0.1 SU**	**+/- 5%**		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		**< 5 NTUs**				

DA 6/27/19

Geosyntec consultants

WELL DEVELOPMENT LOG SHEET

Client: SCS
Site: Plant Hammond
Well ID: MW-30D
Total Depth (ft) (after purge): 106.3
Depth to Water (ft): 79.75
Well Diameter (in): 2
Well Volume (gal) = 0.041d_2h: 12.76
Well Volume (L) = gal * 3.785: 48.29
d = well diameter (inches); h = length of water column (feet)

Project No.: GLN65461B
Location: AP-1
Pump Type/Model: Waterra
Tubing Material: Polyethylene
Pump Intake Depth (ft): 105
Start/Stop Purge Time: 9:30/
Purge Rate (mL/min): Varied
Total Purge Volume (G): 14.5

Development Date: 7/2/2019
Field Personnel Name: Dalton Anderson

Well Type: Flush / (Stick Up)
Well Lock: (Yes) / No
Well Cap Condition: (Good) / Replace
Well Tag Present: (Yes) / No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (G)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
9:30		Pumping		started			96.84		1	DTW 96.84
10:14							95.32		6	DTW 95.32
10:27							97.16		8	DTW 97.16
10:46		Pumping Stopped					104.1		3	DTW 104.1
12:27		Pumping Started					95.16		8	DTW 95.16
2:04							105.2		13	DTW 105.2
2:32							101.3		13	DTW 101.3
3:00							101.2		13	DTW 101.2
3:40							101.2		13	DTW 101.2
4:00		Pumping Started					101.1		13	DTW 101.1
4:35		Pumping Stopped					105.6		14.5	DTW 105.6
							7/2/2019			
							DA			
Stabilizing Criteria	**+/- 0.1 SU**	**+/- 5%**		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		**< 5 NTUs**				

Geosyntec consultants

GROUNDWATER SAMPLING LOG SHEET

Client: SCS
Site: Plant Hammond
Well ID: MW-30D
Total Depth (ft): 107.2
Depth to Water (ft): 79.85
Well Diameter (in): 2
Well Volume (gal) = 0.041d²h: 17.152
Well Volume (L) = gal * 3.785: 64.92
d = well diameter (inches); h = length of water column (feet)

Well Type: Flush / (Stick Up)
Well Lock: (Yes) / No
Well Cap Condition: (Good) / Replace
Well Tag Present: (Yes) / No

Project No.: GW0596B
Location: AP-1
Pump Type/Model: Bladder
Tubing Material: Polyethylene
Pump Intake Depth (ft): 100'
Start/Stop Purge Time: 16:30 / 19:45
Purge Rate (mL/min): 100
Total Purge Volume (L): 19
Purge Method: (Low-Flow) Well Volume Other: —
Sampling Method: (Pump Discharge) Other: —

Sampling Date: 7/8/19
Sampler's Name: Dalton Anderson
Sample Collection Time: 19:45
Sample Purge Rate (mL/min): 100
Sample ID: MW30D
Laboratory Analyses: Molybdenum

QA/QC Collected? —
QA/QC I.D. —

All sample containers requiring chemical preservation properly preserved prior to demob from well? (Yes) No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
16:43	8.10	3014.50	113.80	2.42	29.91	15.72	80.12	100	1	
16:49	8.10	2503.60	124.60	2.20	29.39	63.14	80.15	100	1.5	
16:53	8.04	3035.40	131.50	1.95	30.51	60.23	80.17	100	2	
16:58	8.04	3061.50	134.50	2.01	31.77	51.40	80.18	100	2.5	
17:03	8.04	3079.60	141.30	2.04	31.18	46.80	80.18	100	3	
17:08	8.04	3093.30	137.40	2.016	31.42	41.20	80.21	100	3.5	
17:13	8.09	3115.70	147.60	2.07	31.71	35.60	80.21	100	4	
17:18	8.06	3066.30	150.30	1.94	31.28	22.41	80.22	100	4.5	
17:23	8.05	3072.80	152.70	1.75	31.44	21.70	80.22	100	5	
17:28	8.06	3101.70	153.80	1.65	32.01	15.60	80.24	100	5.5	
17:33	8.05	3307.70	156.90	1.61	30.86	15.20	80.24	100	6	
17:38	8.05	3113.100	156.90	1.56	30.31	13.0	80.25	100	6.5	
17:43	8.05	3132.20	155.90	[illegible]	30.48	12.10	80.25	100	7	
										← I-PAD overheated
18:13	8.05	3116.00	122.10	1.30	30.79	9.45	80.33	100	10	
18:18	8.05	3157.00	131.90	1.33	30.85	8.90	80.34	100	10.5	
18:23	8.05	3186.40	136.90	1.31	31.39	8.70	80.34	100	11	
18:28	8.06	3179.70	136.20	1.34	32.54	8.52	80.35	100	11.5	
18:33	8.06	3177.90	134.10	1.43	33.103	8.50	80.35	100	12	
Stabilizing Criteria	**+/- 0.2 SU**	**+/- 5%**		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		**< 5 NTUs**	**< 0.3 ft**	**> 100 mL < 250 mL**	**> 3L**	

Geosyntec consultants

GROUNDWATER SAMPLING LOG SHEET

Client: SCS
Site: Plant Hammond
Well ID: MW-30D
Total Depth (ft): 107.2
Depth to Water (ft): 79.85
Well Diameter (in): 2
Well Volume (gal) = 0.041d²h: 17.52
Well Volume (L) = gal * 3.785: 64.92
d = well diameter (inches); h = length of water column (feet)
Well Type: Flush (Stick Up)
Well Lock: (Yes) No
Well Cap Condition: (Good) Replace
Well Tag Present: (Yes) No

Project No.: GW6581
Location: AP-1
Pump Type/Model: Bladder
Tubing Material: Polyethylene
Pump Intake Depth (ft): 100
Start/Stop Purge Time: 16:30 / 19:45
Purge Rate (mL/min): 100
Total Purge Volume (L): 19
Purge Method: (Low-Flow) Well Volume Other: —
Sampling Method: (Pump Discharge) Other: —

Sampling Date: 7/16/19
Sampler's Name: Dalton Anderson
Sample Collection Time: 19:45
Sample Purge Rate (mL/min): 100
Sample ID: MW-30D
Laboratory Analyses: Molybdenum
QA/QC Collected? —
QA/QC I.D. —

All sample containers requiring chemical preservation properly preserved prior to demob from well? (Yes) No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
16:36	6.05	3124.10	141.00	1.31	34.36	7.83	80.36	100	12.5	
16:43	6.05	3167.20	144.60	1.22	34.70	7.63	80.36	100	13	
16:49	8.05	3177.30	145.90	1.24	35.08	7.55	80.37	100	13.5	
16:53	8.04	3184.00	146.10	1.13	35.94	7.32	80.37	100	14	
16:56	6.04	3198.40	146.00	1.10	36.44	7.14	80.36	100	14.5	
19:03	6.04	3125.10	160.40	1.00	35.44	7.09	80.36	100	15	
19:08	6.05	3098.70	161.30	1.20	33.46	7.03	80.39	100	15.5	
19:13	6.06	3139.50	164.90	1.20	29.74	7.31	80.39	100	16	
~~19:16~~	~~6.06~~	~~3139.50~~	~~164.90~~	~~1.15~~	~~29.20~~	~~7.22~~	~~80.40~~	~~100~~	~~16.5~~	
19:16	6.06	3139.50	164.90	1.20	29.74	7.22	8.40	100	16.5	
19:23	6.07	3137.80	163.90	1.15	29.20	7.13	8.40	100	17	
19:28	6.07	3139.00	163.70	1.13	29.08	7.04	8.41	100	17.5	
19:33	6.07	3155.80	161.00	1.06	29.12	7.03	8.41	100	18	
19:38	6.07	3176.10	160.00	1.03	27.46	7.14	8.42	100	18.5	
19:43	6.07	3126.10	160.00	1.03	27.46	7.02	8.42	100	19	Purge for 3 hours
					7/16/19					
				DA						
Stabilizing Criteria	**+/- 0.2 SU**	**+/- 5%**		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		**< 5 NTUs**	**< 0.3 ft**	**> 100 mL < 250 mL**	**> 3L**	

APPENDIX B

Well Inspection Forms

Geosyntec consultants

WELL INSPECTION FORM

Field Technician: Grant Walker | Site/Location: Hammond | Inspection Date: 03/11/2019

Well Inspection Items

Well ID	Inspection Time	Present (Y/N)						Comments regarding well condition
		Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	
HGWC-12IA	12:58	Y	Y	Y	Y	Y	N	Top of protective casing had crack
MW-1	13:20	Y	Y	Y	Y	Y	Y	Slight vegetation on pad
APIA-1	13:27	Y	Y	Y	Y	Y	Y	Slight vegetation on pad
~~HGWC-2 HGWC-~~ (GW)								
HGWA-2	13:56	Y	Y	Y	Y	Y	N	Good condition
HGWA-3	13:58	Y	Y	Y	Y	Y	N	SAA
HGWA-1	14:35	Y	Y	Y	Y	Y	N	SAA, Lock rusted

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WELL INSPECTION FORM

Field Technician: Grant Walter | Site/Location: AP-1 / Hammond | Inspection Date: 03/11/19

Well Inspection Items

Well ID	Inspection Time	Present (Y/N)						Comments regarding well condition
		Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	
MW-7	9:33	Y	Y	Y	Y	Y	N	Good condition
MW-8	9:45	Y	Y	Y	Y	Y	N	SAA
MW-19	10:13	Y	Y	Y	Y	Y	N	SAA
HGWC-13	10:24	Y	Y	Y	Y	Y	N	SAA
MW-24D	10:26	Y	Y	Y	Y	Y	N	SAA, Needs label
PMW-01	10:35	N	N	N	N	N	N	No lock, No casing
HGWC-11	10:42	Y	Y	Y	Y	Y	N	Good condition
HGWC-12	10:44	Y	Y	Y	Y	Y	N	SAA
MW-25D	10:46	Y	Y	Y	Y	Y	N	SAA
HGWC-10	10:54	Y	Y	Y	Y	Y	N	SAA
MW-6	10:56	Y	Y	Y	Y	Y	N	SAA
MW-5	11:01	Y	Y	Y	Y	Y	N	SAA
HGWC-9	11:08	Y	Y	Y	Y	Y	N	SAA
MW-26D	11:10	Y	Y	Y	Y	Y	N	SAA
MW-20	11:18	Y	Y	Y	Y	Y	N	SAA
MW-27D	11:26	Y	Y	Y	Y	Y	N	SAA
HGWC-8	11:28	Y	Y	Y	Y	Y	N	SAA
MW-29	11:34	Y	Y	Y	Y	Y	N	SAA
HGWC-7	11:41	Y	Y	Y	Y	Y	N	SAA

Geosyntec consultants

WELL INSPECTION FORM

Field Technician: Grant Walter | Site/Location: AP-1 / Hammond | Inspection Date: 03/11/19

Well Inspection Items

Well ID	Inspection Time	Present (Y/N)						Comments regarding well condition
		Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	
MW-28D	11:43	Y	Y	Y	Y	Y	N	Good condition
PMW-2	11:49	N	N	N	N	N	N	No casing, No pad

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AR1 and AP-2
Permit Number:
Well ID: HGWA-1
Date: 4/1/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hayward AP-1 and AP-2
Permit Number:
Well ID: HGWA-2
Date: 03/12/19

		yes	no	n/a	
1	**Location/Identification**				
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?		X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2	**Protective Casing**				
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		X	GW
e	Is the well locked and is the lock in good condition?	X			
3	**Surface pad**				
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4	**Internal casing**				
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?	X			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5	**Sampling: Groundwater Wells Only:**				
a	Does well recharge adequately when purged?	X			
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X			
c	Does the well require redevelopment (low flow, turbid)?		X		
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: PLANT HAMMOND AP-1 AND AP-2
Permit Number:
Well ID: HAWA-3
Date: 03/12/19

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Plant Hammond
Permit Number: —
Well ID: HGWC-7
Date: 3/13/2019

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)			
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?	X		
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number:
Well ID: HGWC-8
Date: 03/12/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			X
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)			
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		X (GW)
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: PLANT HAMMOND AD-1
Permit Number: —
Well ID: ~~MW~~ MWC-9
Date: 03/13/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic? (ST)	X		X
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)		X	
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?		X	
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: HGWC-10
Date: 07/13/19

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			X
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP-1
Permit Number:
Well ID: HGWC-11
Date: 4/1/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP-1
Permit Number:
Well ID: HGWC-12
Date:

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number:
Well ID: (GW) MW- HGWC-13
Date: 02/13/19

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with (pea gravel/sand)?			X
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hannaford AP-1
Permit Number:
Well ID: MW-1
Date: 08/11/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			X
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?		X	
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?			X
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?			X
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number:
Well ID: MW-6
Date: 03/13/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?		X	
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond AP-1
Permit Number:
Well ID: MW-1
Date: 4/3/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number:
Well ID: MW-8
Date: 4/11/19

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?			X
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?			X
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-19
Date: 4/1/19

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)		X	
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number:
Well ID: MW-20
Date: 4/1/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-24D
Date: 03/13/19

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	*	X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?			X
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond
Permit Number: —
Well ID: MW-25D
Date: 4/11/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: PLANT HARMONY
Permit Number:
Well ID: RW-26D
Date: 03/13/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		NM
c	Is the well in a high traffic area and does the well require protection from traffic?			X
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?		X	
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	(X)		X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-27D
Date: 03/12/11

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)		X	
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	can't tell X		
b	Is the well pad sloped away from the protective casing?			
c	Is the well pad in complete contact with the protective casing?			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)			
e	Is the pad surface clean (not covered with sediment or debris)?			
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?		X	
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?	X		
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

GW

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: PLANT ~~HAMMOND~~ BT HAMMOND
Permit Number:
Well ID: UG-28D
Date: 03/12/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X	~~X~~	
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-29
Date: 4/1/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)		X	
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Geosyntec

WELL INSPECTION FORM

Field Technician: Aaron Reeder | Site/Location: Plant Hammond API and 2 | Inspection Date: 4/1/2019

Well Inspection Items

Well ID	Inspection Time	Present (Y/N)						Comments regarding well condition
		Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	
HGWA-1	1123	Y	Y	Y	Y	Y	Y	
HGWA-2	1143	Y	Y	Y	Y	Y	Y	
HGWA-3	1147	Y	Y	Y	Y	Y	Y	

Geosyntec

WELL INSPECTION FORM

Field Technician: Dalton Anderson | Site/Location: Plant Hammond AP-1 | Inspection Date: 4/1/2019

Well Inspection Items

Well ID	Inspection Time	Present (Y/N)						Comments regarding well condition
		Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	
HGWC-7	8:45	Y	Y	Y	Y	Y	Y	
MW-28D	8:53	Y	Y	Y	Y	Y	Y	
MW-29	9:03	Y	Y	Y	Y	Y	Y	
HGWC-8	9:13	Y	Y	Y	Y	Y	Y	
MW-27D	9:18	Y	Y	Y	Y	Y	Y	
MW-20	9:28	Y	Y	Y	Y	Y	Y	
MW-26D	9:38	Y	Y	Y	Y	Y	Y	
HGWC-9	9:43	Y	Y	Y	Y	Y	Y	
MW-5	9:53	Y	Y	Y	Y	Y	Y	
HGWC-10	10:08	Y	Y	Y	Y	Y	Y	
MW-6	10:13	Y	Y	Y	Y	Y	Y	
MW-25D	10:18	Y	Y	Y	Y	Y	Y	
HGWC-12	10:23	Y	Y	Y	Y	Y	Y	
HGWC-11	10:28	Y	Y	Y	Y	Y	Y	
MW-19	10:38	Y	Y	Y	Y	Y	Y	
MW-7	10:43	Y	Y	Y	Y	Y	Y	
PMW-01	11:08	N	Y	N	N	N	Y	PVC only
MW-24D	11:18	Y	Y	Y	Y	Y	Y	
HGWC-13	11:23	Y	Y	Y	Y	Y	Y	
MW-8	11:50	Y	Y	Y	Y	Y	Y	

Geosyntec

WELL INSPECTION FORM

Field Technician: Aaron Reeder | Site/Location: Plant Hammond AP-1 | Inspection Date: 4-1-2019

Well Inspection Items

Well ID	Inspection Time	Present (Y/N)						Comments regarding well condition
		Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	
APIA-1	1220	Y	Y	Y	Y	Y	N	good
MW-1	1240	Y	Y	Y	Y	Y	N	good

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1 / AP-2
Permit Number: —
Well ID: HGWA-1
Date, field conditions: 09-23-2019

		Question	yes	no	n/a
1		Location/Identification			
	a	Is the well visible and accessible?	✓		
	b	Is the well properly identified with the correct well ID?	✓		
	c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
	d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2		Protective Casing			
	a	Is the protective casing free from apparent damage and able to be secured?	✓		
	b	Is the casing free of degradation or deterioration?	✓		
	c	Does the casing have a functioning weep hole?	✓ (crossed out) NA 10/04	⊗ NP 10/04	
	d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
	e	Is the well locked and is the lock in good condition?	✓		
3		Surface pad			
	a	Is the well pad in good condition (not cracked or broken)?	✓		
	b	Is the well pad sloped away from the protective casing?	✓		
	c	Is the well pad in complete contact with the protective casing?	✓		
	d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
	e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4		Internal casing			
	a	Does the cap prevent entry of foreign material into the well?	✓		
	b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
	c	Is the well properly vented for equilibration of air pressure?	✓		
	d	Is the survey point clearly marked on the inner casing?	✓		
	e	Is the depth of the well consistent with the original well log?		✓	
	f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5		Sampling: Groundwater Wells Only:			
	a	Does well recharge adequately when purged?	✓		
	b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
	c	Does the well require redevelopment (low flow, turbid)?		✓	
6		Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP1/AP2 Hammond
Permit Number: ~
Well ID: HGW A-2
Date, field conditions: 9/23/19 - Sunny

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 / AP-2 Hammond
Permit Number: —
Well ID: HGWA-3
Date, field conditions: 09/23/19 clear, sunny 80°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - AP1
Permit Number: —
Well ID: HGWC-7
Date, field conditions: 9/23/19 - Sunny - 9/25/19 sunny

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	NA	X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?	✓		
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AR-1 Hammond
Permit Number:
Well ID: HGWC-8
Date, field conditions: 09/24/19 clear, sunny, 92°F

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)		X	
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: HGWC-9 (MW)
Date, field conditions: 1/27/19 clear, sunny 86°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?		X	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - A71
Permit Number: -
Well ID: #GWC-10
Date, field conditions: 9/23/19 - Sunny

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	-		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1
Permit Number: —
Well ID: HGWC-11
Date, field conditions: 09-27-2012 HOT / DRY

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?		✓	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1
Permit Number: –
Well ID: HGWC-12
Date, field conditions: 09-27-2019 Dry / Hot

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?		✓	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1
Permit Number: —
Well ID: HGWC-13
Date, field conditions: 09-26-2019

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?		✓	
e	Is the depth of the well consistent with the original well log?		✓	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: AP1A-1
Date, field conditions: 09/23/11 Clear, Sunny, 65°F

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?	X			
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?	X			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?			X	WL only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X	
c	Does the well require redevelopment (low flow, turbid)?			X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-3 Hammond
Permit Number: —
Well ID: MW-1
Date, field conditions: 09/23/19 clear, sunny 65°F

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?	X			
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?	X			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?			X	WL only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X	
c	Does the well require redevelopment (low flow, turbid)?			X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number:
Well ID: MW-5
Date, field conditions: 09/25/19 clear, sunny, 93°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?	X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	+	NM	NM
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-6
Date, field conditions: 09/26/19 cloudy, 93°F

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-7
Date, field conditions: 09/26/19 clear 93°F

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - AP1
Permit Number: -
Well ID: MW-8
Date, field conditions: 9/23/19 - Sunny

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?			X
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X
c	Does the well require redevelopment (low flow, turbid)?			X
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X (MM) 10/04		

WL only (MM) 10/04

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - AP1
Permit Number: –
Well ID: MW-19
Date, field conditions: Sunny - 9/23/19 - 9/24/19

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	✓ (NM 10/04)		~~✓~~ (NM) 10/04
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓ (NM 10/04)		~~✓~~ (NM) 10/04
c	Does the well require redevelopment (low flow, turbid)?	✓ (NM 10/04)		~~✓~~ (NM) 10/04
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓ (NM 10/04)		~~✓~~ (NM) 10/04

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-20
Date, field conditions: 09/25/19 Clear, sunny, 60°F

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	X		
b	Is the well properly identified with the correct well ID?	X		
c	Is the well in a high traffic area and does the well require protection from traffic?		X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	X		
b	Is the casing free of degradation or deterioration?	X		
c	Does the casing have a functioning weep hole?	X		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X		
e	Is the well locked and is the lock in good condition?	X		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	X		
b	Is the well pad sloped away from the protective casing?	X		
c	Is the well pad in complete contact with the protective casing?	X		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X		
e	Is the pad surface clean (not covered with sediment or debris)?	X		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	X		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X		
c	Is the well properly vented for equilibration of air pressure?	X		
d	Is the survey point clearly marked on the inner casing?	X		
e	Is the depth of the well consistent with the original well log?	X		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	X		
c	Does the well require redevelopment (low flow, turbid)?		X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1
Permit Number: —
Well ID: MW-24d
Date, field conditions: 09-26-2019 Dry / Hot

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?		✓	
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1
Permit Number: —
Well ID: MW-25d
Date, field conditions: 09-27-2019 Dry / Hot

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?		✓	
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - AP1
Permit Number: -
Well ID: MW-26D
Date, field conditions: 9/23/19 - Sunny - 9/26/19 sunny

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	NM	X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	**Sampling: Groundwater Wells Only:**			
a	Does well recharge adequately when purged?	NM 10/04		NM 10/04
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	NM 10/04		NM 10/04
c	Does the well require redevelopment (low flow, turbid)?		NM 10/04	NM 10/04
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		NM 10/04

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-1 Hammond
Permit Number: —
Well ID: MW-270
Date, field conditions: 09/26/19 clear, sunny, 75°F

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?		X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)		X		
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?		X		minor debris from vegetation
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?	X			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?		X		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?		X	NM	
c	Does the well require redevelopment (low flow, turbid)?		X		
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - AP1
Permit Number: –
Well ID: MW-28D
Date, field conditions: 9/23/19 - Sunny - 9/26/19 sunny

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	BM	X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	✓		BM BRW
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		BM BRW
c	Does the well require redevelopment (low flow, turbid)?	✓		BM BRW
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		BM BRW

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond - API
Permit Number: -
Well ID: MW-29
Date, field conditions: 9/23/19 - Sunny / - 9/24/19 sunny

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	/		
b	Is the well properly identified with the correct well ID?	/		
c	Is the well in a high traffic area and does the well require protection from traffic?	NA	X	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	/		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	/		
b	Is the casing free of degradation or deterioration?	/		
c	Does the casing have a functioning weep hole?	/		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	/		
e	Is the well locked and is the lock in good condition?	/		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	/		
b	Is the well pad sloped away from the protective casing?	/		
c	Is the well pad in complete contact with the protective casing?	/		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	/		
e	Is the pad surface clean (not covered with sediment or debris)?	/		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	/		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	/		
c	Is the well properly vented for equilibration of air pressure?	/		
d	Is the survey point clearly marked on the inner casing?	/		
e	Is the depth of the well consistent with the original well log?	/		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	/		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	/		NA BAW
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	/		NA BAW
c	Does the well require redevelopment (low flow, turbid)?	BAW 10/04	X BAW 10/04	NA BAW
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	/		NA BAW

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-1
Permit Number: —
Well ID: MW-30D
Date, field conditions: 09-24-2019 DRY / Hot

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-3 Hammond
Permit Number: ←
Well ID: HGWC-120
Date, field conditions: 09/23/19 clear, sunny 65°F

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?		X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?			X	not measured TD.
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?			X	WL only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X	
c	Does the well require redevelopment (low flow, turbid)?			X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond AP-3
Permit Number: —
Well ID: HGWC-121A
Date, field conditions: 09-23-2019

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	✓			
b	Is the well properly identified with the correct well ID?	✓			
c	Is the well in a high traffic area and does the well require protection from traffic?	✓			
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓			
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	✓			
b	Is the casing free of degradation or deterioration?	✓			
c	Does the casing have a functioning weep hole?	✓ NM 10/04		NM 10/04	
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓			
e	Is the well locked and is the lock in good condition?	✓			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	✓			
b	Is the well pad sloped away from the protective casing?	✓			
c	Is the well pad in complete contact with the protective casing?	✓			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓			
e	Is the pad surface clean (not covered with sediment or debris)?	✓			
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	✓			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓			
c	Is the well properly vented for equilibration of air pressure?	✓			
d	Is the survey point clearly marked on the inner casing?	✓			
e	Is the depth of the well consistent with the original well log?	✓			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?			✓	WL only NM 10/04
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓	
c	Does the well require redevelopment (low flow, turbid)?			✓	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓ NM 10/04		✓ NM 10/04	

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-3 Hammond
Permit Number: —
Well ID: HGWA-122
Date, field conditions: 09/23/19 clear, sunny, 65°F

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?		X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?			X	TD not measured (pump)
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?			X	WL only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X	
c	Does the well require redevelopment (low flow, turbid)?			X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-3 Hammond
Permit Number: —
Well ID: MGWC-124
Date, field conditions: 09/23/19 clear, sunny 65°F

		yes	no	n/a	
1	Location/Identification				
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?		X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2	Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3	Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4	Internal casing				
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?			X	TD not measured (pump)
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5	Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?			X	WL only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X	
c	Does the well require redevelopment (low flow, turbid)?			X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Hammond MP-3 (NM 10/04)
Permit Number: —
Well ID: MW-21
Date, field conditions: 09-23-2019

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?		✓	
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓ (NM 10/04)		✓ (NM 10/04)

WL only (NM 10/04)

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: AP-3 Hammond
Permit Number: —
Well ID: MW-23
Date, field conditions: 09/23/19 clear, sunny, 65°F

		yes	no	n/a	
1 Location/Identification					
a	Is the well visible and accessible?	X			
b	Is the well properly identified with the correct well ID?	X			
c	Is the well in a high traffic area and does the well require protection from traffic?		X		
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	X			
2 Protective Casing					
a	Is the protective casing free from apparent damage and able to be secured?	X			
b	Is the casing free of degradation or deterioration?	X			
c	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	X			
e	Is the well locked and is the lock in good condition?	X			
3 Surface pad					
a	Is the well pad in good condition (not cracked or broken)?	X			
b	Is the well pad sloped away from the protective casing?	X			
c	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	X			
e	Is the pad surface clean (not covered with sediment or debris)?	X			
4 Internal casing					
a	Does the cap prevent entry of foreign material into the well?	X			
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	X			
c	Is the well properly vented for equilibration of air pressure?	X			
d	Is the survey point clearly marked on the inner casing?	X			
e	Is the depth of the well consistent with the original well log?	X			
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	X			
5 Sampling: Groundwater Wells Only:					
a	Does well recharge adequately when purged?			X	WL only
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			X	
c	Does the well require redevelopment (low flow, turbid)?			X	
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	X			

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

APPENDIX C

Supplemental Semi-Annual Remedy Selection and Design Progress Report

Prepared for

Georgia Power Company
241 Ralph McGill Blvd NE
Atlanta, Georgia 30308

SUPPLEMENTAL SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

PLANT HAMMOND ASH POND 1 (AP-1)

Prepared by

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
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Project Number GW6581B

January 2020

SUPPLEMENTAL SEMI-ANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

GEORGIA POWER COMPANY - PLANT HAMMOND

ASH POND 1 (AP-1)

This *Supplemental Semi-Annual Remedy Selection and Design Progress Report, Georgia Power Company - Plant Hammond, Ash Pond 1 (AP-1),* has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule, specifically 40 Code of Federal (CFR) § 257.97(a) and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a).

Report Prepared by:

Whitney B. Law, P.E.
Georgia Professional Engineer No. 036641

January 30, 2020
Date

Geosyntec consultants

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LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
CSM	conceptual site model
GA EPD	Georgia Environmental Protection Division
Geosyntec	Geosyntec Consultants, Inc.
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
MNA	monitored natural attenuation
PRB	permeable reactive barriers
SSI	statistically significant increase
SSL	statistically significant level
US EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015) (CCR Rule), Geosyntec Consultants, Inc. (Geosyntec) has prepared this *Supplemental Semi-Annual Remedy Selection and Design Progress Report* (Semi-Annual Remedy Selection Progress Report) for Georgia Power Company (GPC) Plant Hammond Ash Pond 1 (AP-1 or Site). Specifically, this Semi-Annual Remedy Selection Progress Report has been prepared pursuant to 40 CFR § 257.97(a) and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). This Semi-Annual Remedy Selection Progress Report was prepared to document activities conducted in the third and fourth quarters of 2019 (prior semi-annual period) in support of the previously submitted *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 1 (AP-1)* (Geosyntec, 2019b) (ACM Report). As required by the rules, this Semi-Annual Remedy Selection Progress Report describes the progress made in selecting and designing a remedy.

The initial Semi-Annual Progress Report was submitted to GA EPD on December 12, 2019 (Geosyntec, 2019c). This supplemental Semi-Annual Progress Report provides the documents included with the initial Semi-Annual Progress Report supplemented with additional discussion regarding nature and extent delineation and proposed path forward, provided in Section 2.1. This supplemental Semi-Annual Progress Report has been included as an appendix to the *2019 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2020b). GPC will include future semi-annual remedy selection progress reports as an appendix to the routine semi-annual groundwater monitoring and corrective action reports.

On June 12, 2019, Geosyntec completed, on behalf of GPC, the ACM Report to evaluate potential corrective measures to address statistically significant levels (SSLs) of arsenic and molybdenum identified in groundwater at AP-1 (Geosyntec, 2019b). GPC placed the ACM in the Site's operating record and posted to the Site's CCR Rule Compliance website. Pursuant to 40 CFR § 257.97, GPC is evaluating the potential corrective measures presented in the ACM in order to identify an appropriate remedy, or combination of remedies, as soon as feasible.

As discussed in the ACM Report, the following corrective measures are potentially feasible for use at AP-1:

1. Geochemical Manipulation (In-Situ Injection)
2. Hydraulic Containment (Pump and Treat)
3. Monitored Natural Attenuation (MNA)
4. Permeable Reactive Barrier (PRB)
5. Phytoremediation
6. Subsurface Vertical Barrier Walls

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**).

Plant Hammond is a four-unit, coal-fired electric generating facility. All four units at Plant Hammond were retired on July 29, 2019 and no longer produces electricity.

AP-1 is a 35-acre surface impoundment located at Plant Hammond that received CCR materials from its commission in 1952 until 1969. After 1969, AP-1 was utilized as a co-treatment pond to handle return water flows from the other ponds and for recycling of process water for plant operations. GPC will close AP-1 through removal of the CCR material from the CCR unit; closure activities will be conducted in accordance with 40 CFR § 257.102 and corresponding Rule 391-3-4-.10(7)(b). The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Details of the closure approach are provided in the Initial Written Closure Plan, published in 2016 to GPC's CCR Rule Compliance website.

2.0 SUMMARY OF WORK COMPLETED

2.1 Nature and Extent Delineation

CCR compliance groundwater monitoring-related activities have been performed for AP-1 since May 2016 pursuant to detection monitoring and assessment monitoring programs required by 40 CFR § 257.94 and 40 CFR § 257.95, respectively. GPC initiated the assessment monitoring program in January 2018 after identifying statistically significant increases (SSIs) of Appendix III parameter groundwater concentrations over background concentrations. Pursuant to 40 CFR § 257.95, samples were collected from the compliance monitoring well network, depicted on **Figure 2**, during 2018 and analyzed for Appendix IV parameters. SSLs of arsenic and molybdenum were identified within the 2018 data for the following wells:

- Arsenic: HGWC-13; and
- Molybdenum: HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, and HGWC-13

The HGWC-13 arsenic concentrations reported in 2018 exceeded the US EPA and GA EPD groundwater protection standards (GWPS), as derived pursuant to US EPA rule 40 CFR § 257.95(h) and GA EPD CCR Rule 391-3-4-.10(6)(a). The molybdenum concentrations in wells HGWC-7, HGWC-9, HGWC-11, HGWC-12, and HGWC-13 exceeded the GA EPD GWPS, but not the US EPA GWPS, whereas molybdenum concentrations in well HGWC-8 exceeded both the state and federal GWPS. Details of these sampling events and statistical analyses are provided in the following report published to GPC's website and submitted to GA EPD in 2019: *2018 Annual Groundwater Monitoring and Corrective Action Report – Plant Hammond Ash Ponds 1 and 2* (Geosyntec, 2019a).

Pursuant to 40 CFR § 257.96, groundwater in the vicinity of AP-1 continues to be monitored during the remedy selection phase in accordance with the established assessment monitoring program. As part of the assessment program, nine additional groundwater monitoring wells were installed in 2018 and 2019 to provide additional data to characterize flow conditions downgradient of AP-1 and to horizontally and vertically delineate SSLs of arsenic and molybdenum from the six target wells previously listed. Wells MW-19, MW-20, and MW-29 were installed for horizontal delineation and wells MW-24D, MW-25D, MW-26D, MW-27D, MW-28D, and MW-30D were installed for vertical delineation. The delineation well network was supplemented by adding

piezometers MW-5, MW-6, and MW-7, which were originally installed in 2014 to gauge water levels downgradient of AP-1. These three piezometers were suitably located downgradient of AP-1 and therefore reallocated as horizontal delineation wells. The locations of these nine wells are shown on **Figure 2**. Supporting details and documents (e.g., boring logs, well construction table) are provided in the ACM Report.

Based on the Appendix IV groundwater data generated from the second semi-annual assessment monitoring event conducted September 2019, the arsenic and molybdenum concentrations in horizontal delineation wells MW-5, MW-6, MW-7, MW-20, and MW-29 are below state and federal GWPS and therefore delineate the two constituents to within the property boundary. The arsenic concentration reported in well MW-24D is below the state and federal GWPS, and therefore vertically delineates the arsenic SSL reported for well HGWC-13. Similarly, the molybdenum concentrations in wells MW-24D, MW-25D, and MW-27D are less than the GWPS and therefore vertically delineate molybdenum SSLs in wells HGWC-13, HGWC-11, HGWC-12, and HGWC-8, respectively (the location of MW-25D delineates both HGWC-11 and HGWC-12). Vertical delineation of molybdenum in wells HGWC-7 and HGWC-9 is currently in progress.

Regarding vertical molybdenum delineation in well HGWC-7, GPC is evaluating preparing a demonstration document that outlines evidence illustrating that molybdenum groundwater detections in well MW-30D are naturally occurring within the localized rock formation. Based on the observed geochemical field parameters and the static groundwater level differential between MW-30D and the two shallower wells (HGWC-7, MW-28D), the preliminary evidence indicates the GWPS exceedances in MW-30D originate from a source other than AP-1. The depth differential between the top of screen for MW-30D and the bottom of screen for MW-28D is nearly 40 feet of competent bedrock. Aquifer solid material from well MW-30D will be submitted for analysis of total molybdenum in February 2020. The results from this analysis will be used to prepare a demonstration document. Determining the natural-occurring source in MW-30D will serve to vertically delineate molybdenum groundwater concentrations in wells HGWC-7 and MW-28D.

Regarding molybdenum concentrations in HGWC-9, GPC is evaluating the installation of an additional deep well to vertically delineate molybdenum concentrations in the vicinity of HGWC-9 and MW-26D.

The September 2019 data are provided in the *2019 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2020)).

2.2 Summary of Corrective Measures

The closure of AP-1 by removal of the CCR material is a source control measure that reduces the potential for migration of CCR constituents to groundwater. The corrective measures proposed in the ACM are being evaluated to address SSLs in groundwater at and downgradient of the compliance boundary. Each individual corrective measure is evaluated relative to criteria specified in 40 CFR § 257.96(c) and 40 CFR § 257.97(b). A comparative screening of the corrective measures is provided in **Table 1**; the following provides a brief description of each corrective measure being screened.

- **Geochemical Approaches (In-Situ Injection):** *Use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of arsenic and molybdenum.*

- **Hydraulic Containment (Pump and Treat):** T*he use of groundwater extraction system(s) to induce a hydraulic gradient for hydraulic capture or control the migration of impacted groundwater. Extracted water may require subsequent above-ground treatment before permitted discharge or reuse.*

- **Monitored Natural Attenuation (MNA):** *MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods.*

- **Permeable Reactive Barrier (PRB):** *PRB technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through.*

- **Phytoremediation:** *Phytoremediation uses trees and other plants to degrade or immobilize constituents or achieve hydraulic control without the need for an above-ground water treatment system and infrastructure.*

- **Subsurface Vertical Barrier Walls:** *This approach involves placing a barrier to groundwater flow in the subsurface, frequently around a source area, to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.*

2.3 Field Investigation and Data Collection

Additional data, data analysis, and site-specific evaluation are necessary to refine the conceptual site model (CSM) and to further evaluate the feasibility of each proposed corrective measure. This investigation may occur in different phases as the understanding of site conditions expands. When feasible, data needed to refine the CSM will be collected concurrent with the routine assessment monitoring events. However, supplementary field investigations may be required to complete the data gathering efforts during the remedy selection phase.

Table 2 presents a summary of data collection activities completed during the second 2019 semi-annual reporting period. The applicability and rationale for specific actions and/or analysis of specific parameters are also provided on **Table 2**.

Field efforts completed at AP-1 during the reporting period in support of remedy selection included collecting supplementary groundwater samples to evaluate:

- Attenuation mechanisms and rates and aquifer capacity for attenuation;
- Amount and distribution of select metal hydroxides or electron donors that may affect geochemical mechanisms; and
- Groundwater parameters specific to the existing National Pollutant Discharge Elimination System (NPDES) permitted discharge limits and capabilities of on-site low volume wastewater treatment plant.

The groundwater samples discussed above were collected during the second semi-annual assessment monitoring event conducted in September 2019. During the event, a site-wide round of groundwater level data were recorded from the AP-1 well network depicted on **Figure 2**. The groundwater level data were used to generate the potentiometric surface map provided on **Figure 3**.

The ACM-related analytical results from the September 2019 event are summarized in **Tables 3a, 3b,** and **3c**. The tables present parameters needed to evaluate in-situ conditions that may affect the performance and feasibility of the corrective measures. As previously mentioned, the Appendix III and IV groundwater data collected during the September 2019 event are not presented herein, but instead are provided in the *2019 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2020).

The laboratory reports associated with the data presented on Tables 3a, 3b, and 3c are included in **Appendix A**.

3.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE

During the pond closure, temporary changes in site conditions may occur that must be considered as part of remedy selection. GPC proactively initiated adaptive site management as outlined in the ACM Report (Geosyntec, 2019b) to support the remedial strategy and address potential changes in site conditions as appropriate. The adaptive site management approach may be adjusted over the site's life cycle as new site information and technologies become available. To this end, GPC will continue its data collection efforts as necessary in support of efforts to refine the CSM and to further evaluate the feasibility of each corrective measure proposed in the ACM Report. At this time, all corrective measures outlined in **Table 1** are being retained. Once sufficient data are available to make technically-sound decisions regarding the ability to implement one or more specific corrective measures, necessary steps will be taken to design and implement a remedy for AP-1 in accordance with 40 CFR § 257.98.

Supplementary data collection and evaluation activities proposed to be completed during the next semi-annual reporting period are presented on **Table 4**. GPC will continue to prepare semi-annual remedy selection progress reports to document AP-1 groundwater conditions, results associated with additional data gathering, and the progress in selecting and designing the remedy in accordance with 40 CFR § 257.97(a). GPC will include future semi-annual remedy selection progress reports in routine groundwater monitoring and corrective action reports. Record keeping, notifications, and publicly accessible internet site requirements for the semi-annual remedy selection progress reports will be provided in accordance with 40 CFR § 257.105(h)(12), 257.106(h)(9), and 257.107(h)(9), respectively.

4.0 REFERENCES

Geosyntec Consultants. 2019a. *2018 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond Ash Ponds 1 & 2 (AP-1 and AP-2).* January 2019.

Geosyntec Consultants, 2019b. *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 1 (AP-1)*. June 2019.

Geosyntec Consultants. 2020. *2019 Annual Groundwater Monitoring and Corrective Action Report - Plant Bowen Ash Pond 1 (AP-1).* January 2020.

U.S. Environmental Protection Agency. 2015a. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. [EPA-HQ-RCRA–2009–0640; FRL–9919–44–OSWER]. RIN–2050–AE81, April 2015.

TABLES

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-1, Floyd County, Georgia

Geosyntec consultants

	Regulatory Citation for Criteria:	40 CFR 257.96(C)(1)	
Corrective Measure	**Description**	**Performance**	**Reliability**
Geochemical Approaches (In-Situ Injection)	Use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of As and Mo. Under anaerobic conditions, As would be attenuated within sparingly soluble sulfide minerals; this approach might also increase the attenuation of Mo. Under aerobic conditions, soluble iron or manganese and oxygen (either via air sparging or through a chemical oxidant) would be injected to promote the formation of iron or manganese (oxy-) hydroxides for subsequent sorption of As (and potentially, Mo) onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including As.	The effective immobilization of As has been shown under aerobic and anaerobic conditions; however, the anaerobic approach (involving the injection of an electron donor together with iron or manganese and sulfur) requires careful study and testing. While aerobic approaches are somewhat less complex, additional aquifer characterization is needed to further evaluate these options. It is currently not well understood whether molybdenum can be efficiently attenuated using in-situ redox manipulations due to slow reaction kinetics. Mo attenuation under both aerobic and anaerobic conditions needs to be further evaluated but is expected to occur. Mo is more strongly sorbed to aluminum oxides than other metal oxides, and it is generally less sorptive and more mobile compared to As.	Reliability dependent on permeability of the subsurface and the amount and distribution of secondary iron or manganese (oxy-) hydroxides (for aerobic approach), or electron donors and soluble iron or manganese and sulfur that can be consistently distributed (for anaerobic approach). Reliable technology if injected materials can be distributed throughout the impacted aquifer. Bench- and/or pilot-scale treatability testing programs are needed to understand the biogeochemical processes that would effectively reduce migration of As and Mo in groundwater.
Hydraulic Containment ("Pump and Treat")	Hydraulic containment refers to the use of groundwater extraction to induce a hydraulic gradient for hydraulic capture or control the migration of impacted groundwater. This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature, reinjection into the groundwater, or reuse (e.g., land application, CCR conditioning, etc.). It is applicable to a variable mix of inorganic constituents, including dissolved As and Mo.	Pump and treat (P&T) is effective at providing hydraulic control, but it is unclear whether full groundwater remediation can be achieved without further understanding attenuation mechanisms at the Site. At AP-1, implementation of the corrective measure is contingent on completing additional assessment activities (i.e. high-resolution site characterization, additional pump tests, flow modeling, and capture zone analysis). This is needed to refine the constituent distribution in the subsurface to target specific zones for pumping for improved mass recovery efficiency/ effectiveness and to further evaluate the potential remedy performance.	Generally reliable for hydraulic containment, but uncertainty exists whether groundwater remediation goals can be achieved within a reasonable time frame without further understanding attenuation mechanisms.
Monitored Natural Attenuation (MNA)	MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods. Under certain conditions (e.g., through sorption, mineral precipitation or oxidation-reduction reactions), MNA effectively reduces the dissolved concentrations of inorganic constituents in groundwater. Attenuation mechanisms for inorganic constituents at CCR sites, including arsenic (As) and molybdenum (Mo) at AP-1, are either physical (e.g. dilution, dispersion, flushing, and related processes) or chemical (sorption or oxidation reduction reactions). Chemical attenuation processes include precipitation, and sorption reactions such as adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Further, oxidation-reduction (redox) reactions, via abiotic or biotic processes, can transform the valence states of some inorganic constituents to less soluble and thus less mobile forms. For As and Mo, the main attenuation processes include sorption to iron and manganese oxides (As and Mo), and formation of sparingly soluble sulfide minerals (As).	Physical and chemical MNA mechanisms for arsenic and molybdenum, including dilution, dispersion, sorption, and oxidation reduction reactions can be effective at achieving groundwater protection standards (GWPS) within a reasonable time frame. Attenuation processes for As and Mo are already occurring at the site as evidenced by groundwater data from the delineation wells. Source control will improve the mass balance such that the buffer capacity of the aquifer is unlikely to be exhausted, and the attenuation processes already at work for As and Mo at AP-1 will further enhance ongoing MNA.	Reliable as long as the aquifer conditions that result in As and Mo attenuation remain favorable and/or are being enhanced and sufficient attenuation capacity is present. MNA is reliable and can either be used as a stand-alone corrective measure for groundwater impacted by dissolved As and/or Mo, or in combination with a second technology.
Permeable Reactive Barrier	Permeable reactive barrier (PRB) technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. Either ZVI-Carbon matrix or solid carbon (bio-barrier) are currently proposed for the concurrent removal of As and Mo. The carbon could be composed of peat moss, mulch or another carbon source. Exact placement of the PRB is contingent on finalization of the nature and extent characterization. PRB walls are typically keyed into the bedrock. While the shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the higher permeability/conductivity of the PRB is not expected to impede groundwater flow. PRBs can also be constructed as “funnel and gate” systems, where a barrier wall directs groundwater to a smaller “treatment gate” filled with reactive media.	PRBs have been shown to effectively address As in groundwater, but additional testing is required for Mo to select the appropriate reactive media. The approach is expected to achieve GWPS for both constituents as impacted groundwater passes through the reactive barrier. Mo redox kinetics may be slow and hence a thicker wall might be needed relative to solely treating for As. Furthermore, additional testing is required to select the appropriate sorptive media mix, especially related to Mo.	Reliable groundwater corrective measure technology, but loss of reactivity over time may require re-installation depending on the duration of the remedy. Additional data collection, including conducting a bench and/or pilot study, is needed to better characterize current attenuation mechanisms and/or select the appropriate reactive media mix for a PRB wall.
Phytoremediation / *TreeWells*	Phytoremediation uses trees and other plants to degrade or immobilize constituents or achieve hydraulic control without the need for an above-ground water treatment system and infrastructure. Within the context of AP-1, this corrective measure would likely use an engineered (proprietary) TreeWell® phytoremediation system along the point of compliance or downgradient edge of the impacted groundwater for hydraulic control. The system promotes root development to the targeted groundwater zone (depth), allowing for hydraulic control of impacted groundwater. In addition, immobilization of As and Mo within the root zone as well as incidental uptake of dissolved As and Mo with groundwater is expected to occur concurrent with hydraulic control.	Once established (typically at the end of the third growing season), a TreeWell system is effective for providing hydraulic containment of groundwater, and potential reduction of As and Mo concentrations through immobilization and/or uptake and sequestration in the tree biomass; however, the main purpose is to provide hydraulic control. Given the current groundwater flow velocities, the approach is currently not considered viable. However, changing site conditions may make the corrective measure viable for the area downgradient of AP-1. Additional aquifer testing and/or groundwater flow modeling may be needed to confirm the suitability at that time.	Engineered phytoremediation is a proven technology where hydrogeologic factors are taken into account (e.g., hydraulic conductivity, flow velocity, depth to impacted groundwater zone, etc.). This is considered an active remedial approach through the use of trees as the "pumps" driving the system. Careful design will be needed to select the proper species, which will include consideration of groundwater chemistry, plant uptake of constituents, and groundwater flow modeling to evaluate the required number and placement of TreeWell units.
Subsurface Vertical Barrier Walls	This approach involves placing a barrier to groundwater flow in the subsurface, frequently around a source area, to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. Barrier walls can also be used in downgradient applications to limit discharge to a surface water feature or to reduce aquifer recharge from an adjacent surface water feature when groundwater extraction wells are placed near one. A variety of barrier materials can be used, including cement and/or bentonite slurries, geomembrane composite materials, or driven materials such as steel or vinyl sheet pile. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.	Barrier walls are a proven technology for seepage control and/or groundwater cutoff at impoundments. Slurry walls are limited by the depth of installation, which is approximately 90 ft bgs. However, site-specific geologic and technology-specific considerations may limit this depth to shallower installations. Within the context of AP-1, a barrier wall might be used in conjunction with a “funnel and gate” system for a PRB rather than a stand-alone technology. As such, groundwater with As and Mo above GWPS could either be directed to “treatment gates” for passive treatment (in a PRB) or migration of impacted groundwater could be minimized via barrier wall installation. Additional subsurface investigations, aquifer testing, and compatibility testing with site-specific groundwater will be needed.	Generally reliable as a barrier to groundwater flow; however, treatment of downgradient groundwater is incidental and not the primary objective.

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-1, Floyd County, Georgia

Corrective Measure	40 CFR 257.96(C)(1) Ease of Implementation	40 CFR 257.96(C)(1) Potential Impacts	40 CFR 257.96(C)(2) Time Requirement to Begin/Complete
Geochemical Approaches (In-Situ Injection)	Moderate. Installation of injection well network or other injection infrastructure would be required. Alternative installation approaches may be considered, such as along the downgradient edge of impacted groundwater, which would function similar to a PRB application. Potential for clogging of aquifer matrix and/or injection well infrastructure. Chemical distribution during injections (i.e., radius of influence) needs to be evaluated.	Minimal impacts are expected if remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and bench/pilot study results. Redox-altering processes have the potential to mobilize naturally-occurring constituents as an unintended consequence if not properly studied and implemented.	Installation of the injection network can be accomplished relatively quickly (1 to 2 months). However, a thorough pre-design investigation, geochemical modeling, and/or bench- and/or pilot-testing will be required to obtain design parameters prior to design and construction of the corrective measure, which may take up to 24 months. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation process kinetics of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.
Hydraulic Containment ("Pump and Treat")	Moderate. Proven approach, and supplemental installation of extraction wells/trenches is fairly straightforward. The extracted groundwater may potentially require an above-ground treatment system. A variety of sorption and precipitation approaches exist for ex-situ treatment of As and Mo. Operation and maintenance (O&M) requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.	Moderate. The main potential impacts are related to the presence and operation of an on-site above-ground water treatment facility and related infrastructure to convey and treat extracted groundwater. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone.	Installation of extraction wells and/or trenches can be accomplished relatively quickly (1 to 2 months). However, additional aquifer testing, system design and installation, and permit approval may be required, which may take up to 24 months. The initiation of the approach would be contingent on the start-up of the wastewater treatment infrastructure. Hydraulic containment can be achieved relatively quickly after startup of the extraction system, but uncertainty exists with respect to the time to achieve GWPS without additional data collection to better understand attenuation mechanisms for As and Mo.
Monitored Natural Attenuation (MNA)	Reasonably implementable with respect to infrastructure, but moderate to complex with respect to documentation. Proven approach, but additional data are needed to show that the existing attenuation capacity is sufficient to meet site objectives within a reasonable timeframe. A monitoring well network already exists to implement future groundwater monitoring efforts.	None. MNA relies on the natural processes active in the aquifer matrix to reduce constituent concentrations without disturbing the surface or the subsurface.	The infrastructure to initiate MNA is already in place. Demonstrating attenuation mechanisms and capacity can be time-consuming and can take up to 24 months. MNA is expected to be successful within a reasonable time frame following pond closure. Engineering measures will be implemented during closure of AP-1 to minimize potential impacts to the subsurface during closure activities and routine groundwater monitoring will be used to verify that groundwater impacts remain stable or decrease over time.
Permeable Reactive Barrier	Moderate to difficult. Trenching would be required to install a mix of reactive materials in the subsurface. Continuous trenching may be the most feasible construction method. Installation methods and materials are readily available. Once installed, treatment will be passive and O&M requirements are minimal if replacement of the PRB is not necessary.	Minimal impacts are expected following the construction of the remedy. However, ZVI has the potential to create anaerobic conditions downgradient of the PRB wall that may mobilize redox-sensitive naturally-occurring constituents. These conditions need to be carefully monitored. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures.	Installation of a PRB can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, bench- and/or pilot-testing would be required to obtain design parameters prior to design and construction of the remedy, which may take up to 24 months. Once installed, the time to achieve GWPS downgradient of the PRB is anticipated to be relatively quick.
Phytoremediation / *TreeWells*	Reasonably implementable to moderate. Engineered approach has been proven effective, and specific depth zones can be targeted. Trees are installed as "tree wells" in a large diameter boring to get the roots deep enough to intercept impacted groundwater flow paths. Area must be clear of above and below-ground structures (i.e., power lines). The system, once established (approximately three growing seasons), is a self-maintaining, sustainable remedial system that has no external energy requirements and little maintenance (i.e., efforts normally associated with landscaping).	Minimal impacts are expected. In fact, there are several positive impacts expected, including enhanced aesthetics, wildlife habitat, and limited energy consumption.	The design phase will require some groundwater modeling for optimal placement of the TreeWell units, which may take up to 6 months. Depending on the number of required units, the installation effort is expected to last several weeks. Hydraulic capture/control is expected approximately three years after planting and system performance is expected to further improve over time.
Subsurface Vertical Barrier Walls	Moderate to difficult. Trenching will be required to fill in the various slurry mixes; alternatively, sheet pile installations can be accomplished without excavation of trenches. The application of barrier walls is limited by the depth of installation, which similar to PRBs, should be keyed into a low permeability layer such as a thick clay layer or bedrock. Installation methods and materials are readily available. Once installed, above-ground infrastructure to pump and treat groundwater will be required. O&M requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.	Minimal impacts are expected following the construction of the remedy. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures. Changes to groundwater flow patterns due to installation of the barrier wall are expected, which can affect other aspects of groundwater corrective action. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone that may result in the mobilization of other constituents that may require treatment.	Installation of a barrier wall can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, some design phase and additional aquifer and compatibility testing will be required, which may take up to 24 months. Once installed, preventing migration of constituents dissolved in groundwater is anticipated to be relatively quick. Since this approach does not treat the downgradient area of impacted groundwater but prevents migration from a source area, it will likely have to be maintained long-term and coupled with other approaches.

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-1, Floyd County, Georgia

	40 CFR 257.96(C)(3)		
Corrective Measure	**Institutional Requirements**	**Other Env or Public Health Requirements**	**Relative Costs**
Geochemical Approaches (In-Situ Injection)	Deed restrictions may be necessary until in-situ treatment has achieved GWPS. A new UIC permit (for in-situ injections) would be required to implement this corrective measure. No other institutional requirements are expected at this time.	None expected at this point. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-1. Potential for mobilization of redox-sensitive constituents exists during implementation of an anerobic attenuation approach. Following installation, the remedy is passive.	Medium (depending on expanse of injection network required and injectate volume required per derived design parameters)
Hydraulic Containment ("Pump and Treat")	Depending on the effluent management strategy, modifications to the existing NPDES permit may be required, or obtaining a new underground injection control (UIC) permit may be needed if groundwater reinjection is chosen. In addition, deed restrictions may be required as long as groundwater conditions are above regulatory standards for unrestricted use.	Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-1. Above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on remedy duration, complexity of above-ground treatment system, and volume of water processed)
Monitored Natural Attenuation (MNA)	MNA may require the implementation of institutional controls, such as deed restrictions, to preclude potential exposure to groundwater within the footprint of impacted groundwater until GWPS are achieved.	Little to no physical disruption to remediation areas and no adverse construction-related impacts are expected on the surrounding community. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-1.	Low to medium
Permeable Reactive Barrier	Deed restrictions may be necessary for groundwater areas upgradient of the PRB (if not installed along the waste boundary). No other institutional requirements are expected at this time.	None expected at this point. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-1. Following installation, the remedy is passive. However, certain treatment media (such as ZVI) have the potential to mobilize naturally-occurring constituents downgradient of the PRB.	Medium to high (for installation) - minimal O&M requirements if replacement is not necessary
Phytoremediation / *TreeWells*	Deed restrictions may be necessary for groundwater areas upgradient of the TreeWell system. No other institutional requirements are expected at this time.	None expected at this point. Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-1. Following installation, the remedy is passive and does not require external energy.	Medium (for installation) - minimal O&M requirements
Subsurface Vertical Barrier Walls	Deed restrictions may be necessary for groundwater areas downgradient of the barrier wall until remedial goals are met. No other institutional requirements are expected at this time.	Based on downgradient sampling results near adjacent water features, there currently are no complete exposure pathways for potential receptors downgradient of AP-1. Due to the need for groundwater extraction associated with barrier walls, above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on length and depth of wall, remedy duration and complexity of above-ground treatment system)

Table 2
Summary of Activity
Plant Hammond AP-1, Flyod County, Georgia

Corrective Measure (CM)	Data Collected/Actions Completed	Applicable Locations Sampled	Applicability & Rationale	Comments/Planned Actions
Geochemical Approaches (In-Situ Injection)	Collected supplementary groundwater samples to evaluate: (i) attenuation mechanisms and rates and aquifer capacity for attenuation; and (ii) amount and distribution of select geochemical parameters (including Fe, Mn, DOC and other ligands) that may affect geochemical mechanisms.	HGWC-7, HGWC-8, HGWC-9, HGWC-11, HGWC-12, HGWC-13, MW-28D	Understand geochemical baseline conditions to evaluate the need for and type of geochemical amendments required to attenuate constituents of interest.	(i) Collect and submit aquifer solid samples for sequential extraction procedure (SEP) for analysis of arsenic (As) and molybdenum (Mo) in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Mo, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity. (ii) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of conducting injections.
Hydraulic Containment	Collected supplementary groundwater samples to evaluate groundwater parameters specific to the existing NPDES permitted discharge limits and capabilities of on-site low volume wastewater treatment plant (LVWTP)	HGWC-8, HGWC-10, MW-19	Evaluate groundwater concentrations relative to permitted discharge limits for the plant in support of processing/discharging extracted groundwater. Determine if a permit update is required to address potentially new groundwater-specific parameters.	Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of designing a groundwater extraction system.
Monitored Natural Attenuation (MNA)	Collected supplementary groundwater samples both upgradient and downgradient of unit to evaluate in situ attenuation mechanisms and rates and aquifer capacity for attenuation	HGWA-1, HGWA-2, HGWA-3, HGWC-7, HGWC-8 HGWC-9, HGWC-10, HGWC-11, HGWC-12, HGWC-13, MW-5, MW-6, MW-7, MW-19, MW-20, MW-24D, MW-25D, MW-26D, MW-27D, MW-28D, MW-29	Evaluate attenuation mechanisms and rates and aquifer capacity for attenuation. Multiple sampling events required to build adequate data set for determining attenuation mechanism trends.	(i) Continue to conduct supplementary groundwater sampling events during pre-closure and closure phase activities to assess plume stability and attenuation mechanisms. (ii) Collect and submit aquifer solid samples for SEP for analysis of As and Mo in the aquifer solid matrix; XRD analysis for mineralogy; total As, Mo, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity.
Permeable Reactive Barrier (PRB)	Collected supplementary groundwater samples to evaluate attenuation mechanisms and rates and aquifer capacity for attenuation applicable to evaluating reactive media options	HGWC-7, HGWC-8 HGWC-9, HGWC-11, HGWC-12, HGWC-13, MW-28D	Evaluate in situ geochemical conditions and attenuation mechanisms that need to be considered when evaluating reactive media and initial design of a bench-scale treatability study.	(i) Initial identification of possible PRB reactive media based on current dataset, with refinement pending review of subsequent geochemical and aquifer attenuation data. (ii) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of designing a groundwater extraction system.
Phytoremediation (*TreeWells* ®)	Collected supplementary groundwater samples to evaluate in situ geochemical conditions and plant nutrient levels needed to establish phytoremediation measures (TreeWells®) downgradient of unit	HGWC-8, HGWC-10, MW-19, MW-20	Careful design will be needed to select the proper species, which will include consideration of groundwater chemistry, plant uptake of constituents, and groundwater flow modeling to evaluate the required number and placement of *TreeWell* ® units.	(i) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of developing a groundwater flow model to assess placement of *TreeWell* ® units. (ii) Continue to conduct supplementary groundwater sampling events to evaluate seasonal fluctuations in groundwater chemistry and plant nutrient levels.
Subsurface Vertical Barrier Walls	Collected supplementary groundwater samples to evaluate groundwater parameters specific to the existing NPDES permitted discharge limits, since limited pumping (and discharge) of groundwater will be required to maintain an inward hydraulic gradient inside/upgradient of the vertical barrier.	HGWC-8, HGWC-10, MW-19	Evaluate groundwater concentrations relative to permitted discharge limits for the plant in support of processing/discharging extracted groundwater. Determine if a permit update is required to address potentially new groundwater-specific parameters.	(i) Conduct pneumatic slug tests to evaluate aquifer transmissivity, storage coefficient, hydraulic conductivity in support of developing a groundwater flow model to assess placement of barrier walls, most likely in conjunction with PRBs, and placement of possible groundwater extraction system to maintain designed hydraulic gradients. (ii) Evaluate resources needed to conduct a bench compatibility test of barrier wall material.

Table 3a

Summary of Groundwater Analytical Data - Geochemical Parameter Evaluation

Plant Hammond AP-1, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-2	HGWA-3	HGWC-7	HGWC-8	HGWC-9	HGWC-10	HGWC-11	HGWC-12	HGWC-13	MW-5[1]
Sample Date:	9/23/2019	9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/26/2019	9/25/2019
Parameter											
Alkalinity, Bicarbonate ($CaCO_3$)	279	29.0	174	151	130	171	248	71.0	157	102	165
Alkalinity, Total as $CaCO_3$	279	29.0	174	151	130	171	248	71.0	157	102	165
Dissolved Organic Carbon	1.1	2.1	ND	ND	ND (0.58 J)	ND	ND (0.63 J)	ND (0.92 J)	ND (0.76 J)	1.7	ND (0.57 J)
Iron	ND (0.022 J)	1.7	0.53	0.18	ND (0.037 J)	0.32	ND	ND	0.11	1.4	0.051
Magnesium	5.4	2.4	4.8	10.2	14.0	18.0	12.2	15.5	15.6	24.4	10.8
Manganese	0.20	1.1	0.21	0.31	0.18	0.43	2.1	0.017	1.9	3.7	ND (0.0042 J)
Orthophosphate as P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphorous	ND	ND	ND (0.026 J)	ND	ND (0.023 J)	ND	ND	ND	ND	ND (0.022 J)	ND
Potassium	0.33	0.88	0.42	2.8	6.9	3.2	1.7	2.5	7.5	5.0	ND (0.96 J)
Sodium	20.4	8.7	5.2	10.4	8.5	13.4	11.9	6.7	10.5	10.1	21.6
Sulfide	ND	ND	ND	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)

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

(1) Well is designated a delineation monitoring well.

(2) Parameters are reported in units of milligrams per liter (mg/L).

Table 3a

Summary of Groundwater Analytical Data - Geochemical Parameter Evaluation

Plant Hammond AP-1, Floyd County, Georgia

Well ID:	MW-6(1)	MW-7(1)	MW-19(1)	MW-20(1)	MW-24D(1)	MW-25D(1)	MW-26D(1)	MW-27D(1)	MW-28D(1)	MW-29(1)	MW-30D(1)
Sample Date:	9/26/2019	9/26/2019	9/27/2019	9/25/2019	9/26/2019	9/27/2019	9/26/2019	9/26/2019	9/26/2019	9/24/2019	9/24/2019
Parameter											
Alkalinity, Bicarbonate ($CaCO_3$)	234	113	75.0	211	102	255	175	166	173	187	435
Alkalinity, Total as $CaCO_3$	234	113	75.0	211	102	255	175	166	173	187	435
Dissolved Organic Carbon	ND (0.52 J)	ND	ND (0.79 J)	ND	ND	1.8	ND	ND	ND	ND	1.4
Iron	0.51	ND (0.037 J)	0.10	3.1	1.0	0.22	0.40	ND (0.015 J)	0.89	0.13	0.30
Magnesium	14.3	9.8	12.3	8.6	5.1	8.5	15.9	19.7	22.5	12.7	5.2
Manganese	0.55	0.070	3.2	0.17	0.72	0.040	0.17	0.058	0.12	1.4	0.044
Orthophosphate as P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphorous	ND (0.017 J)	ND	ND	0.083	ND (0.025 J)	ND (0.019 J)	ND	ND	ND	ND	--
Potassium	1.2	ND (0.79 J)	3.6	ND (0.31 J)	ND (0.45 J)	ND (0.69 J)	2.0	ND (0.92 J)	ND (0.99 J)	1.2	3.3
Sodium	13.1	8.2	8.4	11.0	11.3	118	12.2	27.8	9.6	13.0	704
Sulfide	ND	ND	ND	ND	ND	0.49	ND	ND	ND	ND	0.80

Notes:

-- = Parameter was not analyzed

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

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

(1) Well is designated a delineation monitoring well.

(2) Parameters are reported in units of milligrams per liter (mg/L).

Table 3b

Summary of Groundwater Analytical Data - Agronomic Parameter Evaluation
Plant Hammond AP-1, Floyd County, Georgia

Well ID:	HGWC-8	HGWC-10	MW-19[(1)]	MW-20[(1)]
Sample Date:	9/24/2019	9/27/2019	9/27/2019	9/25/2019
Parameter				
Nitrogen, Ammonia	2.6	ND	1.0	0.1
Copper	ND	ND	ND	ND
Nitrate as N	ND (0.012 J)	ND (0.029 J)	ND (0.039 J)	0.70
Nitrite as N	ND (0.028 J)	ND	ND (0.032 J)	ND
Total Dissolved Solids	486	626	420	455
Total Hardness as $CaCO_3$ (SM 2340B)	300	501000	299000	337000
Zinc	ND (0.0032 J)	ND	ND (0.0055 J)	ND

Notes:
J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)
ND = Indicates the parameter was not detected above the analytical MDL
(1) Well is designated a delineation monitoring well.
(2) Parameters are reported in units of milligrams per liter (mg/L).

Table 3c

Summary of Groundwater Analytical Data - NPDES Compliance Evaluation

Plant Hammond AP-1, Floyd County, Georgia

Well ID:	HGWC-8	HGWC-10	MW-19[1]
Sample Date:	9/24/2019	9/27/2019	9/27/2019
Parameter			
Nitrogen, Ammonia	2.6	ND	1.0
BOD, 5 day	ND	ND	ND
Oil and Grease	ND	ND	ND
Mercury	ND	ND	ND
Residual Chlorine	ND	ND	ND
Total Kjeldahl Nitrogen	2.8	ND	1.2
Total Organic Nitrogen	ND	ND	ND
Total Suspended Solids	ND	ND	ND

Notes:

ND = Indicates the parameter was not detected above the analytical method detection limit (MDL)

NPDES = National Pollutant Discharge Elimination System

(1) Well is designated a delineation monitoring well.

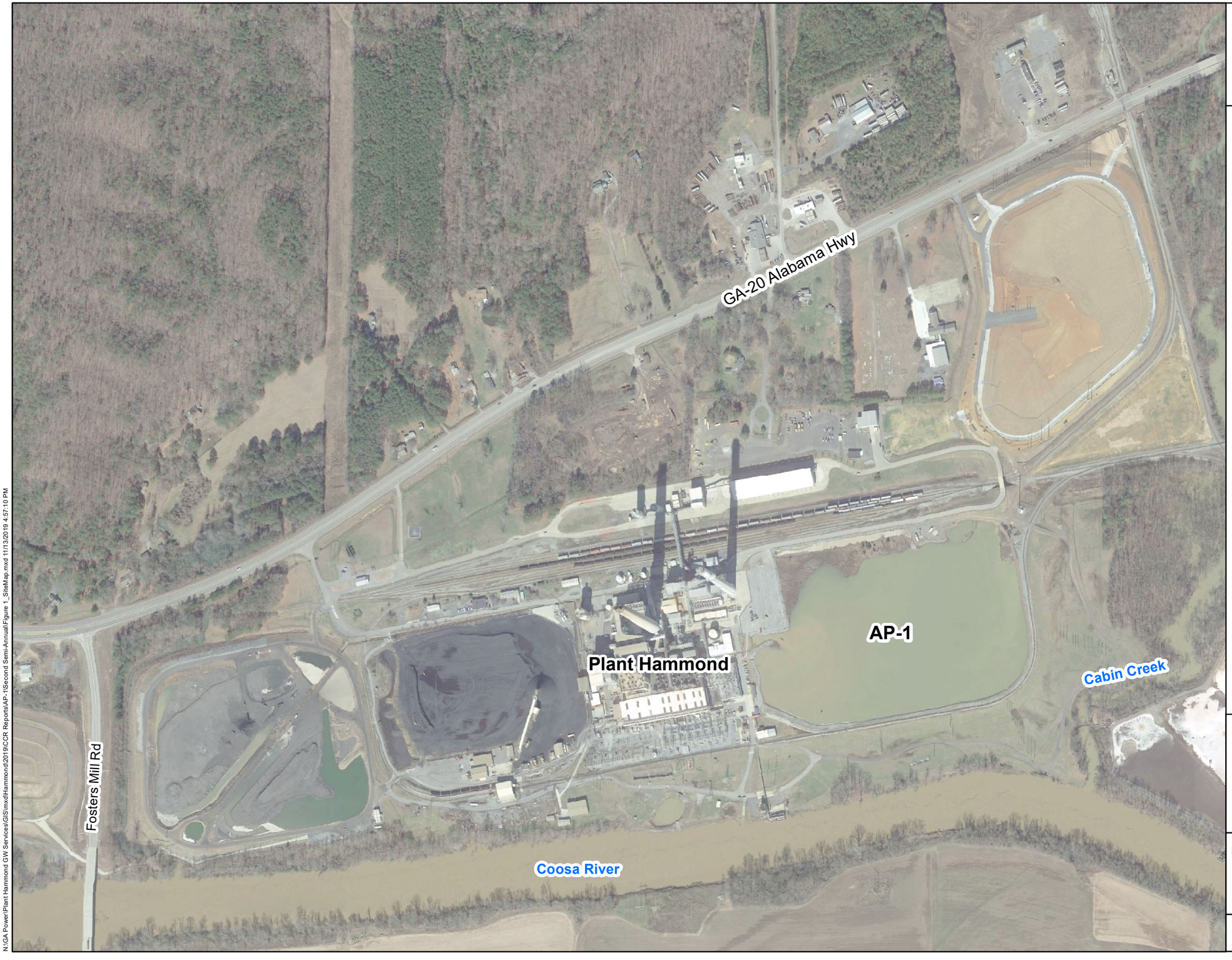
(2) Parameters are reported in units of milligrams per liter (mg/L).

Table 4
Proposed ACM Supplementary Data Collection Tasks for First Semi-Annual Period 2020
Plant Hammond AP-1, Flyod County, Georgia

Data Collection Event	Applicable CMs [1]	Applicability/Rationale	Field Component	Parameters of Interest (POI)	Analytical Lab Performing Analysis
Groundwater sampling	3, 4, 5	Evaluation of: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) in situ conditions to establish phytoremediation measures downgradient of unit	Collect groundwater samples from existing well network currently sampled under the assessment monitoring program.	In addition to routine App III/IV parameters: orthophosphate, phosphorous, sulfide, iron, manganese, magnesium, sodium, potassium, total alkalinity, bicarbonate, dissolved organic carbon (DOC), nitrate/nitrite, total hardness, zinc, total dissolved solids, copper, ammonia nitrogen.	Pace-ATL
Aquifer solids sampling (Collect/Submit archived rock cores)	1, 3, 4	Evaluation of within aquifer matrix: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) mineralogy characterization	Collect samples from extracted rock cores archived at the SCS Civil Field Services (CFS) Logan Martin, AL, facility.	Sequential extraction procedure (SEP) for analysis of arsenic (As) and molybdenum (Mo) to characterize As and Mo in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Mo, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity	TestAmerica-Canton; TestAmerica-Knoxville (SEP); DCM Science Lab (XRD)
Aquifer solids sampling	1, 3, 4	Evaluation of within aquifer matrix: (i) attenuation mechanisms and rates and aquifer capacity for attenuation (ii) mineralogy characterization	Collect unconsolidated aquifer solid material from the alluvium, residuum, and/or highly weathered rock zones using a DPT rig (3-4 locations downgradient and 1-2 background locations).	Sequential extraction procedure (SEP) for analysis of arsenic (As) and molybdenum (Mo) to characterize As and Mo in the aquifer solid matrix; x-ray diffraction (XRD) analysis for mineralogy; total As, Mo, aluminum, iron, manganese, silica concentrations; cation/anion exchange capacity	TestAmerica-Canton; TestAmerica-Knoxville (SEP); DCM Science Lab (XRD)
Pneumatic slug tests	1, 2, 4, 5, 6	Refine our understanding of hydrogeologic conditions within the anticipated treatment area. Slug data will be used in conjunction with groundwater data to prepare a groundwater flow model that evaluates conceptual CM designs.	Conduct pneumatic slug tests in select wells either not previously tested or in those wells for which historical data may be in question.	Transmissivity, storage coefficient, hydraulic conductivity	n/a

Note:
(1) Corrective Measure (CM) Codes:
1 - Geochemical Approaches (In-Situ Injection)
2 - Hydraulic Containment
3 - Monitored Natural Attenuation (MNA)
4 - Permeable Reactive Barrier (PRB)
5 - Phytoremediation (TreeWells®)
6 - Subsurface Vertical Barrier Walls

FIGURES



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

0 250 500 1,000
SCALE IN FEET

SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
FLOYD COUNTY, GEORGIA

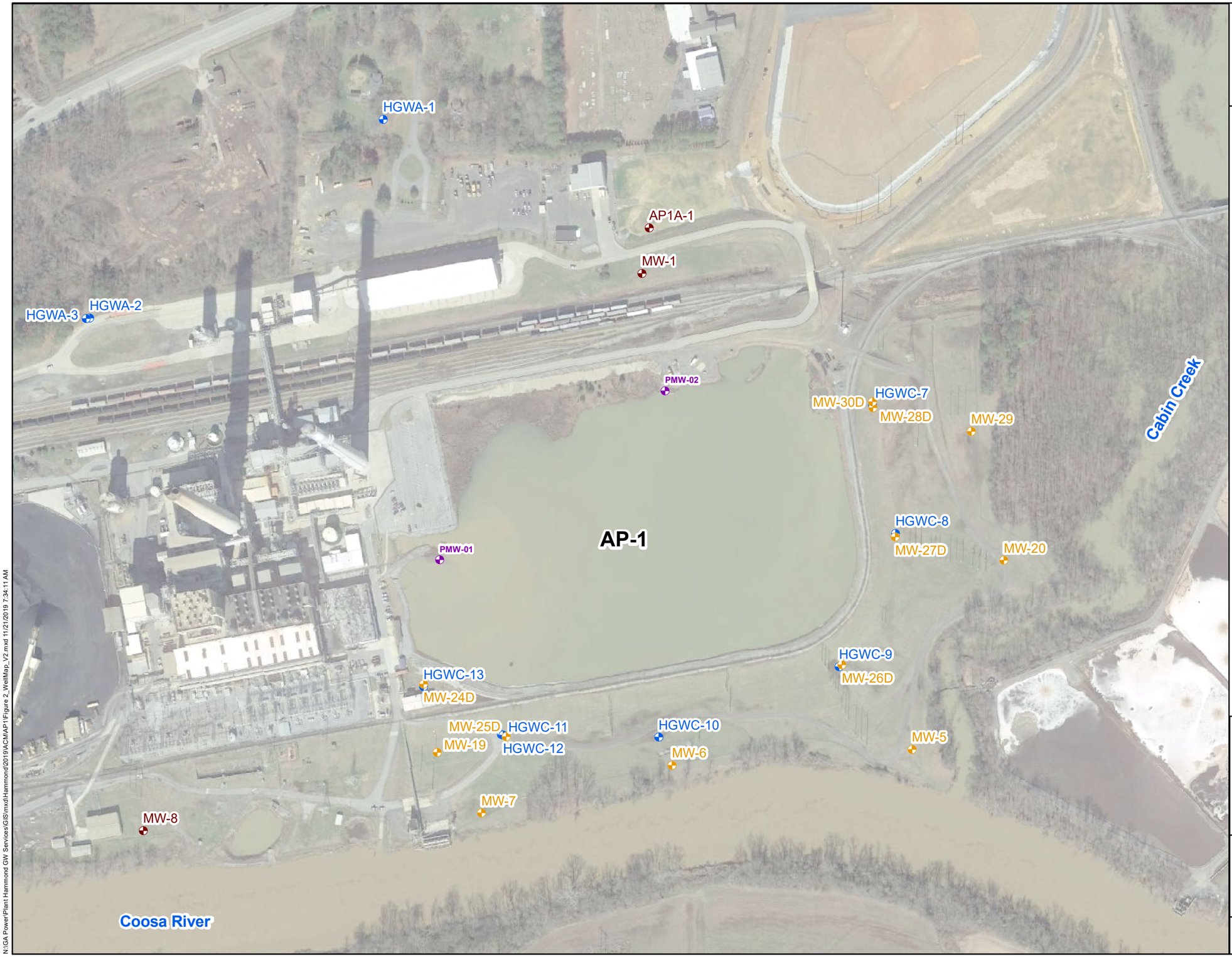
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | DECEMBER 2019

FIGURE 1

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-1\Second Semi-Annual\Figure 1_SiteMap.mxd 11/13/2019 4:57:10 PM



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LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer
- Pore Water Piezometer

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

0 150 300 600

SCALE IN FEET

MONITORING WELL NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

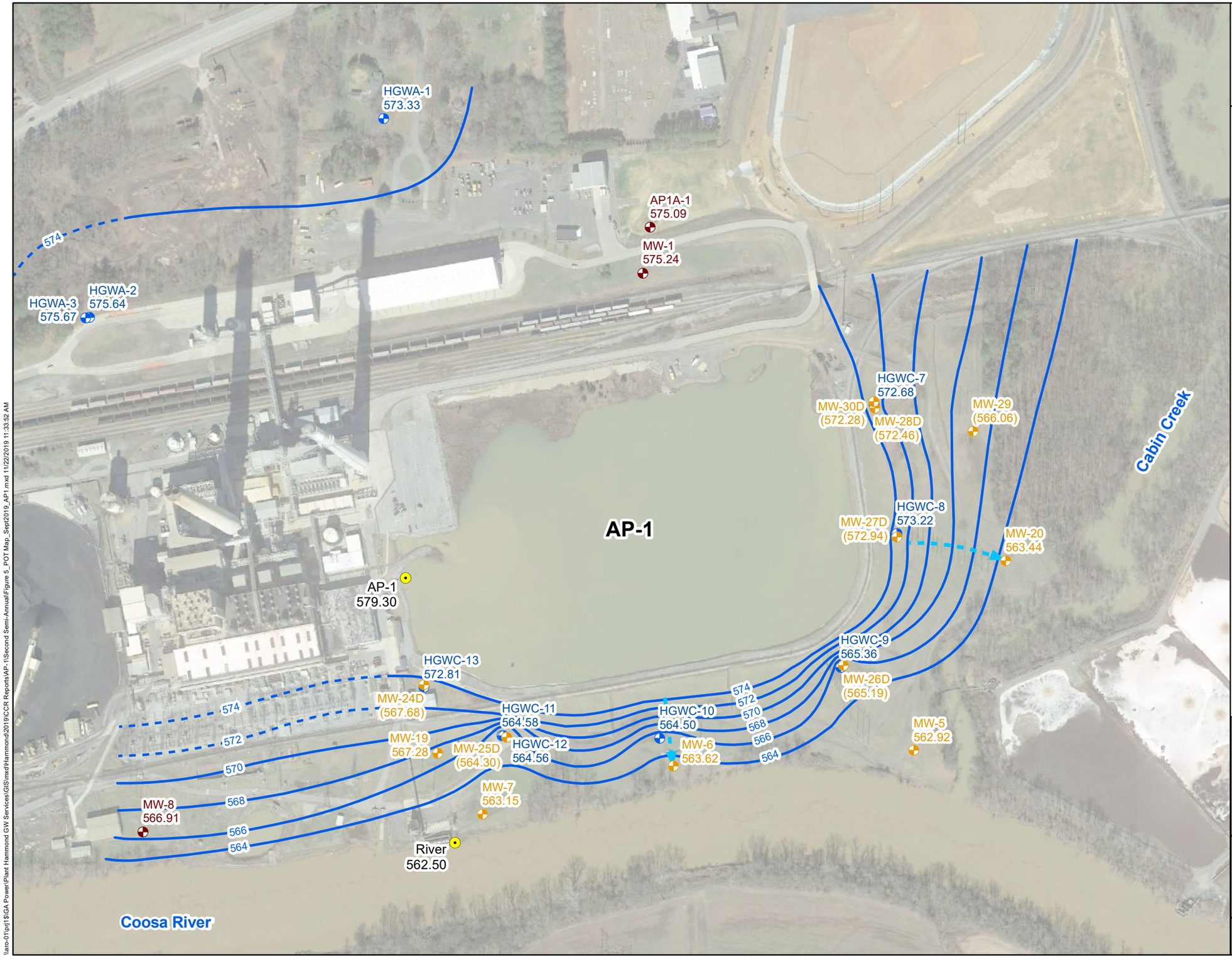
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | DECEMBER 2019

FIGURE 2

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\ACMAP1\Figure 2_WellMap_V2.mxd 11/21/2019 7:34:11 AM



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LEGEND

- Compliance Monitoring Well
- Delineation Monitoring Well
- Groundwater Level Monitoring Piezometer
- Surface Water Staff Gauge
- Groundwater Elevation Iso-Contour (inferred where dashed)
- Approximate Groundwater Flow Direction

Notes:
1. Water level elevation recorded on September 23, 2019. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88
2. Water elevation in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
3. The AP-1 surface water staff gauge measurement was not used in development of groundwater contours.
4. Aerial photograph source: Google Earth Pro, February 2018.

0 150 300 450 600

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP - SEPTEMBER 2019

GEORGIA POWER COMPANY
PLANT HAMMOND AP-1
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA | DECEMBER 2019

FIGURE 3

\\aro-01\prj1$\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2019\CCR Reports\AP-1\Second Semi-Annual\Figure 5_POT Map_Sept2019_AP1.mxd 11/22/2019 11:33:52 AM

APPENDIX A

Laboratory Analytical Reports

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623499

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 24, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623499001	**HGWA-1**	Water	09/23/19 16:15	09/24/19 15:23
2623499002	**HGWA-2**	Water	09/23/19 16:55	09/24/19 15:23
2623499003	**HGWA-3**	Water	09/23/19 17:10	09/24/19 15:23

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623499001	**HGWA-1**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623499002	**HGWA-2**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623499003	**HGWA-3**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Sample: HGWA-1 **Lab ID: 2623499001** Collected: 09/23/19 16:15 Received: 09/24/19 15:23 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	**0.022J**	mg/L	0.040	0.015	1	10/22/19 14:30	10/23/19 22:51	7439-89-6	
Magnesium	**5.4**	mg/L	0.050	0.011	1	10/22/19 14:30	10/23/19 22:51	7439-95-4	
Manganese	**0.20**	mg/L	0.040	0.0061	1	10/22/19 14:30	10/23/19 22:51	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	10/22/19 14:30	10/23/19 22:51	7723-14-0	
Potassium	**0.33**	mg/L	0.20	0.026	1	10/22/19 14:30	10/23/19 22:51	7440-09-7	
Sodium	**20.4**	mg/L	1.0	0.19	1	10/22/19 14:30	10/23/19 22:51	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**279**	mg/L	20.0	20.0	1		09/25/19 16:36		
Alkalinity, Total as CaCO3	**279**	mg/L	20.0	20.0	1		09/25/19 16:36		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:26		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:20	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**1.1**	mg/L	1.0	0.50	1		10/24/19 23:28		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Sample: HGWA-2 **Lab ID: 2623499002** Collected: 09/23/19 16:55 Received: 09/24/19 15:23 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	**1.7**	mg/L	0.040	0.015	1	10/22/19 14:30	10/23/19 22:56	7439-89-6	
Magnesium	**2.4**	mg/L	0.050	0.011	1	10/22/19 14:30	10/23/19 22:56	7439-95-4	
Manganese	**1.1**	mg/L	0.040	0.0061	1	10/22/19 14:30	10/23/19 22:56	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	10/22/19 14:30	10/23/19 22:56	7723-14-0	
Potassium	**0.88**	mg/L	0.20	0.026	1	10/22/19 14:30	10/23/19 22:56	7440-09-7	
Sodium	**8.7**	mg/L	1.0	0.19	1	10/22/19 14:30	10/23/19 22:56	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**29.0**	mg/L	20.0	20.0	1		09/25/19 16:58		
Alkalinity, Total as CaCO3	**29.0**	mg/L	20.0	20.0	1		09/25/19 16:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:27		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:23	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**2.1**	mg/L	1.0	0.50	1		10/25/19 00:17		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Sample: HGWA-3 **Lab ID: 2623499003** Collected: 09/23/19 17:10 Received: 09/24/19 15:23 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	**0.53**	mg/L	0.040	0.015	1	10/22/19 14:30	10/23/19 23:24	7439-89-6	
Magnesium	**4.8**	mg/L	0.050	0.011	1	10/22/19 14:30	10/23/19 23:24	7439-95-4	
Manganese	**0.21**	mg/L	0.040	0.0061	1	10/22/19 14:30	10/23/19 23:24	7439-96-5	
Phosphorus	**0.026J**	mg/L	0.050	0.023	1	10/22/19 14:30	10/23/19 23:24	7723-14-0	
Potassium	**0.42**	mg/L	0.20	0.026	1	10/22/19 14:30	10/23/19 23:24	7440-09-7	
Sodium	**5.2**	mg/L	1.0	0.19	1	10/22/19 14:30	10/23/19 23:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**174**	mg/L	20.0	20.0	1		09/25/19 17:01		
Alkalinity, Total as CaCO3	**174**	mg/L	20.0	20.0	1		09/25/19 17:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/25/19 12:28		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 09:25	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/25/19 00:28		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 37339 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 168935 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	10/23/19 22:41	
Magnesium	mg/L	ND	0.050	0.011	10/23/19 22:41	
Manganese	mg/L	ND	0.040	0.0061	10/23/19 22:41	
Phosphorus	mg/L	ND	0.050	0.023	10/23/19 22:41	
Potassium	mg/L	ND	0.20	0.026	10/23/19 22:41	
Sodium	mg/L	ND	1.0	0.19	10/23/19 22:41	

LABORATORY CONTROL SAMPLE: 168936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.1	107	80-120	
Magnesium	mg/L	1	1.1	107	80-120	
Manganese	mg/L	1	1.1	106	80-120	
Phosphorus	mg/L	1	1.1	107	80-120	
Potassium	mg/L	1	1.1	108	80-120	
Sodium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168937 168938

Parameter	Units	2623499002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	1.7	1	1	2.7	2.8	101	106	75-125	2	20	
Magnesium	mg/L	2.4	1	1	3.4	3.4	101	106	75-125	1	20	
Manganese	mg/L	1.1	1	1	2.1	2.1	101	105	75-125	2	20	
Phosphorus	mg/L	ND	1	1	1.0	1.0	102	103	75-125	1	20	
Potassium	mg/L	0.88	1	1	1.9	1.9	97	101	75-125	2	20	
Sodium	mg/L	8.7	1	1	9.5	9.8	84	112	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 35970 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 161956 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	09/25/19 16:26	

LABORATORY CONTROL SAMPLE: 161957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	101	101	85-115	

SAMPLE DUPLICATE: 161958

Parameter	Units	2623499001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	279	281	1	10	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 35930 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 161749 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/25/19 11:51	

LABORATORY CONTROL SAMPLE: 161750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 161862 161863

Parameter	Units	2623499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.52	0.52	103	103	80-120	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 35996 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 162154 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/26/19 09:18	

LABORATORY CONTROL SAMPLE: 162155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162156 162157

Parameter	Units	2623499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.48	0.47	96	94	30-129	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623499

QC Batch: 581439 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623499001, 2623499002, 2623499003

METHOD BLANK: 3160596 Matrix: Water
Associated Lab Samples: 2623499001, 2623499002, 2623499003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/24/19 23:00	

LABORATORY CONTROL SAMPLE: 3160597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	19.3	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3160598 3160599

Parameter	Units	2624536004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	20.1	19.8	100	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3160600 3160601

Parameter	Units	2624536010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	20.2	20.0	101	100	80-120	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623499

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623499

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623499001	**HGWA-1**	EPA 3010A	37339	EPA 6010D	37380
2623499002	**HGWA-2**	EPA 3010A	37339	EPA 6010D	37380
2623499003	**HGWA-3**	EPA 3010A	37339	EPA 6010D	37380
2623499001	**HGWA-1**	SM 2320B	35970		
2623499002	**HGWA-2**	SM 2320B	35970		
2623499003	**HGWA-3**	SM 2320B	35970		
2623499001	**HGWA-1**	SM 4500-P	35930		
2623499002	**HGWA-2**	SM 4500-P	35930		
2623499003	**HGWA-3**	SM 4500-P	35930		
2623499001	**HGWA-1**	SM 4500-S2 D	35996		
2623499002	**HGWA-2**	SM 4500-S2 D	35996		
2623499003	**HGWA-3**	SM 4500-S2 D	35996		
2623499001	**HGWA-1**	SM 5310B	581439		
2623499002	**HGWA-2**	SM 5310B	581439		
2623499003	**HGWA-3**	SM 5310B	581439		

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): N N N N N N Y (N/A)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
1	HGWA-1		G	9/23/19	15:40	9/23/19	16:15	[illegible]	6	2			3	1					Y	Y	Y	Y	Y	Y	Y		ortho phosphate was field filtered
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

09-23-2019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / Geosyntec	09-23-19	17:45	Nolia Munton	9/23/19	17:45				
	Nolia Munton / Geosyntec	9/23/19	19:40	[signature] / Pace	9.24.19	1413				
	[signature] / Pace	9.24.19	1523	Charles Hawley	9/24/19	1523	3.8	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Gibbs

SIGNATURE of SAMPLER: [signature]

DATE Signed: 09-23-2019

WO#: 2623499

2623499

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com
Address: 2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:
Atlanta, GA 30339		Address:
Email: jabraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: betsy.mcdaniel@pacelabs.com,
Requested Due Date: Standard TAT	Project #: GW6581	Pace Profile #: 327 (AP)

Regulatory Agency:

State / Location: GA

MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
Requested Analysis Filtered (Y/N)																			N	N	N	N	N	N	Y		
1	HGWA-2	WT	G	9-23-19	1535	9-23-19	1655	22	6	2			3	1					Y	Y	Y	Y	Y	Y	Y		orthophosphate was filtered in field
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BRW 9-23-19

ADDITIONAL COMMENTS	RELINQUISHED 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)
	Ben Weinmann / Geosyntec	9-23-19	1745	Nadia Martin / Geosyntec	9/23/19	1745				
	Nadia Martin / Geosyntec	9/23/19	1940	[illegible] / Pace	9-24-19	1483				
	[illegible] / Pace	9.24.19	1523	Charles Hurls	9/24/19	1523	3.8	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: [signature]

DATE Signed: 9/23/19

WO#: 2623499

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

Pace Analytical

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GWC5B1

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon					Residual Chlorine (Y/N)	
	Requested Analysis Filtered (Y/N)																	Y/N	N	N	N	N	N	N	Y/N						
1	HGWA-3	WT	G	9/23/19	1611	9/23/19	1710	22	6	2			3	1				Y	Y	Y	Y	Y	Y	Y					N	orthophosphate was field filtered
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

NM 09/23/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Noelia Muskus/Georgia Power	9/23/19	19:40	1 Pace	9.24.19	1413				
	1 Pace	9.24.19	1523	Charles Hunter	9/24/19	38	X	X	X	X

WO#: 2623499

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/23/19

Pace Analytical

Sample Condition Upon Receipt

WO#: 2623499

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

Client Name: GA Power CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Optional
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 214

Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.8°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/24/19 CO

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 06, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623556

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623556

Pace Analytical Services Atlanta
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

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623556001	**FB-01**	Water	09/24/19 17:25	09/25/19 14:03
2623556002	**EB-01**	Water	09/24/19 17:40	09/25/19 14:03

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623556

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623556001	**FB-01**	EPA 6010	LEC	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623556002	**EB-01**	EPA 6010	LEC	8	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: FB-01 **Lab ID: 2623556001** Collected: 09/24/19 17:25 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:32	7439-89-6	
Magnesium	ND	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:32	7439-95-4	
Manganese	ND	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:32	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:32	7723-14-0	N2
Potassium	ND	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:32	7440-09-7	
Sodium	ND	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:32	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	ND	ug/L	3210	506	1	10/08/19 14:47	10/09/19 21:32		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 10:40	7440-50-8	
Zinc	**0.0023J**	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 10:40	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:42	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 12:49		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/02/19 12:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/01/19 16:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:27		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:39	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:54		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:51	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:06		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: FB-01 **Lab ID: 2623556001** Collected: 09/24/19 17:25 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.016J**	mg/L	0.050	0.0050	1		09/26/19 09:36	14797-55-8	
Nitrite as N	**0.021J**	mg/L	0.050	0.011	1		09/26/19 09:36	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 10:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	09/30/19 08:40	10/01/19 11:51	7727-37-9	M1
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 14:58		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: EB-01 **Lab ID: 2623556002** Collected: 09/24/19 17:40 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Calcium	ND	mg/L	0.50	0.064	1	10/08/19 14:47	10/09/19 21:46	7440-70-2	
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:46	7439-89-6	
Magnesium	ND	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:46	7439-95-4	
Manganese	ND	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:46	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:46	7723-14-0	N2
Potassium	ND	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:46	7440-09-7	
Sodium	ND	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:46	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	ND	mg/L	3.2	0.51	1	10/08/19 14:47	10/09/19 21:46		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 10:46	7440-50-8	
Zinc	**0.0037J**	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 10:46	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:45	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/02/19 12:53		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/02/19 12:53		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/01/19 16:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:27		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:39	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:56		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 10:51	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:08		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623556

Sample: EB-01 **Lab ID: 2623556002** Collected: 09/24/19 17:40 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.015J**	mg/L	0.050	0.0050	1		09/26/19 10:38	14797-55-8	
Nitrite as N	**0.022J**	mg/L	0.050	0.011	1		09/26/19 10:38	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 10:32	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	09/30/19 08:40	10/01/19 11:53	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 15:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36152 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 163281 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/01/19 12:04	

LABORATORY CONTROL SAMPLE: 163282

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: 163283 163284

Parameter	Units	2623578001 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	0.0025	0.0025	0.0019	0.0021	77	83	75-125	8	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 576632
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 3133743 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.064	10/10/19 13:56	
Iron	mg/L	ND	0.040	0.0092	10/10/19 13:56	
Magnesium	mg/L	ND	0.50	0.084	10/10/19 13:56	
Manganese	mg/L	ND	0.0050	0.00042	10/10/19 13:56	
Phosphorus	mg/L	ND	0.045	0.014	10/10/19 13:56	N2
Potassium	mg/L	ND	1.0	0.15	10/10/19 13:56	
Sodium	mg/L	ND	2.0	0.27	10/10/19 13:56	
Tot Hardness asCaCO3 (SM 2340B	ug/L	ND	3210	506	10/10/19 13:56	

LABORATORY CONTROL SAMPLE: 3133744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	12.5	13.2	105	80-120	
Iron	mg/L	2.5	2.6	105	80-120	
Magnesium	mg/L	12.5	13.0	104	80-120	
Manganese	mg/L	0.25	0.26	106	80-120	
Phosphorus	mg/L	0.25	0.25	99	80-120	N2
Potassium	mg/L	12.5	12.8	103	80-120	
Sodium	mg/L	12.5	13.2	106	80-120	
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	86400	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3133745 3133746

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	29000 ug/L	12.5	12.5	42.7	41.5	110	100	75-125	3	20	
Iron	mg/L	0.22	2.5	2.5	2.8	2.8	105	103	75-125	1	20	
Magnesium	mg/L	8.5	12.5	12.5	21.6	21.3	105	103	75-125	2	20	
Manganese	mg/L	0.040	0.25	0.25	0.31	0.30	107	103	75-125	3	20	
Phosphorus	mg/L	0.019J	0.25	0.25	0.28	0.28	103	104	75-125	1	20	N2
Potassium	mg/L	0.69J	12.5	12.5	13.6	13.5	103	103	75-125	1	20	
Sodium	mg/L	118	12.5	12.5	135	131	130	102	75-125	3	20	M1
Tot Hardness asCaCO3 (SM 2340B	ug/L	107000	82700	82700	196000	191000	107	102	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36079
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162814
Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	09/30/19 19:37	
Zinc	mg/L	ND	0.010	0.0015	09/30/19 19:37	

LABORATORY CONTROL SAMPLE: 162815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.098	98	80-120	
Zinc	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.099	0.094	99	94	75-125	6	20	
Zinc	mg/L	0.0019J	0.1	0.1	0.10	0.097	99	95	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36120 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 163051 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	09/30/19 08:00	

LABORATORY CONTROL SAMPLE: 163052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.9	100	78-114	

MATRIX SPIKE SAMPLE: 163054

Parameter	Units	2623556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	39.2	37.5	93	78-114	

SAMPLE DUPLICATE: 163053

Parameter	Units	2623453001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36336 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 164031 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/02/19 12:39	

LABORATORY CONTROL SAMPLE: 164032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.0	96	85-115	

SAMPLE DUPLICATE: 164047

Parameter	Units	2623614004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	13.5	14.0	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36262
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623556001, 2623556002

LABORATORY CONTROL SAMPLE: 163778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	357	89	84-108	

SAMPLE DUPLICATE: 163780

Parameter	Units	2623620001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	146	139	5	10	

SAMPLE DUPLICATE: 163844

Parameter	Units	2623559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	133	124	7	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36092 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162876 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/27/19 16:27	

LABORATORY CONTROL SAMPLE: 162877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	100	100	90-110	

SAMPLE DUPLICATE: 162878

Parameter	Units	2623124002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	307	318	4	10	H1

SAMPLE DUPLICATE: 162879

Parameter	Units	2623546003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	34.0	34.0	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36088
QC Batch Method: SM 4500-Cl G
Analysis Method: SM 4500-Cl G
Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162851
Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	09/27/19 15:35	H6

LABORATORY CONTROL SAMPLE: 162852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 162870

Parameter	Units	2623664001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.1	0.1	0	10	H3,H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36006 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162241 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/26/19 12:53	

LABORATORY CONTROL SAMPLE: 162242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162244 162243

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.52	0.51	104	101	80-120	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 35996 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162154 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/26/19 09:18	

LABORATORY CONTROL SAMPLE: 162155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162156 162157

Parameter	Units	2623499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.48	0.47	96	94	30-129	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 35994 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162151 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/01/19 09:55	1A

LABORATORY CONTROL SAMPLE: 162153

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	198	100	85-115	1A

SAMPLE DUPLICATE: 162313

Parameter	Units	2623577001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	193	192	1	20	1A

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 35990 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162133 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	09/26/19 08:55	
Nitrite as N	mg/L	0.013J	0.050	0.011	09/26/19 08:55	

LABORATORY CONTROL SAMPLE: 162134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.4	104	90-110	
Nitrite as N	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162135 162136

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.016J	10	10	10.2	10.1	102	101	90-110	1	15	
Nitrite as N	mg/L	0.021J	10	10	10.3	10.5	103	105	90-110	2	15	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36095 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 162900 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 10:18	

LABORATORY CONTROL SAMPLE: 162901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.3	103	90-110	

MATRIX SPIKE SAMPLE: 162902

Parameter	Units	2623600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 162903

Parameter	Units	2623679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.33	10	12.1	118	90-110	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 36141 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 163259 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/01/19 11:44	

LABORATORY CONTROL SAMPLE: 163260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.6	96	90-110	

MATRIX SPIKE SAMPLE: 163261

Parameter	Units	2623556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	10	8.8	88	90-110	M1

MATRIX SPIKE SAMPLE: 163262

Parameter	Units	2623649002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	25.8	10	35.3	95	90-110	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623556

QC Batch: 574634 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623556001, 2623556002

METHOD BLANK: 3122436 Matrix: Water
Associated Lab Samples: 2623556001, 2623556002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 14:32	

LABORATORY CONTROL SAMPLE: 3122437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122438 3122439

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122440 3122441

Parameter	Units	2623635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623556

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 36230

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623556

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623556001	**FB-01**	EPA 3010	576632	EPA 6010	576717
2623556002	**EB-01**	EPA 3010	576632	EPA 6010	576717
2623556001	**FB-01**	EPA 3005A	36079	EPA 6020B	36104
2623556002	**EB-01**	EPA 3005A	36079	EPA 6020B	36104
2623556001	**FB-01**	EPA 7470A	36152	EPA 7470A	36190
2623556002	**EB-01**	EPA 7470A	36152	EPA 7470A	36190
2623556001	**FB-01**	EPA 1664B	36120		
2623556002	**EB-01**	EPA 1664B	36120		
2623556001	**FB-01**	SM 2320B	36336		
2623556002	**EB-01**	SM 2320B	36336		
2623556001	**FB-01**	SM 2540C	36262		
2623556002	**EB-01**	SM 2540C	36262		
2623556001	**FB-01**	SM 2540D	36092		
2623556002	**EB-01**	SM 2540D	36092		
2623556001	**FB-01**	SM 4500-Cl G	36088		
2623556002	**EB-01**	SM 4500-Cl G	36088		
2623556001	**FB-01**	SM 4500-P	36006		
2623556002	**EB-01**	SM 4500-P	36006		
2623556001	**FB-01**	SM 4500-S2 D	35996		
2623556002	**EB-01**	SM 4500-S2 D	35996		
2623556001	**FB-01**	SM 5210B	35994	SM 5210B	36230
2623556002	**EB-01**	SM 5210B	35994	SM 5210B	36230
2623556001	**FB-01**	TKN-NH3 Calculation	36340		
2623556002	**EB-01**	TKN-NH3 Calculation	36340		
2623556001	**FB-01**	EPA 300.0	35990		
2623556002	**EB-01**	EPA 300.0	35990		
2623556001	**FB-01**	EPA 350.1	36095		
2623556002	**EB-01**	EPA 350.1	36095		
2623556001	**FB-01**	EPA 351.2	36141	EPA 351.2	36143
2623556002	**EB-01**	EPA 351.2	36141	EPA 351.2	36143
2623556001	**FB-01**	SM 5310B	574634		
2623556002	**EB-01**	SM 5310B	574634		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Chlorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
	Requested Analysis Filtered (Y/N)																	N	N	N	N	N	N	N	N	N	N	N	N	
1	FB-01	WT	G	9/24/19	1715	9/24/19	1725	20	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Collected duplicate at MW
2	EB-01	WT	G	9/24/19	1730	9/24/19	1740	20	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

NM 09/24/19

WO# : 2623556

2623556

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/24/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	M Zahmann	9/25/19	1403	
							3.0 Y Y X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/24/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2623556

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #:

PM: BM Due Date: 10/02/19

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 3.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/25/19 MP

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 06, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623568

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623568

Pace Analytical Services Atlanta

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

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623568

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623568001	**HGWC-8**	Water	09/24/19 15:50	09/25/19 14:03
2623568002	**MW-29**	Water	09/24/19 15:22	09/25/19 14:03
2623568003	**MW-30d**	Water	09/24/19 16:40	09/25/19 14:03

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623568

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623568001	**HGWC-8**	EPA 6010D	KLH	7	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623568002	**MW-29**	EPA 6010D	KLH	6	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623568003	**MW-30d**	EPA 6020B	CSW	5	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623568

Sample: HGWC-8 **Lab ID: 2623568001** Collected: 09/24/19 15:50 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	**0.037J**	mg/L	0.040	0.015	1	11/12/19 18:23	11/13/19 18:51	7439-89-6	
Magnesium	**14.0**	mg/L	0.050	0.011	1	11/12/19 18:23	11/13/19 18:51	7439-95-4	
Manganese	**0.18**	mg/L	0.040	0.0061	1	11/12/19 18:23	11/13/19 18:51	7439-96-5	
Phosphorus	**0.023J**	mg/L	0.050	0.023	1	11/12/19 18:23	11/13/19 18:51	7723-14-0	
Potassium	**6.9**	mg/L	0.20	0.026	1	11/12/19 18:23	11/13/19 18:51	7440-09-7	
Sodium	**8.5**	mg/L	5.0	0.93	5	11/12/19 18:23	11/14/19 17:05	7440-23-5	E
Total Hardness by 2340B	**300**	mg/L	2.7	0.40	1	11/12/19 18:23	11/13/19 18:51		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/27/19 15:26	10/01/19 12:07	7440-50-8	
Zinc	**0.0032J**	mg/L	0.010	0.0015	1	09/27/19 15:26	10/01/19 12:07	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/30/19 10:50	10/01/19 12:50	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		09/30/19 14:45		
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**130**	mg/L	20.0	20.0	1		09/30/19 17:13		
Alkalinity, Total as CaCO3	**130**	mg/L	20.0	20.0	1		09/30/19 17:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**486**	mg/L	10.0	10.0	1		10/01/19 16:36		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/27/19 16:28		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		09/27/19 15:37	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:57		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 11:06	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/26/19 09:30	10/01/19 10:04		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/02/19 12:32		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623568

Sample: HGWC-8 **Lab ID: 2623568001** Collected: 09/24/19 15:50 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.012J**	mg/L	0.050	0.0050	1		09/26/19 12:22	14797-55-8	
Nitrite as N	**0.028J**	mg/L	0.050	0.011	1		09/26/19 12:22	14797-65-0	B
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**2.6**	mg/L	0.10	0.10	1		09/30/19 10:35	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.8**	mg/L	0.40	0.40	1	09/27/19 09:15	09/27/19 12:38	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.58J**	mg/L	1.0	0.50	1		10/01/19 17:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623568

Sample: MW-29 **Lab ID: 2623568002** Collected: 09/24/19 15:22 Received: 09/25/19 14:03 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	**0.13**	mg/L	0.040	0.015	1	11/12/19 18:23	11/13/19 19:11	7439-89-6	
Magnesium	**12.7**	mg/L	0.050	0.011	1	11/12/19 18:23	11/13/19 19:11	7439-95-4	
Manganese	**1.4**	mg/L	0.040	0.0061	1	11/12/19 18:23	11/13/19 19:11	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	11/12/19 18:23	11/13/19 19:11	7723-14-0	
Potassium	**1.2**	mg/L	0.20	0.026	1	11/12/19 18:23	11/13/19 19:11	7440-09-7	
Sodium	**13.0**	mg/L	10.0	1.9	10	11/12/19 18:23	11/14/19 17:10	7440-23-5	E
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**187**	mg/L	20.0	20.0	1		09/30/19 17:18		
Alkalinity, Total as CaCO3	**187**	mg/L	20.0	20.0	1		09/30/19 17:18		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:58		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/26/19 11:08	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 17:54		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623568

Sample: MW-30d **Lab ID: 2623568003** Collected: 09/24/19 16:40 Received: 09/25/19 14:03 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								
Iron	**0.30**	mg/L	0.040	0.0097	1	09/28/19 14:58	10/02/19 19:34	7439-89-6	
Magnesium	**5.2**	mg/L	0.050	0.0030	1	09/28/19 14:58	10/02/19 19:34	7439-95-4	
Manganese	**0.044**	mg/L	0.010	0.00057	1	09/28/19 14:58	10/02/19 19:34	7439-96-5	
Potassium	**3.3**	mg/L	0.10	0.026	1	09/28/19 14:58	10/02/19 19:34	7440-09-7	
Sodium	**704**	mg/L	5.0	0.75	50	09/28/19 14:58	10/02/19 19:40	7440-23-5	E
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**435**	mg/L	20.0	20.0	1		09/30/19 17:22		
Alkalinity, Total as CaCO3	**435**	mg/L	20.0	20.0	1		09/30/19 17:22		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/26/19 12:59		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	**0.80**	mg/L	0.20	0.20	1		09/26/19 11:12	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**1.4**	mg/L	1.0	0.50	1		10/01/19 18:10		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36152
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Associated Lab Samples: 2623568001

METHOD BLANK: 163281 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/01/19 12:04	

LABORATORY CONTROL SAMPLE: 163282

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: 163283 163284

Parameter	Units	2623578001 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	0.0025	0.0025	0.0019	0.0021	77	83	75-125	8	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

Pace Analytical Services, LLC
110 Technology Parkway
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 38701
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D MET
Associated Lab Samples: 2623568001, 2623568002

METHOD BLANK: 175782 Matrix: Water
Associated Lab Samples: 2623568001, 2623568002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	11/13/19 18:41	
Magnesium	mg/L	ND	0.050	0.011	11/13/19 18:41	
Manganese	mg/L	ND	0.040	0.0061	11/13/19 18:41	
Phosphorus	mg/L	ND	0.050	0.023	11/13/19 18:41	
Potassium	mg/L	ND	0.20	0.026	11/13/19 18:41	
Sodium	mg/L	ND	1.0	0.19	11/13/19 18:41	
Total Hardness by 2340B	mg/L	ND	2.7	0.40	11/13/19 18:41	

LABORATORY CONTROL SAMPLE: 175783

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	0.98	98	80-120	
Magnesium	mg/L	1	0.99	99	80-120	
Manganese	mg/L	1	0.98	98	80-120	
Phosphorus	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	0.96J	96	80-120	
Total Hardness by 2340B	mg/L	6.6	6.5	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 175784 175785

Parameter	Units	2623568001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.037J	1	1	1.0	0.99	96	95	75-125	1	20	
Magnesium	mg/L	14.0	1	1	15.0	15.0	104	102	75-125	0	20	
Manganese	mg/L	0.18	1	1	1.2	1.1	97	94	75-125	2	20	
Phosphorus	mg/L	0.023J	1	1	0.99	0.98	97	96	75-125	1	20	
Potassium	mg/L	6.9	1	1	8.0	8.0	116	111	75-125	1	20	
Sodium	mg/L	8.5	1	1	9.4	9.3	90	85	75-125	0	20	
Total Hardness by 2340B	mg/L	300	6.6	6.6	311	310	166	143	75-125	0	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

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36079
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623568001

METHOD BLANK: 162814 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	09/30/19 19:37	
Zinc	mg/L	ND	0.010	0.0015	09/30/19 19:37	

LABORATORY CONTROL SAMPLE: 162815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.098	98	80-120	
Zinc	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.099	0.094	99	94	75-125	6	20	
Zinc	mg/L	0.0019J	0.1	0.1	0.10	0.097	99	95	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623568003

METHOD BLANK: 163251 Matrix: Water
Associated Lab Samples: 2623568003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Manganese	mg/L	ND	0.010	0.00057	10/02/19 18:26	

LABORATORY CONTROL SAMPLE: 163252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163253 163254

Parameter	Units	2623567001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Manganese	mg/L	0.20	0.1	0.1	0.30	0.30	103	107	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36140 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623568001

METHOD BLANK: 163255 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	09/30/19 14:45	

LABORATORY CONTROL SAMPLE: 163256

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.5	99	78-114	

MATRIX SPIKE SAMPLE: 163257

Parameter	Units	2623463001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	44.4	10.2	16	78-114	M3

SAMPLE DUPLICATE: 163258

Parameter	Units	2623464002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36180 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623568001, 2623568002, 2623568003

METHOD BLANK: 163383 Matrix: Water
Associated Lab Samples: 2623568001, 2623568002, 2623568003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	09/30/19 14:21	

LABORATORY CONTROL SAMPLE: 163384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	100	100	85-115	

SAMPLE DUPLICATE: 163385

Parameter	Units	2623563001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	177	174	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36262
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623568001

LABORATORY CONTROL SAMPLE: 163778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	357	89	84-108	

SAMPLE DUPLICATE: 163780

Parameter	Units	2623620001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	146	139	5	10	

SAMPLE DUPLICATE: 163844

Parameter	Units	2623559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	133	124	7	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36092 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623568001

METHOD BLANK: 162876 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/27/19 16:27	

LABORATORY CONTROL SAMPLE: 162877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	100	100	90-110	

SAMPLE DUPLICATE: 162878

Parameter	Units	2623124002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	307	318	4	10	H1

SAMPLE DUPLICATE: 162879

Parameter	Units	2623546003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	34.0	34.0	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36088
QC Batch Method: SM 4500-Cl G
Analysis Method: SM 4500-Cl G
Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623568001

METHOD BLANK: 162851 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	09/27/19 15:35	H6

LABORATORY CONTROL SAMPLE: 162852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 162870

Parameter	Units	2623664001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.1	0.1	0	10	H3,H6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36006 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623568001, 2623568002, 2623568003

METHOD BLANK: 162241 Matrix: Water
Associated Lab Samples: 2623568001, 2623568002, 2623568003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/26/19 12:53	

LABORATORY CONTROL SAMPLE: 162242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162244 162243

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.52	0.51	104	101	80-120	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 35996 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623568001, 2623568002, 2623568003

METHOD BLANK: 162154 Matrix: Water
Associated Lab Samples: 2623568001, 2623568002, 2623568003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/26/19 09:18	

LABORATORY CONTROL SAMPLE: 162155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162156 162157

Parameter	Units	2623499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.48	0.47	96	94	30-129	2	10	

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REPORT OF LABORATORY ANALYSIS

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Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 35994
QC Batch Method: SM 5210B
Analysis Method: SM 5210B
Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623568001

METHOD BLANK: 162151 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/01/19 09:55	1A

LABORATORY CONTROL SAMPLE: 162153

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	198	100	85-115	1A

SAMPLE DUPLICATE: 162313

Parameter	Units	2623577001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	193	192	1	20	1A

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 35990 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623568001

METHOD BLANK: 162133 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	09/26/19 08:55	
Nitrite as N	mg/L	0.013J	0.050	0.011	09/26/19 08:55	

LABORATORY CONTROL SAMPLE: 162134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.4	104	90-110	
Nitrite as N	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162135 162136

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.016J	10	10	10.2	10.1	102	101	90-110	1	15	
Nitrite as N	mg/L	0.021J	10	10	10.3	10.5	103	105	90-110	2	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36095 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623568001

METHOD BLANK: 162900 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 10:18	

LABORATORY CONTROL SAMPLE: 162901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.3	103	90-110	

MATRIX SPIKE SAMPLE: 162902

Parameter	Units	2623600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 162903

Parameter	Units	2623679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.33	10	12.1	118	90-110	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 36036 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623568001

METHOD BLANK: 162482 Matrix: Water
Associated Lab Samples: 2623568001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	09/27/19 12:17	

LABORATORY CONTROL SAMPLE: 162483

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.6	96	90-110	

MATRIX SPIKE SAMPLE: 162484

Parameter	Units	2623546001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	1.0	10	8.4	74	90-110	M1

MATRIX SPIKE SAMPLE: 162485

Parameter	Units	2623546003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	1.6	10	10.0	84	90-110	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623568

QC Batch: 574634 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623568001, 2623568002, 2623568003

METHOD BLANK: 3122436 Matrix: Water
Associated Lab Samples: 2623568001, 2623568002, 2623568003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 14:32	

LABORATORY CONTROL SAMPLE: 3122437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122438 3122439

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122440 3122441

Parameter	Units	2623635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623568

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 36230

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623568

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623568001	**HGWC-8**	EPA 3010A	38701	EPA 6010D	38723
2623568002	**MW-29**	EPA 3010A	38701	EPA 6010D	38723
2623568001	**HGWC-8**	EPA 3005A	36079	EPA 6020B	36104
2623568003	**MW-30d**	EPA 3005A	36136	EPA 6020B	36312
2623568001	**HGWC-8**	EPA 7470A	36152	EPA 7470A	36190
2623568001	**HGWC-8**	EPA 1664B	36140		
2623568001	**HGWC-8**	SM 2320B	36180		
2623568002	**MW-29**	SM 2320B	36180		
2623568003	**MW-30d**	SM 2320B	36180		
2623568001	**HGWC-8**	SM 2540C	36262		
2623568001	**HGWC-8**	SM 2540D	36092		
2623568001	**HGWC-8**	SM 4500-Cl G	36088		
2623568001	**HGWC-8**	SM 4500-P	36006		
2623568002	**MW-29**	SM 4500-P	36006		
2623568003	**MW-30d**	SM 4500-P	36006		
2623568001	**HGWC-8**	SM 4500-S2 D	35996		
2623568002	**MW-29**	SM 4500-S2 D	35996		
2623568003	**MW-30d**	SM 4500-S2 D	35996		
2623568001	**HGWC-8**	SM 5210B	35994	SM 5210B	36230
2623568001	**HGWC-8**	TKN-NH3 Calculation	36340		
2623568001	**HGWC-8**	EPA 300.0	35990		
2623568001	**HGWC-8**	EPA 350.1	36095		
2623568001	**HGWC-8**	EPA 351.2	36036	EPA 351.2	36058
2623568001	**HGWC-8**	SM 5310B	574634		
2623568002	**MW-29**	SM 5310B	574634		
2623568003	**MW-30d**	SM 5310B	574634		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analysis Test Y/N	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Clorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	Requested Analysis Filtered (Y/N)
																		N	N	N	N	N	N	N	N	N	N	N	N	N	
1	HGWC-8	WT	G	9/24/19	1408	9/24/19	1550	22	10	3	1		5	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	orthophosphate & DOC field filtered
2																															
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11																															
12																															

NM 09/24/19

WO# : 2623568

2623568

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Nadia Mostan/Geosyntec	9/24/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	Nadia Mostan	9/25/19	1403	
							0.3

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Nadia Mostan					
SIGNATURE of SAMPLER:	Nadia Mostan	DATE Signed: 09/24/19		Y	Y	Y

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
																		Y/N	N	N	N	N	N	N	N		
1	MW-29	WT	G	9.24.19	1313	9.24.19	1522	22	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	orthophosphate, DOC field filtered
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BRW 9/24/19

WO# : 2623568

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9.24.19	1634	Mollie Mudan / Geosyntec	9/24/19	1634	
	Mollie Mudan / Geosyntec	9/24/19	20:10	I Pace	9.25.19	1117	
	I Pace	9.25.19	1403	M Zalaman	9/25/19	1403	
							0.3

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Ben Weinmann		
SIGNATURE of SAMPLER:	Ben W	DATE Signed:	9.24.19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.3	Y	Y	Y

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test: Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
																		N	N	N	N	N	N	N		
1	MW-30d	MT	G	9/24/19	16:12	9/24/19	16:40	23.68	6	2			3	1				Y	Y	Y	Y	Y	Y	Y	N	orthophosphate & DX field filtered
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

09-24-2019

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

WO#: 2623568

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Pace / Geosyntec	09/24/19	18:10	Mollie Mullen / Geosyntec	9/24/19	1810				
	Mollie Mullen / Geosyntec	9/24/19	20:10	Pace	9.25.19	1117				
	Pace	9.25.19	1403	M Dalimann	9/25/19	1403				
							0.3	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature]

DATE Signed: 9-24-19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Powere Project #

WO# : 2623568

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #:

PM: BM Due Date: 10/02/19

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 0.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/26/19 MR

Temp should be above freezing to 6°C Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623635001	**HGWC-7**	Water	09/25/19 11:22	09/26/19 15:22
2623635002	**MW-5**	Water	09/25/19 16:35	09/26/19 15:22
2623635003	**MW-20**	Water	09/25/19 11:10	09/26/19 15:22

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623635001	**HGWC-7**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623635002	**MW-5**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623635003	**MW-20**	EPA 6010	ATC	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Sample: HGWC-7 **Lab ID: 2623635001** Collected: 09/25/19 11:22 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.18**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 22:10	7439-89-6	
Magnesium	**10.2**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 22:10	7439-95-4	
Manganese	**0.31**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 22:10	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 22:10	7723-14-0	N2
Potassium	**2.8**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 22:10	7440-09-7	
Sodium	**10.4**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 22:10	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**151**	mg/L	20.0	20.0	1		09/30/19 17:50		
Alkalinity, Total as CaCO3	**151**	mg/L	20.0	20.0	1		09/30/19 17:50		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 10:45		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:08	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 18:26		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Sample: MW-5 **Lab ID: 2623635002** Collected: 09/25/19 16:35 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.051**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 22:15	7439-89-6	
Magnesium	**10.8**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 22:15	7439-95-4	
Manganese	**0.0042J**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 22:15	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 22:15	7723-14-0	N2
Potassium	**0.96J**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 22:15	7440-09-7	
Sodium	**21.6**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 22:15	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**165**	mg/L	20.0	20.0	1		10/01/19 17:43		
Alkalinity, Total as CaCO3	**165**	mg/L	20.0	20.0	1		10/01/19 17:43		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:14		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:47	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.57J**	mg/L	1.0	0.50	1		10/01/19 19:11		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Sample: MW-20 **Lab ID: 2623635003** Collected: 09/25/19 11:10 Received: 09/26/19 15:22 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**3.1**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 12:49	7439-89-6	
Magnesium	**8.6**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 12:49	7439-95-4	
Manganese	**0.17**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 12:49	7439-96-5	
Phosphorus	**0.083**	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 12:49	7723-14-0	N2
Potassium	**0.31J**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 12:49	7440-09-7	
Sodium	**11.0**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 12:49	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	**337000**	ug/L	3210	506	1	10/08/19 16:13	10/09/19 12:49		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/30/19 12:43	10/01/19 21:21	7440-50-8	
Zinc	ND	mg/L	0.010	0.0015	1	09/30/19 12:43	10/01/19 21:21	7440-66-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**211**	mg/L	20.0	20.0	1		10/01/19 17:47		
Alkalinity, Total as CaCO3	**211**	mg/L	20.0	20.0	1		10/01/19 17:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**455**	mg/L	10.0	10.0	1		10/02/19 12:05		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 11:15		1A,H1
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 15:48	18496-25-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.70**	mg/L	0.050	0.0050	1		09/27/19 04:52	14797-55-8	
Nitrite as N	ND	mg/L	0.050	0.011	1		09/27/19 04:52	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.12**	mg/L	0.10	0.10	1		09/30/19 10:36	7664-41-7	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/01/19 19:29		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 576632 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 2623635001, 2623635002

METHOD BLANK: 3133743 Matrix: Water
Associated Lab Samples: 2623635001, 2623635002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/10/19 13:56	
Magnesium	mg/L	ND	0.50	0.084	10/10/19 13:56	
Manganese	mg/L	ND	0.0050	0.00042	10/10/19 13:56	
Phosphorus	mg/L	ND	0.045	0.014	10/10/19 13:56	N2
Potassium	mg/L	ND	1.0	0.15	10/10/19 13:56	
Sodium	mg/L	ND	2.0	0.27	10/10/19 13:56	

LABORATORY CONTROL SAMPLE: 3133744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.6	105	80-120	
Magnesium	mg/L	12.5	13.0	104	80-120	
Manganese	mg/L	0.25	0.26	106	80-120	
Phosphorus	mg/L	0.25	0.25	99	80-120	N2
Potassium	mg/L	12.5	12.8	103	80-120	
Sodium	mg/L	12.5	13.2	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3133745 3133746

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.22	2.5	2.5	2.8	2.8	105	103	75-125	1	20	
Magnesium	mg/L	8.5	12.5	12.5	21.6	21.3	105	103	75-125	2	20	
Manganese	mg/L	0.040	0.25	0.25	0.31	0.30	107	103	75-125	3	20	
Phosphorus	mg/L	0.019J	0.25	0.25	0.28	0.28	103	104	75-125	1	20	N2
Potassium	mg/L	0.69J	12.5	12.5	13.6	13.5	103	103	75-125	1	20	
Sodium	mg/L	118	12.5	12.5	135	131	130	102	75-125	3	20	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 576681
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 2623635003

METHOD BLANK: 3134011 Matrix: Water
Associated Lab Samples: 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/09/19 12:43	
Magnesium	mg/L	ND	0.50	0.084	10/09/19 12:43	
Manganese	mg/L	ND	0.0050	0.00042	10/09/19 12:43	
Phosphorus	mg/L	ND	0.045	0.014	10/09/19 12:43	N2
Potassium	mg/L	ND	1.0	0.15	10/09/19 12:43	
Sodium	mg/L	ND	2.0	0.27	10/09/19 12:43	
Tot Hardness asCaCO3 (SM 2340B	ug/L	ND	3210	506	10/09/19 12:43	

LABORATORY CONTROL SAMPLE: 3134012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.5	98	80-120	
Magnesium	mg/L	12.5	12.2	98	80-120	
Manganese	mg/L	0.25	0.25	98	80-120	
Phosphorus	mg/L	0.25	0.23	92	80-120	N2
Potassium	mg/L	12.5	12.1	97	80-120	
Sodium	mg/L	12.5	12.3	98	80-120	
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	81100	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3134013 3134014

Parameter	Units	2623635003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	3.1	2.5	2.5	5.6	5.6	98	100	75-125	1	20	
Magnesium	mg/L	8.6	12.5	12.5	21.1	21.2	99	101	75-125	1	20	
Manganese	mg/L	0.17	0.25	0.25	0.42	0.42	98	99	75-125	1	20	
Phosphorus	mg/L	0.083	0.25	0.25	0.33	0.33	98	99	75-125	1	20	N2
Potassium	mg/L	0.31J	12.5	12.5	13.1	13.1	102	103	75-125	0	20	
Sodium	mg/L	11.0	12.5	12.5	23.7	23.8	101	103	75-125	1	20	
Tot Hardness asCaCO3 (SM 2340B	ug/L	337000	82700	82700	418000	421000	99	102	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36170
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Associated Lab Samples: 2623635003

METHOD BLANK: 163336
Matrix: Water
Associated Lab Samples: 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	10/01/19 18:14	
Zinc	mg/L	ND	0.010	0.0015	10/01/19 18:14	

LABORATORY CONTROL SAMPLE: 163337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.10	100	80-120	
Zinc	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.10	0.10	105	102	75-125	2	20	
Zinc	mg/L	0.0017J	0.1	0.1	0.10	0.10	103	102	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36180 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623635001

METHOD BLANK: 163383 Matrix: Water
Associated Lab Samples: 2623635001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	09/30/19 14:21	

LABORATORY CONTROL SAMPLE: 163384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	100	100	85-115	

SAMPLE DUPLICATE: 163385

Parameter	Units	2623563001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	177	174	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36284 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623635002, 2623635003

METHOD BLANK: 163853 Matrix: Water
Associated Lab Samples: 2623635002, 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/01/19 17:35	

LABORATORY CONTROL SAMPLE: 163854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	98.0	98	85-115	

SAMPLE DUPLICATE: 163855

Parameter	Units	2623635002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	165	164	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36325
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623635003

LABORATORY CONTROL SAMPLE: 164004

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	421	105	84-108	

SAMPLE DUPLICATE: 164005

Parameter	Units	2623620005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	159	152	5	10	

SAMPLE DUPLICATE: 164006

Parameter	Units	2623623005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	81.0	83.0	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36055 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623635001, 2623635002, 2623635003

METHOD BLANK: 162666 Matrix: Water
Associated Lab Samples: 2623635001, 2623635002, 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/27/19 10:41	

LABORATORY CONTROL SAMPLE: 162667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162668 162669

Parameter	Units	2623638001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.021	0.5	0.5	0.53	0.53	101	102	80-120	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36186 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623635001, 2623635002, 2623635003

METHOD BLANK: 163399 Matrix: Water
Associated Lab Samples: 2623635001, 2623635002, 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/30/19 14:59	

LABORATORY CONTROL SAMPLE: 163400

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163401 163402

Parameter	Units	2623644003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.49	0.50	98	100	30-129	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36045 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623635003

METHOD BLANK: 162623 Matrix: Water
Associated Lab Samples: 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	0.013J	0.050	0.0050	09/27/19 01:45	
Nitrite as N	mg/L	0.020J	0.050	0.011	09/27/19 01:45	

LABORATORY CONTROL SAMPLE: 162624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.6	106	90-110	
Nitrite as N	mg/L	10	10.9	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162625 162626

Parameter	Units	2623614003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.66	10	10	11.2	11.2	105	105	90-110	0	15	
Nitrite as N	mg/L	0.020J	10	10	10.9	10.9	109	108	90-110	1	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 36095 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623635003

METHOD BLANK: 162900 Matrix: Water
Associated Lab Samples: 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 10:18	

LABORATORY CONTROL SAMPLE: 162901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.3	103	90-110	

MATRIX SPIKE SAMPLE: 162902

Parameter	Units	2623600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 162903

Parameter	Units	2623679001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.33	10	12.1	118	90-110	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

QC Batch: 574634 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623635001, 2623635002, 2623635003

METHOD BLANK: 3122436 Matrix: Water
Associated Lab Samples: 2623635001, 2623635002, 2623635003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/01/19 14:32	

LABORATORY CONTROL SAMPLE: 3122437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122438 3122439

Parameter	Units	2623556001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122440 3122441

Parameter	Units	2623635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.5	96	95	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

1A	Sample was received outside of the EPA recommended holding time or was received with insufficient time to run sample within the EPA recommended holding time.
H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623635

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623635001	**HGWC-7**	EPA 3010	576632	EPA 6010	576717
2623635002	**MW-5**	EPA 3010	576632	EPA 6010	576717
2623635003	**MW-20**	EPA 3010	576681	EPA 6010	576722
2623635003	**MW-20**	EPA 3005A	36170	EPA 6020B	36202
2623635001	**HGWC-7**	SM 2320B	36180		
2623635002	**MW-5**	SM 2320B	36284		
2623635003	**MW-20**	SM 2320B	36284		
2623635003	**MW-20**	SM 2540C	36325		
2623635001	**HGWC-7**	SM 4500-P	36055		
2623635002	**MW-5**	SM 4500-P	36055		
2623635003	**MW-20**	SM 4500-P	36055		
2623635001	**HGWC-7**	SM 4500-S2 D	36186		
2623635002	**MW-5**	SM 4500-S2 D	36186		
2623635003	**MW-20**	SM 4500-S2 D	36186		
2623635003	**MW-20**	EPA 300.0	36045		
2623635003	**MW-20**	EPA 350.1	36095		
2623635001	**HGWC-7**	SM 5310B	574634		
2623635002	**MW-5**	SM 5310B	574634		
2623635003	**MW-20**	SM 5310B	574634		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GWC581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
																		Y/N			
1	HGWC-7	WT	G	9.25.19	1045	9/25/19	1127	4°	6	2			3	1				Total alkalinity, bicarbonate	Y	N	ortho phosphate + DOC field filtered
																		orthophosphate	Y		
																		iron,manganese,magnesium	Y		
																		phosphorous,potassium	Y		
																		sodium	Y		
																		sulfide	Y		
																		dissolved organic carbon	Y		
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

BRW 9/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9.25.19	1745	Nadia Mendez / Geosyntec	9/25/19	1745	
	Nadia Mendez / Geosyntec	9/25/19	1915	Pace	9.26.19	1135	
	Pace	9.26.19	1522	Charles Hunter	9/26/19	1522	4.0 Y Y Y

WO# : 2623635

2623635

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Ben Weinmann					
SIGNATURE of SAMPLER:	BRW	DATE Signed: 9.25.19				

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon				Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Requested Analysis Filtered (Y/N)											
																		Y/N	N	N	N	N	N	N	N				
1	MW-5	WT	G	9/25/19	1609	9/25/19	1635	20	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	—			N	orthophosphate & DOC were field filtered
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

NM 09/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Nadia Muskus	9/25/19	1915	3 — 1 Pace	9.26.19	1135				
	3 — 1 Pace	9.26.19	1522	Charles Hunter	9/26/19	1522	4.0	X	X	X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 09/25/19

WO#: 2623635

PM: BM Due Date: 10/03/19

CLIENT: GAPower-CCR

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese	magnesium,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS	ammonia nitrogen			Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Requested Analysis Filtered (Y/N)												
1	MW-20	WT	G	9/25/19	1033	9/25/19	1110	20	7	2	1	X	3	1				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			N	orthophosphate & DOC were field filtered
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

NM 09/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Nadia Muskus	9/25/19	1915	1 Pace	9.26.19	1135				
	1 Pace	9.26.19	1522	Chandra Hanks	9/26/19	1522	4.0	X	X	X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 09/25/19

WO#: 2623635

PM: BM Due Date: 10/03/19

CLIENT: GAPower-CCR

Pace Analytical

Sample Condition Upon Receipt

WO# : 2623635

Client Name: GA Power

PM: BM Due Date: 10/03/19

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 214

Type of Ice: Wet Blue None

☐ Samples on ice, cooling process has begun

Cooler Temperature 4.1°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/26/19 CM

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623704

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623704001	**EB-02**	Water	09/26/19 17:50	09/27/19 13:15
2623704002	**FB-02**	Water	09/26/19 18:25	09/27/19 13:15

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(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623704001	**EB-02**	EPA 6010D	KLH	7	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623704002	**FB-02**	EPA 6010D	KLH	7	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: EB-02 **Lab ID: 2623704001** Collected: 09/26/19 17:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	ND	mg/L	0.040	0.015	1	10/01/19 12:18	10/06/19 16:59	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/01/19 12:18	10/06/19 16:59	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/01/19 12:18	10/06/19 16:59	7439-96-5	
Phosphorus	**0.041J**	mg/L	0.050	0.023	1	10/01/19 12:18	10/06/19 16:59	7723-14-0	
Potassium	ND	mg/L	0.20	0.026	1	10/01/19 12:18	10/06/19 16:59	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/01/19 12:18	10/06/19 16:59	7440-23-5	
Total Hardness by 2340B	ND	mg/L	2.7	0.40	1	10/01/19 12:18	10/06/19 16:59		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	09/30/19 13:30	10/03/19 20:25	7440-50-8	
Zinc	**0.0016J**	mg/L	0.010	0.0015	1	09/30/19 13:30	10/03/19 20:25	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/03/19 17:10	10/04/19 11:50	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		10/02/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/04/19 14:47		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/04/19 14:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**16.0**	mg/L	10.0	10.0	1		10/03/19 16:28		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/30/19 12:16		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:28	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:59		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:42	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/27/19 21:37	10/02/19 14:49		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: EB-02 **Lab ID: 2623704001** Collected: 09/26/19 17:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		09/28/19 10:57	14797-55-8	
Nitrite as N	**0.017J**	mg/L	0.050	0.011	1		09/28/19 10:57	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		09/30/19 11:30	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/01/19 09:05	10/01/19 13:15	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.65J**	mg/L	1.0	0.50	1		10/02/19 15:32		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: FB-02 **Lab ID: 2623704002** Collected: 09/26/19 18:25 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Iron	ND	mg/L	0.040	0.015	1	10/01/19 12:18	10/06/19 17:04	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/01/19 12:18	10/06/19 17:04	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/01/19 12:18	10/06/19 17:04	7439-96-5	
Phosphorus	ND	mg/L	0.050	0.023	1	10/01/19 12:18	10/06/19 17:04	7723-14-0	
Potassium	ND	mg/L	0.20	0.026	1	10/01/19 12:18	10/06/19 17:04	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/01/19 12:18	10/06/19 17:04	7440-23-5	
Total Hardness by 2340B	ND	mg/L	2.7	0.40	1	10/01/19 12:18	10/06/19 17:04		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	**0.00030J**	mg/L	0.025	0.00019	1	09/30/19 13:30	10/03/19 20:30	7440-50-8	
Zinc	**0.0019J**	mg/L	0.010	0.0015	1	09/30/19 13:30	10/03/19 20:30	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/03/19 17:10	10/04/19 11:53	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		10/02/19 08:00		
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/04/19 15:01		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		10/04/19 15:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/19 16:28		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		09/30/19 12:16		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:29	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:59		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:43	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	09/27/19 21:37	10/02/19 14:50		1A
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Sample: FB-02 **Lab ID: 2623704002** Collected: 09/26/19 18:25 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.011J**	mg/L	0.050	0.0050	1		09/28/19 11:39	14797-55-8	
Nitrite as N	**0.018J**	mg/L	0.050	0.011	1		09/28/19 11:39	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.16**	mg/L	0.10	0.10	1		09/30/19 11:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/01/19 09:05	10/01/19 13:16	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 16:13		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36428 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 164509 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/04/19 10:46	

LABORATORY CONTROL SAMPLE: 164510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164511 164512

Parameter	Units	2623696001 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	0.0025	0.0025	0.0022	0.0022	88	88	75-125	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36168 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163328 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.015	10/06/19 16:50	
Magnesium	mg/L	ND	0.050	0.011	10/06/19 16:50	
Manganese	mg/L	ND	0.040	0.0061	10/06/19 16:50	
Phosphorus	mg/L	ND	0.050	0.023	10/06/19 16:50	
Potassium	mg/L	ND	0.20	0.026	10/06/19 16:50	
Sodium	mg/L	ND	1.0	0.19	10/06/19 16:50	
Total Hardness by 2340B	mg/L	ND	2.7	0.40	10/06/19 16:50	

LABORATORY CONTROL SAMPLE: 163329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	102	80-120	
Manganese	mg/L	1	1.0	100	80-120	
Phosphorus	mg/L	1	1.0	103	80-120	
Potassium	mg/L	1	1.1	110	80-120	
Sodium	mg/L	1	1.1	108	80-120	
Total Hardness by 2340B	mg/L	6.6	6.8	103	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36173 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163347 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	10/03/19 16:32	
Zinc	mg/L	0.0016J	0.010	0.0015	10/03/19 16:32	

LABORATORY CONTROL SAMPLE: 163348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.099	99	80-120	
Zinc	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163349 163350

Parameter	Units	2623696001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.088	0.090	88	90	75-125	3	20	
Zinc	mg/L	0.0040J	0.1	0.1	0.091	0.096	87	91	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36282 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163839 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	10/02/19 08:00	

LABORATORY CONTROL SAMPLE: 163840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.8	100	78-114	

MATRIX SPIKE SAMPLE: 163842

Parameter	Units	2623558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	23.1	40	80.3	143	78-114	M3

SAMPLE DUPLICATE: 163841

Parameter	Units	2623698001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36503 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 164938 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	10/04/19 14:44	

LABORATORY CONTROL SAMPLE: 164939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	47.5	95	85-115	

SAMPLE DUPLICATE: 164940

Parameter	Units	2623704001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	ND		10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36437
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623704001, 2623704002

LABORATORY CONTROL SAMPLE: 164569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 164570

Parameter	Units	2623700006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	225	219	3	10	

SAMPLE DUPLICATE: 164571

Parameter	Units	2623710002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1450	1330	9	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36165 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163320 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	09/30/19 12:16	

LABORATORY CONTROL SAMPLE: 163321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	99.5	100	90-110	

SAMPLE DUPLICATE: 163322

Parameter	Units	2623465001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	10.0	ND		10	

SAMPLE DUPLICATE: 163323

Parameter	Units	2623682001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.5	ND		10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36248 Analysis Method: SM 4500-Cl G
QC Batch Method: SM 4500-Cl G Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163705 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	10/01/19 12:26	H6

LABORATORY CONTROL SAMPLE: 163706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 163724

Parameter	Units	2623782001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.3	0.3	0	10	H3,H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36125 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163138 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/28/19 13:30	

LABORATORY CONTROL SAMPLE: 163139

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163140 163141

Parameter	Units	2623698004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.50	100	101	80-120	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36187 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163403 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/30/19 17:04	

LABORATORY CONTROL SAMPLE: 163404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163405 163406

Parameter	Units	2623614004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.40	0.40	81	80	30-129	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36102 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 162918 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/02/19 14:17	1A

LABORATORY CONTROL SAMPLE: 162920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	205	104	85-115	1A

SAMPLE DUPLICATE: 163019

Parameter	Units	2623686001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	831	690	19	20	1A

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36067 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 162737 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	09/27/19 18:48	
Nitrite as N	mg/L	ND	0.050	0.011	09/27/19 18:48	

LABORATORY CONTROL SAMPLE: 162738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.5	105	90-110	
Nitrite as N	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162739 162740

Parameter	Units	2623562005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.74			11.2	11.2				0	15	H1
Nitrite as N	mg/L	0.030J			10.7	10.5				2	15	H1

MATRIX SPIKE SAMPLE: 163021

Parameter	Units	2623704001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	ND	10	10.5	105	90-110	
Nitrite as N	mg/L	0.017J	10	10.8	108	90-110	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36150 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163273 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	09/30/19 11:18	

LABORATORY CONTROL SAMPLE: 163274

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.3	103	90-110	

MATRIX SPIKE SAMPLE: 163275

Parameter	Units	2623698001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.4	10	12.0	106	90-110	

MATRIX SPIKE SAMPLE: 163276

Parameter	Units	2623682001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.96	10	11.5	105	90-110	

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 36222 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 163614 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/01/19 13:03	

LABORATORY CONTROL SAMPLE: 163615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.7	107	90-110	

MATRIX SPIKE SAMPLE: 163616

Parameter	Units	2623680001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	2.3	10	10.5	82	90-110	M1

MATRIX SPIKE SAMPLE: 163621

Parameter	Units	2623680003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	3.5	10	12.3	88	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623704

QC Batch: 575017 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623704001, 2623704002

METHOD BLANK: 3124986 Matrix: Water
Associated Lab Samples: 2623704001, 2623704002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/02/19 15:06	

LABORATORY CONTROL SAMPLE: 3124987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	19.0	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124988 3124989

Parameter	Units	2623704001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	0.65J	20	20	19.6	19.8	95	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124990 3124991

Parameter	Units	2623708004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.4	96	96	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623704

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 36345

[1]	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria

ANALYTE QUALIFIERS

1A	The calculated SCF was below the desired range of 0.6 to 1.0 mg/L. All other QC indicators, including the LCS, were within acceptance criteria
B	Analyte was detected in the associated method blank.
H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623704001	**EB-02**	EPA 3010A	36168	EPA 6010D	36254
2623704002	**FB-02**	EPA 3010A	36168	EPA 6010D	36254
2623704001	**EB-02**	EPA 3005A	36173	EPA 6020B	36203
2623704002	**FB-02**	EPA 3005A	36173	EPA 6020B	36203
2623704001	**EB-02**	EPA 7470A	36428	EPA 7470A	36481
2623704002	**FB-02**	EPA 7470A	36428	EPA 7470A	36481
2623704001	**EB-02**	EPA 1664B	36282		
2623704002	**FB-02**	EPA 1664B	36282		
2623704001	**EB-02**	SM 2320B	36503		
2623704002	**FB-02**	SM 2320B	36503		
2623704001	**EB-02**	SM 2540C	36437		
2623704002	**FB-02**	SM 2540C	36437		
2623704001	**EB-02**	SM 2540D	36165		
2623704002	**FB-02**	SM 2540D	36165		
2623704001	**EB-02**	SM 4500-Cl G	36248		
2623704002	**FB-02**	SM 4500-Cl G	36248		
2623704001	**EB-02**	SM 4500-P	36125		
2623704002	**FB-02**	SM 4500-P	36125		
2623704001	**EB-02**	SM 4500-S2 D	36187		
2623704002	**FB-02**	SM 4500-S2 D	36187		
2623704001	**EB-02**	SM 5210B	36102	SM 5210B	36345
2623704002	**FB-02**	SM 5210B	36102	SM 5210B	36345
2623704001	**EB-02**	TKN-NH3 Calculation	36472		
2623704002	**FB-02**	TKN-NH3 Calculation	36472		
2623704001	**EB-02**	EPA 300.0	36067		
2623704002	**FB-02**	EPA 300.0	36067		
2623704001	**EB-02**	EPA 350.1	36150		
2623704002	**FB-02**	EPA 350.1	36150		
2623704001	**EB-02**	EPA 351.2	36222	EPA 351.2	36226
2623704002	**FB-02**	EPA 351.2	36222	EPA 351.2	36226
2623704001	**EB-02**	SM 5310B	575017		
2623704002	**FB-02**	SM 5310B	575017		

Pace Analytical

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 Fax:
Requested Due Date:	Standard TAT

Section B
Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW 6581

Section C
Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency
State / Location
GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Clorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
Requested Analysis Filtered (Y/N)																			N	N	N	N	N	N	N	N	N	N	N	N		
1	EB-02	WT	C	9/26/19	1735	9/26/19	1750	25	10	3	1		5	1					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1
2	FB-02	WT	G	9/26/19	1800	9/26/19	1825	25	10	3	1		5	1					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2
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12																																

NM 09/26/19

ADDITIONAL COMMENTS	RELINQUISHED 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)
	Noelia Muskus / Geosyntec	9/26/19	2055	C. Muller / Pace	9/27/19	1142				
				Chandler Fowler	9/27/19	1315	2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/26/19

WO# : 2623704

2623704

Pace Analytical

Sample Condition Upon Receipt

WO#: 2623704

Client Name: GAPower/CCR

PM: BM Due Date: 10/04/19

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 214 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.0°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/19

Temp should be above freezing to 6°C Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623706

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623706001	**HGWC-13**	Water	09/26/19 13:50	09/27/19 13:15
2623706002	**MW-24d**	Water	09/26/19 16:50	09/27/19 13:15
2623706003	**MW-27D**	Water	09/26/19 10:11	09/27/19 13:15
2623706004	**MW-6**	Water	09/26/19 12:29	09/27/19 13:15
2623706005	**MW-7**	Water	09/26/19 15:22	09/27/19 13:15
2623706006	**MW-28D**	Water	09/26/19 14:50	09/27/19 13:15
2623706007	**MW-26D**	Water	09/26/19 19:19	09/27/19 13:15

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SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623706001	**HGWC-13**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623706002	**MW-24d**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623706003	**MW-27D**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623706004	**MW-6**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	MWB	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623706005	**MW-7**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623706006	**MW-28D**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623706007	**MW-26D**	EPA 6010	CS2	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: HGWC-13 **Lab ID: 2623706001** Collected: 09/26/19 13:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**1.4**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:31	7439-89-6	
Magnesium	**24.4**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:31	7439-95-4	
Manganese	**3.7**	mg/L	0.10	0.0084	20	10/08/19 16:13	10/10/19 15:08	7439-96-5	
Phosphorus	**0.022J**	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:31	7723-14-0	N2
Potassium	**5.0**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:31	7440-09-7	
Sodium	**10.1**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:31	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**102**	mg/L	20.0	20.0	1		10/01/19 19:04		
Alkalinity, Total as CaCO3	**102**	mg/L	20.0	20.0	1		10/01/19 19:04		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 13:31		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:45	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**1.7**	mg/L	1.0	0.50	1		10/02/19 17:16		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: MW-24d **Lab ID: 2623706002** Collected: 09/26/19 16:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**1.0**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:48	7439-89-6	
Magnesium	**5.1**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:48	7439-95-4	
Manganese	**0.72**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:48	7439-96-5	
Phosphorus	**0.025J**	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:48	7723-14-0	N2
Potassium	**0.45J**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:48	7440-09-7	
Sodium	**11.3**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:48	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**102**	mg/L	20.0	20.0	1		10/01/19 19:08		
Alkalinity, Total as CaCO3	**102**	mg/L	20.0	20.0	1		10/01/19 19:08		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:01		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 17:59	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: MW-27D **Lab ID: 2623706003** Collected: 09/26/19 10:11 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.015J**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:24	7439-89-6	
Magnesium	**19.7**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:24	7439-95-4	
Manganese	**0.058**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:24	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:24	7723-14-0	N2
Potassium	**0.92J**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:24	7440-09-7	
Sodium	**27.8**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**166**	mg/L	20.0	20.0	1		10/01/19 19:12		
Alkalinity, Total as CaCO3	**166**	mg/L	20.0	20.0	1		10/01/19 19:12		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 20:40		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:00	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 16:42		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: MW-6 **Lab ID: 2623706004** Collected: 09/26/19 12:29 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.51**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:27	7439-89-6	
Magnesium	**14.3**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:27	7439-95-4	
Manganese	**0.55**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:27	7439-96-5	
Phosphorus	**0.017J**	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:27	7723-14-0	N2
Potassium	**1.2**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:27	7440-09-7	
Sodium	**13.1**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:27	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**234**	mg/L	20.0	20.0	1		10/01/19 19:16		
Alkalinity, Total as CaCO3	**234**	mg/L	20.0	20.0	1		10/01/19 19:16		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/27/19 20:41		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:00	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.52J**	mg/L	1.0	0.50	1		10/02/19 17:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: MW-7 **Lab ID: 2623706005** Collected: 09/26/19 15:22 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.037J**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:44	7439-89-6	
Magnesium	**9.8**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:44	7439-95-4	
Manganese	**0.070**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:44	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:44	7723-14-0	N2
Potassium	**0.79J**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:44	7440-09-7	
Sodium	**8.2**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:44	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**113**	mg/L	20.0	20.0	1		10/01/19 19:22		
Alkalinity, Total as CaCO3	**113**	mg/L	20.0	20.0	1		10/01/19 19:22		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:02		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:01	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:22		

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: MW-28D **Lab ID: 2623706006** Collected: 09/26/19 14:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.89**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:34	7439-89-6	
Magnesium	**22.5**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:34	7439-95-4	
Manganese	**0.12**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:34	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:34	7723-14-0	N2
Potassium	**0.99J**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:34	7440-09-7	
Sodium	**9.6**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:34	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**173**	mg/L	20.0	20.0	1		10/03/19 12:00		
Alkalinity, Total as CaCO3	**173**	mg/L	20.0	20.0	1		10/03/19 12:00		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:03		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:02	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:08		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Sample: MW-26D **Lab ID: 2623706007** Collected: 09/26/19 19:19 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.40**	mg/L	0.040	0.0092	1	10/08/19 16:13	10/09/19 13:51	7439-89-6	
Magnesium	**15.9**	mg/L	0.50	0.084	1	10/08/19 16:13	10/09/19 13:51	7439-95-4	
Manganese	**0.17**	mg/L	0.0050	0.00042	1	10/08/19 16:13	10/09/19 13:51	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 16:13	10/09/19 13:51	7723-14-0	N2
Potassium	**2.0**	mg/L	1.0	0.15	1	10/08/19 16:13	10/09/19 13:51	7440-09-7	
Sodium	**12.2**	mg/L	2.0	0.27	1	10/08/19 16:13	10/09/19 13:51	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**175**	mg/L	20.0	20.0	1		10/03/19 12:13		
Alkalinity, Total as CaCO3	**175**	mg/L	20.0	20.0	1		10/03/19 12:13		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		09/28/19 14:03		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		09/30/19 18:03	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/02/19 18:55		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 576681 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

METHOD BLANK: 3134011 Matrix: Water
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/09/19 12:43	
Magnesium	mg/L	ND	0.50	0.084	10/09/19 12:43	
Manganese	mg/L	ND	0.0050	0.00042	10/09/19 12:43	
Phosphorus	mg/L	ND	0.045	0.014	10/09/19 12:43	N2
Potassium	mg/L	ND	1.0	0.15	10/09/19 12:43	
Sodium	mg/L	ND	2.0	0.27	10/09/19 12:43	

LABORATORY CONTROL SAMPLE: 3134012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.5	98	80-120	
Magnesium	mg/L	12.5	12.2	98	80-120	
Manganese	mg/L	0.25	0.25	98	80-120	
Phosphorus	mg/L	0.25	0.23	92	80-120	N2
Potassium	mg/L	12.5	12.1	97	80-120	
Sodium	mg/L	12.5	12.3	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3134013 3134014

Parameter	Units	2623635003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	3.1	2.5	2.5	5.6	5.6	98	100	75-125	1	20	
Magnesium	mg/L	8.6	12.5	12.5	21.1	21.2	99	101	75-125	1	20	
Manganese	mg/L	0.17	0.25	0.25	0.42	0.42	98	99	75-125	1	20	
Phosphorus	mg/L	0.083	0.25	0.25	0.33	0.33	98	99	75-125	1	20	N2
Potassium	mg/L	0.31J	12.5	12.5	13.1	13.1	102	103	75-125	0	20	
Sodium	mg/L	11.0	12.5	12.5	23.7	23.8	101	103	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 36284 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005

METHOD BLANK: 163853 Matrix: Water
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/01/19 17:35	

LABORATORY CONTROL SAMPLE: 163854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	98.0	98	85-115	

SAMPLE DUPLICATE: 163855

Parameter	Units	2623635002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	165	164	1	10	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 36366 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623706006, 2623706007

METHOD BLANK: 164227 Matrix: Water
Associated Lab Samples: 2623706006, 2623706007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/03/19 11:56	

LABORATORY CONTROL SAMPLE: 164228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	96.0	96	85-115	

SAMPLE DUPLICATE: 164468

Parameter	Units	2623706006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	173	172	1	10	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 36119 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623706003, 2623706004

METHOD BLANK: 163046 Matrix: Water
Associated Lab Samples: 2623706003, 2623706004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/27/19 20:37	

LABORATORY CONTROL SAMPLE: 163047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163048 163049

Parameter	Units	2623707001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.51	100	102	80-120	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 36125 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623706001, 2623706002, 2623706005, 2623706006, 2623706007

METHOD BLANK: 163138 Matrix: Water
Associated Lab Samples: 2623706001, 2623706002, 2623706005, 2623706006, 2623706007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	09/28/19 13:30	

LABORATORY CONTROL SAMPLE: 163139

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163140 163141

Parameter	Units	2623698004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.50	100	101	80-120	1	10	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 36187 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

METHOD BLANK: 163403 Matrix: Water
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	09/30/19 17:04	

LABORATORY CONTROL SAMPLE: 163404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163405 163406

Parameter	Units	2623614004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.40	0.40	81	80	30-129	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623706

QC Batch: 575017 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

METHOD BLANK: 3124986 Matrix: Water
Associated Lab Samples: 2623706001, 2623706002, 2623706003, 2623706004, 2623706005, 2623706006, 2623706007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/02/19 15:06	

LABORATORY CONTROL SAMPLE: 3124987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	19.0	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124988 3124989

Parameter	Units	2623704001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	0.65J	20	20	19.6	19.8	95	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124990 3124991

Parameter	Units	2623708004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	ND	20	20	19.6	19.4	96	96	80-120	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623706

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623706

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623706001	**HGWC-13**	EPA 3010	576681	EPA 6010	576722
2623706002	**MW-24d**	EPA 3010	576681	EPA 6010	576722
2623706003	**MW-27D**	EPA 3010	576681	EPA 6010	576722
2623706004	**MW-6**	EPA 3010	576681	EPA 6010	576722
2623706005	**MW-7**	EPA 3010	576681	EPA 6010	576722
2623706006	**MW-28D**	EPA 3010	576681	EPA 6010	576722
2623706007	**MW-26D**	EPA 3010	576681	EPA 6010	576722
2623706001	**HGWC-13**	SM 2320B	36284		
2623706002	**MW-24d**	SM 2320B	36284		
2623706003	**MW-27D**	SM 2320B	36284		
2623706004	**MW-6**	SM 2320B	36284		
2623706005	**MW-7**	SM 2320B	36284		
2623706006	**MW-28D**	SM 2320B	36366		
2623706007	**MW-26D**	SM 2320B	36366		
2623706001	**HGWC-13**	SM 4500-P	36125		
2623706002	**MW-24d**	SM 4500-P	36125		
2623706003	**MW-27D**	SM 4500-P	36119		
2623706004	**MW-6**	SM 4500-P	36119		
2623706005	**MW-7**	SM 4500-P	36125		
2623706006	**MW-28D**	SM 4500-P	36125		
2623706007	**MW-26D**	SM 4500-P	36125		
2623706001	**HGWC-13**	SM 4500-S2 D	36187		
2623706002	**MW-24d**	SM 4500-S2 D	36187		
2623706003	**MW-27D**	SM 4500-S2 D	36187		
2623706004	**MW-6**	SM 4500-S2 D	36187		
2623706005	**MW-7**	SM 4500-S2 D	36187		
2623706006	**MW-28D**	SM 4500-S2 D	36187		
2623706007	**MW-26D**	SM 4500-S2 D	36187		
2623706001	**HGWC-13**	SM 5310B	575017		
2623706002	**MW-24d**	SM 5310B	575017		
2623706003	**MW-27D**	SM 5310B	575017		
2623706004	**MW-6**	SM 5310B	575017		
2623706005	**MW-7**	SM 5310B	575017		
2623706006	**MW-28D**	SM 5310B	575017		
2623706007	**MW-26D**	SM 5310B	575017		

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical

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 Fax:
Requested Due Date:	Standard TAT

Section B
Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C
Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency	
State / Location	GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Total alkalinity, bicarbonate N; orthophosphate N; iron,manganese,magnesium N; phosphorous,potassium N; sodium N; sulfide N; dissolved organic carbon N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
1	HGWC-13	WT	G	9/26/19	13:26	9/26/19	13:50	22.71	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	Orthophosphate and DOC Field Filtered
2	MW-24d	WT	G	9/26/19	16:15	9/26/19	16:50		6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	↓
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

DC 09-26-2019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Dan Gi... / Geosyntec	9/26/19	1900	Marlia Mushers / Geosyntec	9/26/19	1900				
	Marlia Mushers / Geosyntec	9/26/19	2055	E Muller / Pace	9/27/19	1142				
				Charles Henley	9/27/19	1325	5.0	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature] DATE Signed: 9-26-2019

WO# : 2623706

2623706

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon					Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																												
																		N	N	N	N	N	N	N					
1	MW-27D	WT	G	9/26/19	0930	9/26/19	1011	21	6	2			3	1				Y	Y	Y	Y	Y	Y	Y					N	orthophosphate & DOC were field filtered
2	MW-6	WT	G	9/26/19	1205	9/26/19	1229	22	6	2			3	1				Y	Y	Y	Y	Y	Y	Y					N	
3	MW-7	WT	G	9/26/19	1445	9/26/19	1522	21	6	2			3	1				Y	Y	Y	Y	Y	Y	Y					N	
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

NM 09/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Noelia Muskus	9/26/19	2055	J Miller / Pace	9/27/19	1142				
				Charles Hardy	9/27/19	2315	5.2	X	Y	X

WO#: 2623706

PM: BM Due Date: 10/04/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/26/19

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Y/N	Analyses Test: Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	N		
1	MW-28D	WT	G	9/26/19	1330	9/26/19	1450	23	6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	orthophosphate & DOC were field filtered
2	MW-26D	WT	G	9/26/19	1855	9/26/19	1919		6	2			3	1					Y	Y	Y	Y	Y	Y	Y	N	↓
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BW 9/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinman / Geosyntec	9/26/19	1925	Madia Martin / Geosyntec	9/26/19	1925	
	Madia Martin / Geosyntec	9/26/19	2055	[signature]	9/27/19	1315	5.2 X Y 7

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinman

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/26/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

WO#: 2623706

PM: BM Due Date: 10/04/19

CLIENT: GAPower-CCR

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power/CCR Project #: _____

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Optional
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 214 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.0°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/14

Temp should be above freezing to 6°C Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623752

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623752

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

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Arizona Certification# AZ0819
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623752

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623752001	**HGWC-9**	Water	09/27/19 13:20	09/30/19 12:39
2623752002	**HGWC-10**	Water	09/27/19 10:39	09/30/19 12:39
2623752003	**MW-19**	Water	09/27/19 13:30	09/30/19 12:39
2623752004	**MW-25d**	Water	09/27/19 10:00	09/30/19 12:39
2623752005	**HGWC-12**	Water	09/27/19 11:20	09/30/19 12:39
2623752006	**HGWC-11**	Water	09/27/19 12:48	09/30/19 12:39

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623752

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623752001	**HGWC-9**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623752002	**HGWC-10**	EPA 6010	LEC	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623752003	**MW-19**	EPA 6010	CS2, LEC	7	PASI-O
		EPA 6020B	CSW	2	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 1664B	SJS	1	PASI-GA
		SM 2320B	S1A	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		SM 2540D	ALW	1	PASI-GA
		SM 4500-Cl G	KN	1	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5210B	KN	1	PASI-GA
		TKN-NH3 Calculation	LPH	1	PASI-GA
		EPA 300.0	MWB	2	PASI-GA
		EPA 350.1	ANB	1	PASI-GA
		EPA 351.2	ANB	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623752

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623752004	**MW-25d**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623752005	**HGWC-12**	EPA 6010	CS2, LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O
2623752006	**HGWC-11**	EPA 6010	LEC	6	PASI-O
		SM 2320B	S1A	2	PASI-GA
		SM 4500-P	JAD	1	PASI-GA
		SM 4500-S2 D	KN	1	PASI-GA
		SM 5310B	SA1	1	PASI-O

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: HGWC-9 **Lab ID: 2623752001** Collected: 09/27/19 13:20 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.32**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:23	7439-89-6	
Magnesium	**18.0**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:23	7439-95-4	
Manganese	**0.43**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:23	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:23	7723-14-0	N2
Potassium	**3.2**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:23	7440-09-7	
Sodium	**13.4**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:23	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**171**	mg/L	20.0	20.0	1		10/04/19 12:36		
Alkalinity, Total as CaCO3	**171**	mg/L	20.0	20.0	1		10/04/19 12:36		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:39		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:04	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	ND	mg/L	1.0	0.50	1		10/04/19 09:11		

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: HGWC-10 **Lab ID: 2623752002** Collected: 09/27/19 10:39 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:09	7439-89-6	
Magnesium	**12.2**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:09	7439-95-4	
Manganese	**2.1**	mg/L	0.050	0.0042	10	10/08/19 14:47	10/10/19 13:36	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:09	7723-14-0	N2
Potassium	**1.7**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:09	7440-09-7	
Sodium	**11.9**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:09	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	**501000**	ug/L	32100	5060	10	10/08/19 14:47	10/10/19 13:36		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	1.2	0.0093	50	10/03/19 17:28	10/05/19 15:48	7440-50-8	
Zinc	ND	mg/L	0.50	0.077	50	10/03/19 17:28	10/05/19 15:48	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/04/19 08:48	10/04/19 13:28	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	4.9	4.9	1		10/03/19 17:00		
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**248**	mg/L	20.0	20.0	1		10/04/19 12:40		
Alkalinity, Total as CaCO3	**248**	mg/L	20.0	20.0	1		10/04/19 12:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**626**	mg/L	10.0	10.0	1		10/04/19 20:01		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		10/02/19 18:44		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:31	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:40		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:05	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/02/19 08:33	10/07/19 11:00		H3
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: HGWC-10 **Lab ID: 2623752002** Collected: 09/27/19 10:39 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.029J**	mg/L	0.050	0.0050	1		10/01/19 11:55	14797-55-8	H3
Nitrite as N	ND	mg/L	0.050	0.011	1		10/01/19 11:55	14797-65-0	H3
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.10	0.10	1		10/02/19 09:24	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	0.40	0.40	1	10/02/19 08:00	10/02/19 11:36	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.63J**	mg/L	1.0	0.50	1		10/04/19 07:45		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: MW-19 **Lab ID: 2623752003** Collected: 09/27/19 13:30 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.10**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:27	7439-89-6	
Magnesium	**12.3**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:27	7439-95-4	
Manganese	**3.2**	mg/L	0.050	0.0042	10	10/08/19 14:47	10/10/19 13:46	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:27	7723-14-0	N2
Potassium	**3.6**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:27	7440-09-7	
Sodium	**8.4**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:27	7440-23-5	
Tot Hardness asCaCO3 (SM 2340B	**299000**	ug/L	3210	506	1	10/08/19 14:47	10/09/19 21:27		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 16:05	7440-50-8	
Zinc	**0.0055J**	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 16:05	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/04/19 08:48	10/04/19 13:37	7439-97-6	
HEM, Oil and Grease	Analytical Method: EPA 1664B								
Oil and Grease	ND	mg/L	5.0	5.0	1		10/03/19 17:00		
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**75.0**	mg/L	20.0	20.0	1		10/04/19 12:47		
Alkalinity, Total as CaCO3	**75.0**	mg/L	20.0	20.0	1		10/04/19 12:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**420**	mg/L	10.0	10.0	1		10/04/19 20:01		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		10/02/19 18:44		
4500CL G Chlorine, Residual	Analytical Method: SM 4500-Cl G								
Chlorine, Total Residual	ND	mg/L	0.1	0.1	1		10/01/19 12:32	7782-50-5	H3,H6
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:40		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:05	18496-25-8	
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B								
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/02/19 08:33	10/07/19 11:01		H3
Total Organic Nitrogen Calc.	Analytical Method: TKN-NH3 Calculation								
Total Organic Nitrogen	ND	mg/L	0.40	0.40	1		10/03/19 22:50		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: MW-19 **Lab ID: 2623752003** Collected: 09/27/19 13:30 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.039J**	mg/L	0.050	0.0050	1		10/01/19 12:59	14797-55-8	H3
Nitrite as N	**0.032J**	mg/L	0.050	0.011	1		10/01/19 12:59	14797-65-0	H3
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**1.0**	mg/L	0.10	0.10	1		10/02/19 09:25	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.2**	mg/L	0.40	0.40	1	10/02/19 08:00	10/02/19 11:38	7727-37-9	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.79J**	mg/L	1.0	0.50	1		10/04/19 09:27		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: MW-25d **Lab ID: 2623752004** Collected: 09/27/19 10:00 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.22**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 20:50	7439-89-6	
Magnesium	**8.5**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 20:50	7439-95-4	
Manganese	**0.040**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 20:50	7439-96-5	
Phosphorus	**0.019J**	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 20:50	7723-14-0	N2
Potassium	**0.69J**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 20:50	7440-09-7	
Sodium	**118**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 20:50	7440-23-5	M1
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**255**	mg/L	20.0	20.0	1		10/04/19 12:55		
Alkalinity, Total as CaCO3	**255**	mg/L	20.0	20.0	1		10/04/19 12:55		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:41		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	**0.49**	mg/L	0.20	0.20	1		10/03/19 14:06	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**1.8**	mg/L	1.0	0.50	1		10/04/19 07:02		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: HGWC-12 **Lab ID: 2623752005** Collected: 09/27/19 11:20 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**0.11**	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:13	7439-89-6	
Magnesium	**15.6**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:13	7439-95-4	
Manganese	**1.9**	mg/L	0.050	0.0042	10	10/08/19 14:47	10/10/19 13:49	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:13	7723-14-0	N2
Potassium	**7.5**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:13	7440-09-7	
Sodium	**10.5**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:13	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**157**	mg/L	20.0	20.0	1		10/04/19 13:03		
Alkalinity, Total as CaCO3	**157**	mg/L	20.0	20.0	1		10/04/19 13:03		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:42		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:07	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.76J**	mg/L	1.0	0.50	1		10/04/19 08:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623752

Sample: HGWC-11 **Lab ID: 2623752006** Collected: 09/27/19 12:48 Received: 09/30/19 12:39 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	ND	mg/L	0.040	0.0092	1	10/08/19 14:47	10/09/19 21:18	7439-89-6	
Magnesium	**15.5**	mg/L	0.50	0.084	1	10/08/19 14:47	10/09/19 21:18	7439-95-4	
Manganese	**0.017**	mg/L	0.0050	0.00042	1	10/08/19 14:47	10/09/19 21:18	7439-96-5	
Phosphorus	ND	mg/L	0.045	0.014	1	10/08/19 14:47	10/09/19 21:18	7723-14-0	N2
Potassium	**2.5**	mg/L	1.0	0.15	1	10/08/19 14:47	10/09/19 21:18	7440-09-7	
Sodium	**6.7**	mg/L	2.0	0.27	1	10/08/19 14:47	10/09/19 21:18	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**71.0**	mg/L	20.0	20.0	1		10/04/19 13:12		
Alkalinity, Total as CaCO3	**71.0**	mg/L	20.0	20.0	1		10/04/19 13:12		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/01/19 15:43		H3
4500S2D Sulfide Water	Analytical Method: SM 4500-S2 D								
Sulfide	ND	mg/L	0.20	0.20	1		10/03/19 14:08	18496-25-8	
5310B Dissolved Organic Carbon	Analytical Method: SM 5310B								
Dissolved Organic Carbon	**0.92J**	mg/L	1.0	0.50	1		10/04/19 08:55		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36474 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 164769 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/04/19 13:23	

LABORATORY CONTROL SAMPLE: 164770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164771 164772

Parameter	Units	2623752002 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	0.0025	0.0025	0.0024	0.0024	95	96	75-125	1	20	

SAMPLE DUPLICATE: 164773

Parameter	Units	2623528009 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	mg/L	ND	ND		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 576632 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

METHOD BLANK: 3133743 Matrix: Water
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.0092	10/10/19 13:56	
Magnesium	mg/L	ND	0.50	0.084	10/10/19 13:56	
Manganese	mg/L	ND	0.0050	0.00042	10/10/19 13:56	
Phosphorus	mg/L	ND	0.045	0.014	10/10/19 13:56	N2
Potassium	mg/L	ND	1.0	0.15	10/10/19 13:56	
Sodium	mg/L	ND	2.0	0.27	10/10/19 13:56	
Tot Hardness asCaCO3 (SM 2340B	ug/L	ND	3210	506	10/10/19 13:56	

LABORATORY CONTROL SAMPLE: 3133744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	2.5	2.6	105	80-120	
Magnesium	mg/L	12.5	13.0	104	80-120	
Manganese	mg/L	0.25	0.26	106	80-120	
Phosphorus	mg/L	0.25	0.25	99	80-120	N2
Potassium	mg/L	12.5	12.8	103	80-120	
Sodium	mg/L	12.5	13.2	106	80-120	
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	86400	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3133745 3133746

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/L	0.22	2.5	2.5	2.8	2.8	105	103	75-125	1	20	
Magnesium	mg/L	8.5	12.5	12.5	21.6	21.3	105	103	75-125	2	20	
Manganese	mg/L	0.040	0.25	0.25	0.31	0.30	107	103	75-125	3	20	
Phosphorus	mg/L	0.019J	0.25	0.25	0.28	0.28	103	104	75-125	1	20	N2
Potassium	mg/L	0.69J	12.5	12.5	13.6	13.5	103	103	75-125	1	20	
Sodium	mg/L	118	12.5	12.5	135	131	130	102	75-125	3	20	M1
Tot Hardness asCaCO3 (SM 2340B	ug/L	107000	82700	82700	196000	191000	107	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36434 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 164547 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Copper	mg/L	ND	0.025	0.00019	10/05/19 14:53	
Zinc	mg/L	0.013	0.010	0.0015	10/05/19 14:53	

LABORATORY CONTROL SAMPLE: 164548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	mg/L	0.1	0.099	99	80-120	
Zinc	mg/L	0.1	0.11	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164549 164550

Parameter	Units	2623793002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	mg/L	ND	0.1	0.1	0.10	0.099	104	99	75-125	5	20	
Zinc	mg/L	0.0032J	0.1	0.1	0.11	0.10	103	98	75-125	5	20	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36370 Analysis Method: EPA 1664B
QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 164248 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	5.0	10/03/19 08:00	

LABORATORY CONTROL SAMPLE: 164249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	35.3	88	78-114	

MATRIX SPIKE SAMPLE: 164250

Parameter	Units	2623564001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	64.7	44.4	101	82	78-114	

SAMPLE DUPLICATE: 164251

Parameter	Units	2623579001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		75	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36486 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

METHOD BLANK: 164845 Matrix: Water
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/04/19 12:28	

LABORATORY CONTROL SAMPLE: 164846

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	102	102	85-115	

SAMPLE DUPLICATE: 164847

Parameter	Units	2623698004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	153	152	1	10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36519 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623752002, 2623752003

LABORATORY CONTROL SAMPLE: 165036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	409	102	84-108	

SAMPLE DUPLICATE: 165037

Parameter	Units	2623748003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	442	458	4	10	

SAMPLE DUPLICATE: 165038

Parameter	Units	2623793003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	475	497	5	10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36383 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 164324 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	5.0	10/02/19 18:43	

LABORATORY CONTROL SAMPLE: 164325

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	99.0	99	90-110	

SAMPLE DUPLICATE: 164326

Parameter	Units	2623856001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 164327

Parameter	Units	2623677002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36248 Analysis Method: SM 4500-Cl G
QC Batch Method: SM 4500-Cl G Analysis Description: 4500CL G Chlorine, Total Residual
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 163705 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	ND	0.1	0.1	10/01/19 12:26	H6

LABORATORY CONTROL SAMPLE: 163706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	1	1	100	86-116	H6

SAMPLE DUPLICATE: 163724

Parameter	Units	2623782001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	0.3	0.3	0	10	H3,H6

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36245 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

METHOD BLANK: 163688 Matrix: Water
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/01/19 15:34	

LABORATORY CONTROL SAMPLE: 163689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163690 163691

Parameter	Units	2623750001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.50	0.51	100	101	80-120	2	10	H3

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36416 Analysis Method: SM 4500-S2 D
QC Batch Method: SM 4500-S2 D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

METHOD BLANK: 164448 Matrix: Water
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.20	0.20	10/03/19 13:40	

LABORATORY CONTROL SAMPLE: 164449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.43	87	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164450 164451

Parameter	Units	2623698001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	ND	ND	17	15	30-129		10	M1

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36267 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 163798 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/07/19 10:57	

LABORATORY CONTROL SAMPLE: 163800

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	190	96	85-115	

SAMPLE DUPLICATE: 163883

Parameter	Units	2623766004 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	401	416	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36211 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 163581 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/01/19 11:13	
Nitrite as N	mg/L	ND	0.050	0.011	10/01/19 11:13	

LABORATORY CONTROL SAMPLE: 163582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.6	106	90-110	
Nitrite as N	mg/L	10	10.9	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163583 163584

Parameter	Units	2623752002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.029J	10	10	10.2	10.4	102	103	90-110	1	15	H3
Nitrite as N	mg/L	ND	10	10	10.3	10.3	103	103	90-110	1	15	H3

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36308 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 163917 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.10	10/02/19 09:16	

LABORATORY CONTROL SAMPLE: 163918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.2	102	90-110	

MATRIX SPIKE SAMPLE: 163919

Parameter	Units	2623752002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	10	10.5	104	90-110	

MATRIX SPIKE SAMPLE: 163920

Parameter	Units	2623805001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.3	10	11.6	103	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 36290 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 2623752002, 2623752003

METHOD BLANK: 163897 Matrix: Water
Associated Lab Samples: 2623752002, 2623752003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.40	0.40	10/02/19 11:29	

LABORATORY CONTROL SAMPLE: 163898

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.4	94	90-110	

MATRIX SPIKE SAMPLE: 163899

Parameter	Units	2623752002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	10	10.2	101	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623752

QC Batch: 575346 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B Dissolved Organic Carbon
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

METHOD BLANK: 3126906 Matrix: Water
Associated Lab Samples: 2623752001, 2623752002, 2623752003, 2623752004, 2623752005, 2623752006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.50	10/04/19 06:33	

LABORATORY CONTROL SAMPLE: 3126907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	20	18.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3126908 3126909

Parameter	Units	2623752004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	1.8	20	20	21.1	20.9	97	96	80-120	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623752

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-GA	Pace Analytical Services - Atlanta, GA
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623752

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623752001	**HGWC-9**	EPA 3010	576632	EPA 6010	576717
2623752002	**HGWC-10**	EPA 3010	576632	EPA 6010	576717
2623752003	**MW-19**	EPA 3010	576632	EPA 6010	576717
2623752004	**MW-25d**	EPA 3010	576632	EPA 6010	576717
2623752005	**HGWC-12**	EPA 3010	576632	EPA 6010	576717
2623752006	**HGWC-11**	EPA 3010	576632	EPA 6010	576717
2623752002	**HGWC-10**	EPA 3005A	36434	EPA 6020B	36455
2623752003	**MW-19**	EPA 3005A	36434	EPA 6020B	36455
2623752002	**HGWC-10**	EPA 7470A	36474	EPA 7470A	36493
2623752003	**MW-19**	EPA 7470A	36474	EPA 7470A	36493
2623752002	**HGWC-10**	EPA 1664B	36370		
2623752003	**MW-19**	EPA 1664B	36370		
2623752001	**HGWC-9**	SM 2320B	36486		
2623752002	**HGWC-10**	SM 2320B	36486		
2623752003	**MW-19**	SM 2320B	36486		
2623752004	**MW-25d**	SM 2320B	36486		
2623752005	**HGWC-12**	SM 2320B	36486		
2623752006	**HGWC-11**	SM 2320B	36486		
2623752002	**HGWC-10**	SM 2540C	36519		
2623752003	**MW-19**	SM 2540C	36519		
2623752002	**HGWC-10**	SM 2540D	36383		
2623752003	**MW-19**	SM 2540D	36383		
2623752002	**HGWC-10**	SM 4500-Cl G	36248		
2623752003	**MW-19**	SM 4500-Cl G	36248		
2623752001	**HGWC-9**	SM 4500-P	36245		
2623752002	**HGWC-10**	SM 4500-P	36245		
2623752003	**MW-19**	SM 4500-P	36245		
2623752004	**MW-25d**	SM 4500-P	36245		
2623752005	**HGWC-12**	SM 4500-P	36245		
2623752006	**HGWC-11**	SM 4500-P	36245		
2623752001	**HGWC-9**	SM 4500-S2 D	36416		
2623752002	**HGWC-10**	SM 4500-S2 D	36416		
2623752003	**MW-19**	SM 4500-S2 D	36416		
2623752004	**MW-25d**	SM 4500-S2 D	36416		
2623752005	**HGWC-12**	SM 4500-S2 D	36416		
2623752006	**HGWC-11**	SM 4500-S2 D	36416		
2623752002	**HGWC-10**	SM 5210B	36267	SM 5210B	36539
2623752003	**MW-19**	SM 5210B	36267	SM 5210B	36539
2623752002	**HGWC-10**	TKN-NH3 Calculation	36472		
2623752003	**MW-19**	TKN-NH3 Calculation	36472		
2623752002	**HGWC-10**	EPA 300.0	36211		
2623752003	**MW-19**	EPA 300.0	36211		

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623752

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623752002	**HGWC-10**	EPA 350.1	36308		
2623752003	**MW-19**	EPA 350.1	36308		
2623752002	**HGWC-10**	EPA 351.2	36290	EPA 351.2	36306
2623752003	**MW-19**	EPA 351.2	36290	EPA 351.2	36306
2623752001	**HGWC-9**	SM 5310B	575346		
2623752002	**HGWC-10**	SM 5310B	575346		
2623752003	**MW-19**	SM 5310B	575346		
2623752004	**MW-25d**	SM 5310B	575346		
2623752005	**HGWC-12**	SM 5310B	575346		
2623752006	**HGWC-11**	SM 5310B	575346		

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6381	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon								Residual Chlorine (Y/N)	
																		Y/N	N	N	N	N	N	N	N								
1	HGWC-9	WT	G	9/27/19	1258	9/27/19	1520	21	6	2			3	1				Y	Y	Y	Y	Y	Y	Y								N	orthophosphate & DOC were field filtered
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

NM 9/27/19

WO# : 2623752

2623752

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus Geosyntec	9/27/19	2130	Pace	9.30.19	1034	
	Pace	9.30.19	1239	MDahlman	9/30/19	1239	

SAMPLE CONDITIONS	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/27/19

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GWCJ301

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test Y/N	Total alkalinity, bicarbonate	orthophosphate	copper,iron,manganese,magnesium	mercury,phosphorous,potassium	sodium,total hardness,zinc	sulfide	dissolved organic carbon	nitrate/nitrite	TDS, TSS, Residual Chlorine	ammonia nitrogen, TKN, TON	BOD (5-day)	Oil and grease by 1664	Residual Chlorine (Y/N)	
1	HGWC-10	WT	G	9/27/19	0930	9/27/19	1039	21	10	3	1		5	1				N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	orthophosphate & dissolved field filtered
2	MW-19	NT	G	9/27/19	1225	9/27/19	1335	22	10	3	1		5	1				N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
3																		N												
4																		N												
5																		N												
6																		N												
7																		N												
8																		N												
9																		N												
10																		N												
11																		N												
12																		N												

BRW 9/27/19

WO#: 2623752

PM: BM Due Date: 10/07/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9.27.19	1655	Malia Mushon / Geosyntec	9/27/19	1655	
	Malia Mushon / Geosyntec	9/28/19	2130	1 Pace	9.30.19	1054	
	1 Pace	9.30.19	1239	M Dallman	9/30/19	1239	

SAMPLE CONDITIONS	
TEMP in C	2.9
Received on Ice (Y/N)	Y
Custody Sealed Cooler (Y/N)	Y
Samples Intact (Y/N)	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben W DATE Signed: 9/27/19

Pace Analytical

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Ac	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Total alkalinity, bicarbonate	orthophosphate	iron,manganese,magnesium	phosphorous,potassium	sodium	sulfide	dissolved organic carbon	Residual Chlorine (Y/N)	
																		Y/N	N	N	N	N	N	N	N		
1	MW-25d	WT	G	9/27/19	9:18	9/27/19	10:06	24.4	6	2			3	1				Y	Y	Y	Y	Y	Y	Y	N	orthophosphate & DOC Field Filtered
2	HGWC-12	WT	G	9/27/19	10:53	9/27/19	11:20	20.8	6	2			3	1				Y	Y	Y	Y	Y	Y	Y	N	
3	HGWC-11	WT	G	9/27/19	12:16	9/27/19	17:48	23.7	6	2			3	1				Y	Y	Y	Y	Y	Y	Y	N	
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

09-27-2019

WO#: 2623752

PM: BM Due Date: 10/07/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dan Gibbs / Geosyntec	9/30/19	16:55	Nadia Mutua / Geosyntec	9/27/19	1655	
	Nadia Mutua / Geosyntec	9/28/19	2130	/ Pace	9.30.19	1034	
	/ Pace	9.30.19	1239	M Dalman	9/30/19	1239	

SAMPLE CONDITIONS	
TEMP in C	2.9
Received on Ice (Y/N)	Y
Custody Sealed Cooler (Y/N)	Y
Samples Intact (Y/N)	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature]

DATE Signed: 9-27-2019

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2623752

PM: BM Due Date: 10/07/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.9 **Biological Tissue is Frozen:** Yes No Date and Initials of person examining contents: 9/30/19 MR

Temp should be above freezing to 6°C **Comments:**

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☐Yes	☑No	☐N/A	5. BOD, O-P, Res.d, NO3 out of hold.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☑Yes	☐No	☐N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 08, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623745

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623745

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623745

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623745001	**PMW-01**	Water	09/27/19 15:48	09/30/19 12:39
2623745002	**PMW-02**	Water	09/27/19 15:06	09/30/19 12:39

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623745

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623745001	**PMW-01**	EPA 6020B	CSW	3
		EPA 300.0	MWB	1
2623745002	**PMW-02**	EPA 6020B	CSW	3
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623745

Sample: PMW-01 **Lab ID: 2623745001** Collected: 09/27/19 15:48 Received: 09/30/19 12:39 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								
Arsenic	**0.30**	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 15:08	7440-38-2	
Boron	**2.3**	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:19	7440-42-8	
Molybdenum	**0.0086J**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 15:08	7439-98-7	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**557**	mg/L	20.0	0.34	20		10/07/19 14:40	14808-79-8	M6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623745

Sample: PMW-02 **Lab ID: 2623745002** Collected: 09/27/19 15:06 Received: 09/30/19 12:39 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								
Arsenic	**0.99**	mg/L	0.025	0.0018	5	10/03/19 17:28	10/07/19 14:25	7440-38-2	
Boron	**2.5**	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:25	7440-42-8	
Molybdenum	**0.083**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 15:14	7439-98-7	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**347**	mg/L	20.0	0.34	20		10/07/19 15:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623745

QC Batch: 36434 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623745001, 2623745002

METHOD BLANK: 164547 Matrix: Water
Associated Lab Samples: 2623745001, 2623745002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	10/05/19 14:53	
Boron	mg/L	ND	0.040	0.0049	10/05/19 14:53	
Molybdenum	mg/L	ND	0.010	0.00095	10/05/19 14:53	

LABORATORY CONTROL SAMPLE: 164548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	104	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164549 164550

Parameter	Units	2623793002 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	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Boron	mg/L	0.025J	1	1	1.1	1.0	103	100	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	106	103	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623745

QC Batch: 36548 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623745001, 2623745002

METHOD BLANK: 165133 Matrix: Water
Associated Lab Samples: 2623745001, 2623745002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.017	10/07/19 12:57	

LABORATORY CONTROL SAMPLE: 165134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	10	10.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 165135 165136

Parameter	Units	2623738001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	200	200	250	248	102	101	90-110	1	15	

MATRIX SPIKE SAMPLE: 165137

Parameter	Units	2623745001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	557	200	717	80	90-110	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623745

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623745

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623745001	**PMW-01**	EPA 3005A	36434	EPA 6020B	36455
2623745002	**PMW-02**	EPA 3005A	36434	EPA 6020B	36455
2623745001	**PMW-01**	EPA 300.0	36548		
2623745002	**PMW-02**	EPA 300.0	36548		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 of 2

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 Fax:
Requested Due Date:	Standard TAT

Section B Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Arsenic (N)	Boron (N)	Cobalt (N)	Molybdenum (N)	Sulfate (N)	Residual Chlorine (Y/N)	
	DMW-01	WT	G	9/26/19	1539	9/26/19	1548	31	2	1		1						Y	Y	~~Y~~	Y	Y	N	Omit Cobalt
																			KL 9/30/19					

NM 09/27/19

WO#: 2623745

2623745

RELINQUISHED 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)
Nadia Muskus / Geosyntec	9/29/19	2130	[signature] / Pace	9.30.19	1034				
			MRahman	9/30/19	1234	2.9	Y	Y	Y

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 9/27/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 of 2

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 Fax:
Requested Due Date:	Standard TAT

Section B Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	CWG581

Section C Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com.
Pace Profile #:	327 (AP)

GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Arsenic (N)	Boron (N)	Cobalt (N)	Molybdenum (N)	Sulfate (N)	Residual Chlorine (Y/N)	
	PMW-02	WG	G	9/27/19	1456	9/27/19	1506		2	1		1						Y	Y	~~Y~~ 10/30/19	Y	Y	N	Omit Cobalt

DG 09-27-2019

RELINQUISHED 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)
Dan Gibbs / Geosyntec	09/27/19	1655	Nolia Minton Geosyntec	9/27/19	1655				
Nolia Minton Geosyntec	9/27/19	2130	[signature] / Pace	9.30.19	10.30				
			MDalman	9/30/19	1239	2.9	Y	Y	Y

PRINT Name of SAMPLER: Dan Gibbs

SIGNATURE of SAMPLER: [signature] DATE Signed: 09-27-2019

WO#: 2623745
PM: BM Due Date: 10/07/19
CLIENT: GAPower-CCR

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2623745

PM: BM Due Date: 10/07/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.9 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/30/19 MR

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

APPENDIX D

Laboratory Analytical and Field Sampling Reports

Appendix D1: Laboratory Analytical Data Packages and Data Validation Reports

Appendix D2: Field Data Sheets

APPENDIX D1

Laboratory Analytical Data Packages and Data Validation Reports

Laboratory Reports

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 20, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616036

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616036

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616036

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616036001	**HGWA-1**	Water	03/12/19 14:31	03/13/19 14:00
2616036002	**HGWA-2**	Water	03/12/19 10:45	03/13/19 14:00
2616036003	**HGWA-3**	Water	03/12/19 10:00	03/13/19 14:00
2616036004	**FB-01**	Water	03/12/19 19:15	03/13/19 14:00
2616036005	**EB-01**	Water	03/12/19 19:50	03/13/19 14:00

Pace Analytical Services, LLC
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(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616036

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616036001	**HGWA-1**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616036002	**HGWA-2**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616036003	**HGWA-3**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616036004	**FB-01**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616036005	**EB-01**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616036

Sample: HGWA-1 **Lab ID: 2616036001** Collected: 03/12/19 14:31 Received: 03/13/19 14:00 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	03/14/19 14:26	03/15/19 23:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/14/19 14:26	03/15/19 23:24	7440-38-2	
Barium	**0.042**	mg/L	0.010	0.00078	1	03/14/19 14:26	03/15/19 23:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/14/19 14:26	03/15/19 23:24	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/14/19 14:26	03/15/19 23:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/14/19 14:26	03/15/19 23:24	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/14/19 14:26	03/15/19 23:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/14/19 14:26	03/15/19 23:24	7439-92-1	
Lithium	**0.0010J**	mg/L	0.050	0.00097	1	03/14/19 14:26	03/15/19 23:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/14/19 14:26	03/15/19 23:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/14/19 14:26	03/15/19 23:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/14/19 14:26	03/15/19 23:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:10	03/15/19 17:47	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.29J**	mg/L	0.30	0.029	1		03/16/19 05:19	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616036

Sample: HGWA-2 **Lab ID: 2616036002** Collected: 03/12/19 10:45 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 17:46	7440-36-0	
Arsenic	**0.00069J**	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 17:46	7440-38-2	B
Barium	**0.12**	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 17:46	7440-39-3	
Beryllium	**0.00017J**	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 17:46	7440-41-7	
Cadmium	**0.00013J**	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 17:46	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 17:46	7440-47-3	
Cobalt	**0.017**	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 17:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 17:46	7439-92-1	
Lithium	**0.0018J**	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 17:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 17:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 17:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 17:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:10	03/15/19 17:50	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.038J**	mg/L	0.30	0.029	1		03/16/19 05:42	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616036

Sample: HGWA-3 **Lab ID: 2616036003** Collected: 03/12/19 10:00 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 17:51	7440-36-0	
Arsenic	**0.00063J**	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 17:51	7440-38-2	B
Barium	**0.13**	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 17:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 17:51	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 17:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 17:51	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 17:51	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 17:51	7439-92-1	
Lithium	**0.0032J**	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 17:51	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 17:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 17:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 17:51	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:10	03/15/19 17:52	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.072J**	mg/L	0.30	0.029	1		03/16/19 07:36	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616036

Sample: FB-01 **Lab ID: 2616036004** Collected: 03/12/19 19:15 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 17:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 17:57	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 17:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 17:57	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 17:57	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 17:57	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 17:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 17:57	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 17:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 17:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 17:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 17:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:10	03/15/19 17:59	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		03/16/19 07:59	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616036

Sample: EB-01 **Lab ID: 2616036005** Collected: 03/12/19 19:50 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 18:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 18:03	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 18:03	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 18:03	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 18:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 18:03	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 18:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 18:03	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 18:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 18:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 18:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 18:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:10	03/15/19 18:02	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		03/16/19 08:22	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616036

QC Batch: 24380 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2616036001, 2616036002, 2616036003, 2616036004, 2616036005

METHOD BLANK: 109357 Matrix: Water
Associated Lab Samples: 2616036001, 2616036002, 2616036003, 2616036004, 2616036005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/15/19 17:12	

LABORATORY CONTROL SAMPLE: 109358

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109378 109379

Parameter	Units	2615967001 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	0.0025	0.0025	0.0025	0.0026	100	102	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616036

QC Batch: 24312
QC Batch Method: EPA 3005A
Associated Lab Samples: 2616036001

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 108896 Matrix: Water
Associated Lab Samples: 2616036001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/15/19 18:30	
Arsenic	mg/L	ND	0.0050	0.00057	03/15/19 18:30	
Barium	mg/L	ND	0.010	0.00078	03/15/19 18:30	
Beryllium	mg/L	ND	0.0030	0.000050	03/15/19 18:30	
Cadmium	mg/L	ND	0.0010	0.000093	03/15/19 18:30	
Chromium	mg/L	ND	0.010	0.0016	03/15/19 18:30	
Cobalt	mg/L	ND	0.010	0.00052	03/15/19 18:30	
Lead	mg/L	ND	0.0050	0.00027	03/15/19 18:30	
Lithium	mg/L	ND	0.050	0.00097	03/15/19 18:30	
Molybdenum	mg/L	ND	0.010	0.0019	03/15/19 18:30	
Selenium	mg/L	ND	0.010	0.0014	03/15/19 18:30	
Thallium	mg/L	ND	0.0010	0.00014	03/15/19 18:30	

LABORATORY CONTROL SAMPLE: 108897

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	110	80-120	
Arsenic	mg/L	0.1	0.10	102	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.11	107	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108898 108899

Parameter	Units	2616034004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	112	109	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20	
Barium	mg/L	0.029	0.1	0.1	0.13	0.13	106	102	75-125	3	20	
Beryllium	mg/L	0.0024J	0.1	0.1	0.098	0.098	95	95	75-125	0	20	
Cadmium	mg/L	0.0024	0.1	0.1	0.10	0.11	102	103	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616036

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108898 108899

Parameter	Units	2616034004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20	
Cobalt	mg/L	0.062	0.1	0.1	0.16	0.16	99	95	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20	
Lithium	mg/L	0.0053J	0.1	0.1	0.099	0.10	93	95	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	106	106	75-125	0	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	104	102	75-125	2	20	
Thallium	mg/L	0.00025J	0.1	0.1	0.098	0.098	98	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616036

QC Batch: 24384 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616036002, 2616036003, 2616036004, 2616036005

METHOD BLANK: 109374 Matrix: Water
Associated Lab Samples: 2616036002, 2616036003, 2616036004, 2616036005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/18/19 17:34	
Arsenic	mg/L	0.00071J	0.0050	0.00057	03/18/19 17:34	
Barium	mg/L	ND	0.010	0.00078	03/18/19 17:34	
Beryllium	mg/L	ND	0.0030	0.000050	03/18/19 17:34	
Cadmium	mg/L	ND	0.0010	0.000093	03/18/19 17:34	
Chromium	mg/L	ND	0.010	0.0016	03/18/19 17:34	
Cobalt	mg/L	ND	0.010	0.00052	03/18/19 17:34	
Lead	mg/L	ND	0.0050	0.00027	03/18/19 17:34	
Lithium	mg/L	ND	0.050	0.00097	03/18/19 17:34	
Molybdenum	mg/L	ND	0.010	0.0019	03/18/19 17:34	
Selenium	mg/L	ND	0.010	0.0014	03/18/19 17:34	
Thallium	mg/L	ND	0.0010	0.00014	03/18/19 17:34	

LABORATORY CONTROL SAMPLE: 109375

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	109	80-120	
Arsenic	mg/L	0.1	0.10	104	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.11	108	80-120	
Cadmium	mg/L	0.1	0.11	105	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	104	80-120	
Lithium	mg/L	0.1	0.11	107	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.10	105	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109376 109377

Parameter	Units	2616039003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	106	107	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.11	0.10	106	103	75-125	3	20	
Barium	mg/L	0.20	0.1	0.1	0.29	0.30	95	103	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.097	0.094	97	94	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616036

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109376 109377

Parameter	Units	2616039003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	104	103	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	3	20	
Lead	mg/L	ND	0.1	0.1	0.10	0.096	101	95	75-125	5	20	
Lithium	mg/L	0.011J	0.1	0.1	0.11	0.10	97	91	75-125	5	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	103	104	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	106	102	75-125	4	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616036

QC Batch: 24402 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616036001, 2616036002, 2616036003, 2616036004, 2616036005

METHOD BLANK: 109496 Matrix: Water
Associated Lab Samples: 2616036001, 2616036002, 2616036003, 2616036004, 2616036005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/15/19 20:10	

LABORATORY CONTROL SAMPLE: 109497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109498 109499

Parameter	Units	2616034001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.052J	10	10	10.4	10.4	103	103	90-110	0	15	

MATRIX SPIKE SAMPLE: 109500

Parameter	Units	2616034002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.082J	10	10.1	100	90-110	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616036

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616036

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616036001	**HGWA-1**	EPA 3005A	24312	EPA 6020B	24340
2616036002	**HGWA-2**	EPA 3005A	24384	EPA 6020B	24419
2616036003	**HGWA-3**	EPA 3005A	24384	EPA 6020B	24419
2616036004	**FB-01**	EPA 3005A	24384	EPA 6020B	24419
2616036005	**EB-01**	EPA 3005A	24384	EPA 6020B	24419
2616036001	**HGWA-1**	EPA 7470A	24380	EPA 7470A	24416
2616036002	**HGWA-2**	EPA 7470A	24380	EPA 7470A	24416
2616036003	**HGWA-3**	EPA 7470A	24380	EPA 7470A	24416
2616036004	**FB-01**	EPA 7470A	24380	EPA 7470A	24416
2616036005	**EB-01**	EPA 7470A	24380	EPA 7470A	24416
2616036001	**HGWA-1**	EPA 300.0	24402		
2616036002	**HGWA-2**	EPA 300.0	24402		
2616036003	**HGWA-3**	EPA 300.0	24402		
2616036004	**FB-01**	EPA 300.0	24402		
2616036005	**EB-01**	EPA 300.0	24402		

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 3/19/19

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: | State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWA-1	WT	G	3/12/19	1410	3/12/19	1431		4	1		3							Y	Y	Y		N	N	N
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

3/12/19 DM

WO#: 2616036

2616036

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Noelia Muskus	3/12/19	2205		3/12/19	2205
	STLouis/Geosyntec	3/13/19	943	Pace	3/13/19	0944
				MDalmaso	3/13/19	1400

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 3/12/19

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

2 of 3

Page : ~~1~~ WC 3/13/019

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 Fax:
Requested Due Date:	Standard TAT

Section B
Required Project Information:

Report To:	Joju Abraham / Lauren Petty
Copy To:	Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C
Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency	
State / Location	GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): App. IV Metals N; Fluoride by 300.0 N; Radium 226/228 N; Metals —

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228		Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWA-2	WT	G	03/12/19	10:29	03/12/19	10:45	[illegible]	4	1		3							Y	Y	Y		N	N	N
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

GW 03/12/19

WO#: 2616036
PM: BM Due Date: 03/20/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Grant Walter / Geosyntec	03/12/19	1950	Maelia Muskus	3/12/19	1950	2.5	Y	Y	Y
	Maelia Muskus	3/12/19	2205	[illegible] Lao	3/12/19	2205				
	[illegible] Law / Geosyntec	3/13/19	943	[illegible] Pace	3.13.19	0941				
				[illegible]	3/13/19	1400				
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: [signature] DATE Signed: 03/12/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

3 of 3

Page : 1 of 1

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	STANDARD TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: —

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Y/N	N	N	N	—		
1	HBWA-3	WT	G	03/12/19	1430	03/12/19	1630	25	4	1		3							Y	Y	Y	N	N	N
2	FB-01	WT	G	03/11/19	1915	03/11/19	1915	25	4	1		3							Y	Y	Y	N	N	N
3	EB-01	WT	G	3/12/19	1950	3/12/19	1950	25	4	1		3							Y	Y	Y	N	N	N
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

03/12/19

BAT

WO#: 2616036

PM: BM Due Date: 03/20/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		3/12/19	1950	Marlia Mathews	3/12/19	1950	
	Marlia Mathews	3/12/19	2205	[illegible]	3/12/19	2205	
	[illegible] Geosyntec	3/13/19	943	Pace	3/13/19	0944	
				MZalman	3/13/19	1400	2.5 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: BENJAMIN HOLT-TICKHILL

SIGNATURE of SAMPLER: [signature] DATE Signed: 03/12/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.5	Y	Y	Y

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project # _____

WO#: 2616036

PM: BM Due Date: 03/20/19

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 2.5 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: 3/13/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 29, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616037

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616037

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616037

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616037001	**HGWA-1**	Water	03/12/19 14:31	03/13/19 14:00
2616037002	**HGWA-2**	Water	03/12/19 10:45	03/13/19 14:00
2616037003	**HGWA-3**	Water	03/12/19 10:00	03/13/19 14:00
2616037004	**FB-01**	Water	03/12/19 19:15	03/13/19 14:00
2616037005	**EB-01**	Water	03/12/19 19:50	03/13/19 14:00

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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616037

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616037001	**HGWA-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616037002	**HGWA-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616037003	**HGWA-3**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616037004	**FB-01**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616037005	**EB-01**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

Sample: HGWA-1 **Lab ID: 2616037001** Collected: 03/12/19 14:31 Received: 03/13/19 14:00 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	**0.263 ± 0.240 (0.452) C:82% T:NA**	pCi/L	03/25/19 08:34	13982-63-3	
Radium-228	EPA 9320	**0.0637 ± 0.372 (0.848) C:72% T:83%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.327 ± 0.612 (1.30)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

Sample: HGWA-2 **Lab ID: 2616037002** Collected: 03/12/19 10:45 Received: 03/13/19 14:00 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	**0.228 ± 0.190 (0.332) C:94% T:NA**	pCi/L	03/25/19 08:34	13982-63-3	
Radium-228	EPA 9320	**0.226 ± 0.318 (0.681) C:74% T:89%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.454 ± 0.508 (1.01)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

Sample: HGWA-3 **Lab ID: 2616037003** Collected: 03/12/19 10:00 Received: 03/13/19 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.387 ± 0.232 (0.327) C:90% T:NA**	pCi/L	03/25/19 08:33	13982-63-3	
Radium-228	EPA 9320	**0.626 ± 0.376 (0.699) C:78% T:84%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**1.01 ± 0.608 (1.03)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

Sample: FB-01 **Lab ID: 2616037004** Collected: 03/12/19 19:15 Received: 03/13/19 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.248 ± 0.204 (0.334) C:79% T:NA**	pCi/L	03/25/19 08:34	13982-63-3	
Radium-228	EPA 9320	**0.111 ± 0.352 (0.792) C:76% T:82%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.359 ± 0.556 (1.13)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

Sample: EB-01 **Lab ID: 2616037005** Collected: 03/12/19 19:50 Received: 03/13/19 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.160 ± 0.197 (0.405) C:82% T:NA**	pCi/L	03/25/19 08:31	13982-63-3	
Radium-228	EPA 9320	**0.386 ± 0.383 (0.790) C:76% T:78%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.546 ± 0.580 (1.20)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

QC Batch: 334698 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616037001, 2616037002, 2616037003, 2616037004, 2616037005

METHOD BLANK: 1628718 Matrix: Water
Associated Lab Samples: 2616037001, 2616037002, 2616037003, 2616037004, 2616037005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.482 ± 0.254 (0.327) C:96% T:NA	pCi/L	03/25/19 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616037

QC Batch: 334688 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616037001, 2616037002, 2616037003, 2616037004, 2616037005

METHOD BLANK: 1628693 Matrix: Water
Associated Lab Samples: 2616037001, 2616037002, 2616037003, 2616037004, 2616037005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.978 ± 0.447 (0.755) C:76% T:82%	pCi/L	03/26/19 12:53	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616037

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616037

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616037001	**HGWA-1**	EPA 9315	334698		
2616037002	**HGWA-2**	EPA 9315	334698		
2616037003	**HGWA-3**	EPA 9315	334698		
2616037004	**FB-01**	EPA 9315	334698		
2616037005	**EB-01**	EPA 9315	334698		
2616037001	**HGWA-1**	EPA 9320	334688		
2616037002	**HGWA-2**	EPA 9320	334688		
2616037003	**HGWA-3**	EPA 9320	334688		
2616037004	**FB-01**	EPA 9320	334688		
2616037005	**EB-01**	EPA 9320	334688		
2616037001	**HGWA-1**	Total Radium Calculation	335714		
2616037002	**HGWA-2**	Total Radium Calculation	335714		
2616037003	**HGWA-3**	Total Radium Calculation	335714		
2616037004	**FB-01**	Total Radium Calculation	335714		
2616037005	**EB-01**	Total Radium Calculation	335714		

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 Fax:
Requested Due Date: Standard TAT

Section B
Required Project Information:
Report To: Joju Abraham / Lauren Petty
Copy To: Geosyntec
Purchase Order #: SCS10348606
Project Name: Plant Hammond
Project #:

Section C
Invoice Information:
Attention: scsinvoices@southernco.com
Company Name:
Address:
Pace Quote:
Pace Project Manager: betsy.mcdaniel@pacelabs.com,
Pace Profile #: 327.4 (AP) or 328.5 (Huff)

Regulatory Agency: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWA-1	WT	G	3/12/19	1410	3/12/19	1431		4	1		3						Y	Y	Y		N	N	N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

3/12/19

WO#: 2616037

2616037

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Noelia Muskus	3/12/19	2205		3/12/19	2205
	GTS Geosyntec	3/13/19	943	Pace	3/13/19	0944
				MZalmon	3/13/19	1400

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus

DATE Signed: 3/12/19

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

2 of 3

Page : ~~1~~ WC 3/13/019 1

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency:

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): App. IV Metals N, Fluoride by 300.0 N, Radium 226/228 N; Metals (As, B, Co, Mo) / Sulfate by 300.0 —

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWA-2	WT	G	[illegible]	10:29	[illegible]	10:45	[illegible]	4	1		3							Y	Y	Y	N	N	N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 03/12/19

WO#: 2616037
PM: BM Due Date: 04/10/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Grant Walter / Geosyntec	03/12/19	1950	Maelia Musbus	3/12/19	1950	2.5	Y	Y	Y
	Maelia Musbus	3/12/19	2205	[illegible]	3/12/19	2205				
	[illegible] / Geosyntec	3/13/19	943	[illegible] Pace	3.13.19	0941				
				M Dalman	3/13/19	1400				
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: [signature] DATE Signed: 03/12/19

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

3 of 3

Page: ~~1~~ of ~~1~~ (WC 5/13/19)

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 Fax:
- Requested Due Date: STANDARD TAT

Section B — Required Project Information:

- Report To: Joju Abraham / Lauren Petty
- Copy To: Geosyntec
- Purchase Order #: SCS10348606
- Project Name: Plant Hammond
- Project #:

Section C — Invoice Information:

- Attention: scsinvoices@southernco.com
- Company Name:
- Address:
- Pace Quote:
- Pace Project Manager: betsy.mcdaniel@pacelabs.com,
- Pace Profile #: 327.4 (AP) or 328.5 (Huff)

Regulatory Agency:

State / Location: GA

Matrix codes: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): App. IV Metals N; Fluoride by 300.0 N; Radium 226/228 N; Metals (As, B, Co, Mo) —; Sulfate by 300.0 —

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWA-3	WT	G	3/12/19	[illegible]	3/12/19	[illegible]	25	4	1		3						Y	Y	Y	H	H	H
2	FB-01	WT	G	03/11/19	1915	03/11/19	1915	25	4	1		7						Y	Y	Y	H	H	H
3	EB-01	WT	G	3/12/19	1950	3/12/19	1950	25	4	1		3						Y	Y	Y	H	H	H
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

BYT 03/12/19

WO#: 2616037

PM: BM Due Date: 04/10/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED 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)
	[signature]	3/12/19	1930	Marlia Murphy	3/12/19	1950				
	Marlia Murphy	3/12/19	2205	[signature]	3/12/19	2205				
	[signature] / Geosyntec	3/13/19	943	Pace	3.13.19	0944				
				M Dalman	3/13/19	1400	2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Benjamin Heath-Tickner

SIGNATURE of SAMPLER: [signature]

DATE Signed: 03/12/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO# : 2616037

PM: BM Due Date: 04/10/19

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 2.5 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: 3/13/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 20, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616042

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616042

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616042

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616042001	**MW-28D**	Water	03/12/19 17:25	03/13/19 14:00
2616042002	**HGWC-8**	Water	03/12/19 16:27	03/13/19 14:00
2616042003	**MW-29**	Water	03/12/19 18:23	03/13/19 14:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616042

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616042001	**MW-28D**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616042002	**HGWC-8**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616042003	**MW-29**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616042

Sample: MW-28D **Lab ID: 2616042001** Collected: 03/12/19 17:25 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 18:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 18:54	7440-38-2	
Barium	**0.82**	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 18:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 18:54	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 18:54	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 18:54	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 18:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 18:54	7439-92-1	
Lithium	**0.011J**	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 18:54	7439-93-2	
Molybdenum	**0.013**	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 18:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 18:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 18:54	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:12	03/15/19 14:56	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.24J**	mg/L	0.30	0.029	1		03/19/19 00:09	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616042

Sample: HGWC-8 **Lab ID: 2616042002** Collected: 03/12/19 16:27 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 19:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 19:00	7440-38-2	
Barium	**0.062**	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 19:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 19:00	7440-41-7	
Cadmium	**0.00020J**	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 19:00	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 19:00	7440-47-3	
Cobalt	**0.0020J**	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 19:00	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 19:00	7439-92-1	
Lithium	**0.0025J**	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 19:00	7439-93-2	
Molybdenum	**0.50**	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 19:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 19:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:12	03/15/19 15:13	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.58**	mg/L	0.30	0.029	1		03/19/19 00:32	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616042

Sample: MW-29 **Lab ID: 2616042003** Collected: 03/12/19 18:23 Received: 03/13/19 14:00 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	03/15/19 12:41	03/18/19 19:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/15/19 12:41	03/18/19 19:06	7440-38-2	
Barium	**0.089**	mg/L	0.010	0.00078	1	03/15/19 12:41	03/18/19 19:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/15/19 12:41	03/18/19 19:06	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/15/19 12:41	03/18/19 19:06	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/15/19 12:41	03/18/19 19:06	7440-47-3	
Cobalt	**0.00057J**	mg/L	0.010	0.00052	1	03/15/19 12:41	03/18/19 19:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/15/19 12:41	03/18/19 19:06	7439-92-1	
Lithium	**0.0024J**	mg/L	0.050	0.00097	1	03/15/19 12:41	03/18/19 19:06	7439-93-2	
Molybdenum	**0.0038J**	mg/L	0.010	0.0019	1	03/15/19 12:41	03/18/19 19:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/15/19 12:41	03/18/19 19:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/15/19 12:41	03/18/19 19:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/15/19 12:12	03/15/19 15:15	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.070J**	mg/L	0.30	0.029	1		03/19/19 00:55	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616042

QC Batch: 24399 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2616042001, 2616042002, 2616042003

METHOD BLANK: 109482 Matrix: Water
Associated Lab Samples: 2616042001, 2616042002, 2616042003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/15/19 14:51	

LABORATORY CONTROL SAMPLE: 109483

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0029	117	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109484 109485

Parameter	Units	2616042001 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	0.0025	0.0025	0.0026	0.0025	105	101	75-125	4	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616042

QC Batch: 24384 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616042001, 2616042002, 2616042003

METHOD BLANK: 109374 Matrix: Water
Associated Lab Samples: 2616042001, 2616042002, 2616042003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/18/19 17:34	
Arsenic	mg/L	0.00071J	0.0050	0.00057	03/18/19 17:34	
Barium	mg/L	ND	0.010	0.00078	03/18/19 17:34	
Beryllium	mg/L	ND	0.0030	0.000050	03/18/19 17:34	
Cadmium	mg/L	ND	0.0010	0.000093	03/18/19 17:34	
Chromium	mg/L	ND	0.010	0.0016	03/18/19 17:34	
Cobalt	mg/L	ND	0.010	0.00052	03/18/19 17:34	
Lead	mg/L	ND	0.0050	0.00027	03/18/19 17:34	
Lithium	mg/L	ND	0.050	0.00097	03/18/19 17:34	
Molybdenum	mg/L	ND	0.010	0.0019	03/18/19 17:34	
Selenium	mg/L	ND	0.010	0.0014	03/18/19 17:34	
Thallium	mg/L	ND	0.0010	0.00014	03/18/19 17:34	

LABORATORY CONTROL SAMPLE: 109375

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	109	80-120	
Arsenic	mg/L	0.1	0.10	104	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.11	108	80-120	
Cadmium	mg/L	0.1	0.11	105	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	104	80-120	
Lithium	mg/L	0.1	0.11	107	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.10	105	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109376 109377

Parameter	Units	2616039003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	106	107	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.11	0.10	106	103	75-125	3	20	
Barium	mg/L	0.20	0.1	0.1	0.29	0.30	95	103	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.097	0.094	97	94	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616042

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109376 109377

Parameter	Units	2616039003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	104	103	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	3	20	
Lead	mg/L	ND	0.1	0.1	0.10	0.096	101	95	75-125	5	20	
Lithium	mg/L	0.011J	0.1	0.1	0.11	0.10	97	91	75-125	5	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	103	104	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	106	102	75-125	4	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616042

QC Batch: 24522 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616042001, 2616042002, 2616042003

METHOD BLANK: 110051 Matrix: Water
Associated Lab Samples: 2616042001, 2616042002, 2616042003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/18/19 21:29	

LABORATORY CONTROL SAMPLE: 110052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 110053 110054

Parameter	Units	2616039001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.035J	10	10	10.2	10.3	102	102	90-110	0	15	

MATRIX SPIKE SAMPLE: 110055

Parameter	Units	2616039002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.079J	10	10.3	103	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616042

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616042

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616042001	**MW-28D**	EPA 3005A	24384	EPA 6020B	24419
2616042002	**HGWC-8**	EPA 3005A	24384	EPA 6020B	24419
2616042003	**MW-29**	EPA 3005A	24384	EPA 6020B	24419
2616042001	**MW-28D**	EPA 7470A	24399	EPA 7470A	24404
2616042002	**HGWC-8**	EPA 7470A	24399	EPA 7470A	24404
2616042003	**MW-29**	EPA 7470A	24399	EPA 7470A	24404
2616042001	**MW-28D**	EPA 300.0	24522		
2616042002	**HGWC-8**	EPA 300.0	24522		
2616042003	**MW-29**	EPA 300.0	24522		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1 of 3

Page : 1 of 1 (struck) 3/13/19

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	STANDARD TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency	
State / Location	GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): App. IV Metals N; Fluoride by 300.0 N; Radium 226/228 N; Metals (As, B, Co, Mo) —

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	MW-28D (struck) ac 3/13/19	WT	G	3/12/19	1725	3/12/19	1725	[illegible]	4	1		3							Y	Y	Y	N/A (ac 3/13/19)		N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

BMT 03/12/19

WO#: 2616042

2616042

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature]	3/12/19	1950	[signature]	3/12/19	1950				
	[signature]	3/12/19	2205	[signature]	3/12/19	2205				
	[signature] / Geosyntec	3/13/19	943	[signature] Pace	3/13/19	0944				
				[signature]	3/13/19	1400	2.5	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Benjamin Ugin Tickate

SIGNATURE of SAMPLER: [signature] DATE Signed: 03/12/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

2 of 3

Page: 1 WI 3/13/19

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: GA

State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
																		Y/N	N	N	N	—		
1	HGWC-8	WT	G	03/12	16:06	03/12	16:27	18.5	4	1		3							Y	Y	Y	N	N		N
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

GW 03/12/19

WO#: 2616042

PM: BM Due Date: 03/20/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Grant Walter/Geosyntec	03/12/19	1950	Monica Mathews	3/12/19	1950
	Monica Mathews	3/12/19	2205	GETS Law	3/12/19	2205
	GETS Law/Geosyntec	3/13/19	943	Pace	3.13.19	0944
				MDahman	3/13/19	1400

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: Grant Walter DATE Signed: 03/12/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

3 of 3

Page: 1 of 1 — 3/15/19

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham / Lauren Petty
Copy To:	Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: —

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	MW-29	WT	G	3/12/19	1800	3/12/19	1822	4.5	4	1		3							Y	Y	Y	Y	N	N	N
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

NM

3/12/19

WO#: 2616042
PM: BM Due Date: 03/20/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Noelia Muskus	3/12/19	2205	G Blaw	3/12/19	2205
	G Blaw / Geosyntec	3/13/19	943	Purce	3.13.19	0944
				M Dalman	3/13/19	1402

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 3/12/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2616042

PM: BM Due Date: 03/20/19

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 2.5 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: 3/13/19 MR

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 29, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616043

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616043

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616043

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616043001	**MW-28D**	Water	03/12/19 17:25	03/13/19 14:00
2616043002	**HGWC-8**	Water	03/12/19 16:27	03/13/19 14:00
2616043003	**MW-29**	Water	03/12/19 18:23	03/13/19 14:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616043

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616043001	**MW-28D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616043002	**HGWC-8**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616043003	**MW-29**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616043

Sample: MW-28D **Lab ID: 2616043001** Collected: 03/12/19 17:25 Received: 03/13/19 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.395 ± 0.214 (0.242) C:95% T:NA**	pCi/L	03/25/19 10:08	13982-63-3	
Radium-228	EPA 9320	**0.531 ± 0.380 (0.742) C:73% T:88%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.926 ± 0.594 (0.984)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616043

Sample: HGWC-8 **Lab ID: 2616043002** Collected: 03/12/19 16:27 Received: 03/13/19 14:00 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	**0.187 ± 0.174 (0.291) C:76% T:NA**	pCi/L	03/25/19 08:32	13982-63-3	
Radium-228	EPA 9320	**0.357 ± 0.366 (0.760) C:75% T:87%**	pCi/L	03/26/19 12:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.544 ± 0.540 (1.05)**	pCi/L	03/27/19 11:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616043

Sample: MW-29 **Lab ID: 2616043003** Collected: 03/12/19 18:23 Received: 03/13/19 14:00 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	**0.188 ± 0.159 (0.241) C:91% T:NA**	pCi/L	03/25/19 10:08	13982-63-3	
Radium-228	EPA 9320	**1.18 ± 0.482 (0.767) C:74% T:90%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**1.37 ± 0.641 (1.01)**	pCi/L	03/28/19 15:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616043

QC Batch: 334698 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616043001, 2616043002, 2616043003

METHOD BLANK: 1628718 Matrix: Water
Associated Lab Samples: 2616043001, 2616043002, 2616043003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.482 ± 0.254 (0.327) C:96% T:NA	pCi/L	03/25/19 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616043

QC Batch: 334688 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616043001, 2616043002, 2616043003

METHOD BLANK: 1628693 Matrix: Water
Associated Lab Samples: 2616043001, 2616043002, 2616043003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.978 ± 0.447 (0.755) C:76% T:82%	pCi/L	03/26/19 12:53	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616043

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616043

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616043001	**MW-28D**	EPA 9315	334698		
2616043002	**HGWC-8**	EPA 9315	334698		
2616043003	**MW-29**	EPA 9315	334698		
2616043001	**MW-28D**	EPA 9320	334688		
2616043002	**HGWC-8**	EPA 9320	334688		
2616043003	**MW-29**	EPA 9320	334688		
2616043001	**MW-28D**	Total Radium Calculation	335714		
2616043002	**HGWC-8**	Total Radium Calculation	335714		
2616043003	**MW-29**	Total Radium Calculation	335989		

![Pace Analytical]

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1 of 3

Page : ~~1~~ Of ~~1~~ (wr 3/13/19)

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
Fax:	
Requested Due Date:	STANDARD TAT

Section B — Required Project Information:

Report To:	Joju Abraham / Lauren Petty
Copy To:	Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency	
State / Location	GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): App. IV Metals N, Fluoride by 300.0 N, Radium 226/228 N, Sulfate by 300.0 —

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	MW-28D	WT	G	3/11/19	1125	3/11/19	1125	[illegible]	4	1		3							Y	Y	Y	NM	N (3/13/19)	N
2	ar 3/13/19																							
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

BMT 03/12/19

WO#: 2616043
2616043

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature]	3/12/19	1950	Madison Morton	3/12/19	1950				
	Madison Morton	3/12/19	2205	[signature]	3/12/19	2205				
	[signature] / Geosyntec	3/13/19	943	[signature] Pace	3/13/19	0944				
				M Lalman	3/13/19	1400	2.5	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Benjamin Ugjin Tickate

SIGNATURE of SAMPLER: [signature]

DATE Signed: 03/12/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

2 of 3

Page: ~~1~~ [initials] 3/13/19

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 Fax:
Requested Due Date: Standard TAT

Section B — Required Project Information:
Report To: Joju Abraham / Lauren Petty
Copy To: Geosyntec
Purchase Order #: SCS10348606
Project Name: Plant Hammond
Project #:

Section C — Invoice Information:
Attention: scsinvoices@southernco.com
Company Name:
Address:
Pace Quote:
Pace Project Manager: betsy.mcdaniel@pacelabs.com,
Pace Profile #: 327.4 (AP) or 328.5 (Huff)

Regulatory Agency:
State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): App. IV Metals N; Fluoride by 300.0 N; Radium 226/228 N; Metals (As, B, Co, Mo) —; Sulfate by 300.0 —

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWC-8	WT	G	03/12	16:06	03/12	16:27	18.5	4	1		3							Y	Y	Y	N	N	N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 03/12/19

WO#: 2616043
PM: BM Due Date: 04/10/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Grant Walter / Geosyntec	03/12/19	1950	Moulia Murkes	3/12/19	1950
	Moulia Murkes	3/12/19	2205	GTB Law	3/12/19	2205
	GTB Law / Geosyntec	3/13/19	943	[signature] Pace	3.13.19	0944
				[signature]	3/13/19	1400

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Grant Walter
SIGNATURE of SAMPLER: [signature]
DATE Signed: 03/12/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page : 1 of 1 — 3/13/19

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N				
1	HG MW-29	WT	G	3/12/19	1000	3/12/19	1023	15	4	1		3						Y	Y	Y		N	N	N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 3/12/19

WO#: 2616043

PM: BM **Due Date: 04/10/19**

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Noelia Muskus	3/12/19	2205	[illegible]	3/12/19	2205
	[illegible] / Geosyntec	3/13/19	943	[illegible] Pace	3.13.19	0944
				M Rahman	3/13/19	1402

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.3	X	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 3/12/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616043

PM: BM Due Date: 04/10/19

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 2.5 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/13/19 MR

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 21, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616120

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 14, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616120

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616120

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616120001	**MW-7**	Water	03/13/19 17:46	03/14/19 12:45
2616120002	**MW-26D**	Water	03/13/19 13:36	03/14/19 12:45
2616120003	**HGWC-9**	Water	03/13/19 11:46	03/14/19 12:45
2616120004	**MW-27D**	Water	03/13/19 09:24	03/14/19 12:45
2616120005	**MW-6**	Water	03/13/19 11:06	03/14/19 12:45
2616120006	**HGWC-10**	Water	03/13/19 12:10	03/14/19 12:45
2616120007	**MW-24D**	Water	03/13/19 14:48	03/14/19 12:45
2616120008	**HGWC-13**	Water	03/13/19 15:40	03/14/19 12:45
2616120009	**FD-1**	Water	03/13/19 00:00	03/14/19 12:45
2616120010	**MW-20**	Water	03/13/19 10:53	03/14/19 12:45
2616120011	**MW-5**	Water	03/13/19 12:33	03/14/19 12:45
2616120012	**HGWC-7**	Water	03/13/19 16:03	03/14/19 12:45
2616120013	**HGWC-11**	Water	03/13/19 17:34	03/14/19 12:45

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616120

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616120001	**MW-7**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120002	**MW-26D**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120003	**HGWC-9**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120004	**MW-27D**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120005	**MW-6**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120006	**HGWC-10**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120007	**MW-24D**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120008	**HGWC-13**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120009	**FD-1**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120010	**MW-20**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120011	**MW-5**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120012	**HGWC-7**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2616120013	**HGWC-11**	EPA 6020B	CSW	12

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616120

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-7 **Lab ID: 2616120001** Collected: 03/13/19 17:46 Received: 03/14/19 12:45 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	**0.00086J**	mg/L	0.0030	0.00078	1	03/18/19 13:34	03/20/19 14:32	7440-36-0	B
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 14:32	7440-38-2	
Barium	**0.063**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 14:32	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 14:32	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 14:32	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 14:32	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 14:32	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 14:32	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 14:32	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 14:32	7439-98-7	
Selenium	**0.0016J**	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 14:32	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 14:32	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 14:44	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.069J**	mg/L	0.30	0.029	1		03/19/19 01:18	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-26D **Lab ID: 2616120002** Collected: 03/13/19 13:36 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 14:38	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 14:38	7440-38-2	
Barium	**0.099**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 14:38	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 14:38	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 14:38	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 14:38	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 14:38	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 14:38	7439-92-1	
Lithium	**0.0033J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 14:38	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 14:38	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 14:38	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 14:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/20/19 09:33	03/20/19 13:26	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.052J**	mg/L	0.30	0.029	1		03/19/19 01:40	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: HGWC-9 **Lab ID: 2616120003** Collected: 03/13/19 11:46 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 14:44	7440-36-0	
Arsenic	**0.00075J**	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 14:44	7440-38-2	
Barium	**0.10**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 14:44	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 14:44	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 14:44	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 14:44	7440-47-3	
Cobalt	**0.00065J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 14:44	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 14:44	7439-92-1	
Lithium	**0.0040J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 14:44	7439-93-2	
Molybdenum	**0.028**	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 14:44	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 14:44	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 14:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 14:53	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.14J**	mg/L	0.30	0.029	1		03/19/19 03:35	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-27D **Lab ID: 2616120004** Collected: 03/13/19 09:24 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 14:49	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 14:49	7440-38-2	
Barium	**1.5**	mg/L	0.10	0.0078	10	03/18/19 13:34	03/21/19 13:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 14:49	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 14:49	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 14:49	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 14:49	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 14:49	7439-92-1	
Lithium	**0.0097J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 14:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 14:49	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 14:49	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 14:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 14:55	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.28J**	mg/L	0.30	0.029	1		03/19/19 03:58	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-6 **Lab ID: 2616120005** Collected: 03/13/19 11:06 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 14:55	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 14:55	7440-38-2	
Barium	**0.10**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 14:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 14:55	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 14:55	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 14:55	7440-47-3	
Cobalt	**0.00055J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 14:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 14:55	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 14:55	7439-93-2	
Molybdenum	**0.0021J**	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 14:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 14:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 14:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 14:58	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.19J**	mg/L	0.30	0.029	1		03/19/19 04:43	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: HGWC-10 **Lab ID: 2616120006** Collected: 03/13/19 12:10 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 15:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 15:01	7440-38-2	
Barium	**0.044**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 15:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 15:01	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 15:01	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 15:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 15:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 15:01	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 15:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 15:01	7439-98-7	
Selenium	**0.0015J**	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 15:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 15:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:00	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.17J**	mg/L	0.30	0.029	1		03/19/19 05:06	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-24D **Lab ID: 2616120007** Collected: 03/13/19 14:48 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 15:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 15:07	7440-38-2	
Barium	**0.053**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 15:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 15:07	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 15:07	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 15:07	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 15:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 15:07	7439-92-1	
Lithium	**0.0029J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 15:07	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 15:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 15:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 15:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:07	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.074J**	mg/L	0.30	0.029	1		03/19/19 05:29	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: HGWC-13 **Lab ID: 2616120008** Collected: 03/13/19 15:40 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 15:12	7440-36-0	
Arsenic	**0.42**	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 15:12	7440-38-2	
Barium	**0.10**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 15:12	7440-39-3	
Beryllium	**0.000062J**	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 15:12	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 15:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 15:12	7440-47-3	
Cobalt	**0.0022J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 15:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 15:12	7439-92-1	
Lithium	**0.029J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 15:12	7439-93-2	
Molybdenum	**0.033**	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 15:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 15:12	7782-49-2	
Thallium	**0.00039J**	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 15:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:10	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.78**	mg/L	0.30	0.029	1		03/19/19 05:52	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: FD-1 **Lab ID: 2616120009** Collected: 03/13/19 00:00 Received: 03/14/19 12:45 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	**0.00088J**	mg/L	0.0030	0.00078	1	03/18/19 13:34	03/20/19 15:50	7440-36-0	B
Arsenic	**0.42**	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 15:50	7440-38-2	
Barium	**0.099**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 15:50	7440-39-3	
Beryllium	**0.000089J**	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 15:50	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 15:50	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 15:50	7440-47-3	
Cobalt	**0.0023J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 15:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 15:50	7439-92-1	
Lithium	**0.029J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 15:50	7439-93-2	
Molybdenum	**0.033**	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 15:50	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 15:50	7782-49-2	
Thallium	**0.00043J**	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 15:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:12	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.81**	mg/L	0.30	0.029	1		03/19/19 06:15	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-20 **Lab ID: 2616120010** Collected: 03/13/19 10:53 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 15:55	7440-36-0	
Arsenic	**0.0023J**	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 15:55	7440-38-2	
Barium	**0.087**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 15:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 15:55	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 15:55	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 15:55	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 15:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 15:55	7439-92-1	
Lithium	**0.0016J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 15:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 15:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 15:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 15:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:14	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.072J**	mg/L	0.30	0.029	1		03/19/19 06:38	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: MW-5 **Lab ID: 2616120011** Collected: 03/13/19 12:33 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 16:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 16:01	7440-38-2	
Barium	**0.056**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 16:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 16:01	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 16:01	7440-43-9	
Chromium	**0.0030J**	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 16:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 16:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 16:01	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 16:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 16:01	7439-98-7	
Selenium	**0.0033J**	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 16:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 16:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:17	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.10J**	mg/L	0.30	0.029	1		03/19/19 07:01	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: HGWC-7 **Lab ID: 2616120012** Collected: 03/13/19 16:03 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 16:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 16:07	7440-38-2	
Barium	**0.083**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 16:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 16:07	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 16:07	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 16:07	7440-47-3	
Cobalt	**0.00067J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 16:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 16:07	7439-92-1	
Lithium	**0.0024J**	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 16:07	7439-93-2	
Molybdenum	**0.040**	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 16:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 16:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 16:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:19	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.12J**	mg/L	0.30	0.029	1		03/19/19 08:55	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616120

Sample: HGWC-11 **Lab ID: 2616120013** Collected: 03/13/19 17:34 Received: 03/14/19 12:45 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	03/18/19 13:34	03/20/19 16:13	7440-36-0	
Arsenic	**0.0024J**	mg/L	0.0050	0.00057	1	03/18/19 13:34	03/20/19 16:13	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00078	1	03/18/19 13:34	03/20/19 16:13	7440-39-3	
Beryllium	**0.00010J**	mg/L	0.0030	0.000050	1	03/18/19 13:34	03/20/19 16:13	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/18/19 13:34	03/20/19 16:13	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/18/19 13:34	03/20/19 16:13	7440-47-3	
Cobalt	**0.00098J**	mg/L	0.010	0.00052	1	03/18/19 13:34	03/20/19 16:13	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/18/19 13:34	03/20/19 16:13	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/18/19 13:34	03/20/19 16:13	7439-93-2	
Molybdenum	**0.012**	mg/L	0.010	0.0019	1	03/18/19 13:34	03/20/19 16:13	7439-98-7	
Selenium	**0.023**	mg/L	0.010	0.0014	1	03/18/19 13:34	03/20/19 16:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/18/19 13:34	03/20/19 16:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:21	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.51**	mg/L	0.30	0.029	1		03/19/19 09:18	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616120

QC Batch: 24464 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2616120001, 2616120003, 2616120004, 2616120005, 2616120006, 2616120007, 2616120008, 2616120009, 2616120010, 2616120011, 2616120012, 2616120013

METHOD BLANK: 109864 Matrix: Water
Associated Lab Samples: 2616120001, 2616120003, 2616120004, 2616120005, 2616120006, 2616120007, 2616120008, 2616120009, 2616120010, 2616120011, 2616120012, 2616120013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/19/19 14:39	

LABORATORY CONTROL SAMPLE: 109865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109866 109867

Parameter	Units	2616120001 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	0.0025	0.0025	0.0025	0.0025	101	102	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616120

QC Batch: 24639 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2616120002

METHOD BLANK: 110677 Matrix: Water
Associated Lab Samples: 2616120002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/20/19 13:07	

LABORATORY CONTROL SAMPLE: 110678

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 110679 110680

Parameter	Units	2616179001 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	0.0025	0.0025	0.0025	0.0025	99	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616120

QC Batch: 24489 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616120001, 2616120002, 2616120003, 2616120004, 2616120005, 2616120006, 2616120007, 2616120008, 2616120009, 2616120010, 2616120011, 2616120012, 2616120013

METHOD BLANK: 109939 Matrix: Water
Associated Lab Samples: 2616120001, 2616120002, 2616120003, 2616120004, 2616120005, 2616120006, 2616120007, 2616120008, 2616120009, 2616120010, 2616120011, 2616120012, 2616120013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.0014J	0.0030	0.00078	03/20/19 14:21	
Arsenic	mg/L	ND	0.0050	0.00057	03/20/19 14:21	
Barium	mg/L	ND	0.010	0.00078	03/20/19 14:21	
Beryllium	mg/L	ND	0.0030	0.000050	03/20/19 14:21	
Cadmium	mg/L	ND	0.0010	0.000093	03/20/19 14:21	
Chromium	mg/L	ND	0.010	0.0016	03/20/19 14:21	
Cobalt	mg/L	ND	0.010	0.00052	03/20/19 14:21	
Lead	mg/L	ND	0.0050	0.00027	03/20/19 14:21	
Lithium	mg/L	ND	0.050	0.00097	03/20/19 14:21	
Molybdenum	mg/L	ND	0.010	0.0019	03/20/19 14:21	
Selenium	mg/L	ND	0.010	0.0014	03/20/19 14:21	
Thallium	mg/L	ND	0.0010	0.00014	03/20/19 14:21	

LABORATORY CONTROL SAMPLE: 109940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	102	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.10	104	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109941 109942

Parameter	Units	2616120008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	105	105	75-125	0	20	
Arsenic	mg/L	0.42	0.1	0.1	0.51	0.53	99	113	75-125	3	20	
Barium	mg/L	0.10	0.1	0.1	0.18	0.18	76	75	75-125	1	20	
Beryllium	mg/L	0.000062J	0.1	0.1	0.094	0.095	94	95	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109941 109942

Parameter	Units	2616120008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20	
Chromium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20	
Cobalt	mg/L	0.0022J	0.1	0.1	0.098	0.099	96	96	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.093	0.096	93	96	75-125	3	20	
Lithium	mg/L	0.029J	0.1	0.1	0.12	0.12	92	94	75-125	2	20	
Molybdenum	mg/L	0.033	0.1	0.1	0.13	0.13	96	99	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.099	0.10	99	104	75-125	6	20	
Thallium	mg/L	0.00039J	0.1	0.1	0.095	0.096	94	96	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616120

QC Batch: 24522 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616120001, 2616120002, 2616120003, 2616120004, 2616120005, 2616120006, 2616120007, 2616120008, 2616120009, 2616120010, 2616120011, 2616120012, 2616120013

METHOD BLANK: 110051 Matrix: Water
Associated Lab Samples: 2616120001, 2616120002, 2616120003, 2616120004, 2616120005, 2616120006, 2616120007, 2616120008, 2616120009, 2616120010, 2616120011, 2616120012, 2616120013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/18/19 21:29	

LABORATORY CONTROL SAMPLE: 110052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 110053 110054

Parameter	Units	2616039001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.035J	10	10	10.2	10.3	102	102	90-110	0	15	

MATRIX SPIKE SAMPLE: 110055

Parameter	Units	2616039002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.079J	10	10.3	103	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616120

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616120

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616120001	**MW-7**	EPA 3005A	24489	EPA 6020B	24530
2616120002	**MW-26D**	EPA 3005A	24489	EPA 6020B	24530
2616120003	**HGWC-9**	EPA 3005A	24489	EPA 6020B	24530
2616120004	**MW-27D**	EPA 3005A	24489	EPA 6020B	24530
2616120005	**MW-6**	EPA 3005A	24489	EPA 6020B	24530
2616120006	**HGWC-10**	EPA 3005A	24489	EPA 6020B	24530
2616120007	**MW-24D**	EPA 3005A	24489	EPA 6020B	24530
2616120008	**HGWC-13**	EPA 3005A	24489	EPA 6020B	24530
2616120009	**FD-1**	EPA 3005A	24489	EPA 6020B	24530
2616120010	**MW-20**	EPA 3005A	24489	EPA 6020B	24530
2616120011	**MW-5**	EPA 3005A	24489	EPA 6020B	24530
2616120012	**HGWC-7**	EPA 3005A	24489	EPA 6020B	24530
2616120013	**HGWC-11**	EPA 3005A	24489	EPA 6020B	24530
2616120001	**MW-7**	EPA 7470A	24464	EPA 7470A	24540
2616120002	**MW-26D**	EPA 7470A	24639	EPA 7470A	24703
2616120003	**HGWC-9**	EPA 7470A	24464	EPA 7470A	24540
2616120004	**MW-27D**	EPA 7470A	24464	EPA 7470A	24540
2616120005	**MW-6**	EPA 7470A	24464	EPA 7470A	24540
2616120006	**HGWC-10**	EPA 7470A	24464	EPA 7470A	24540
2616120007	**MW-24D**	EPA 7470A	24464	EPA 7470A	24540
2616120008	**HGWC-13**	EPA 7470A	24464	EPA 7470A	24540
2616120009	**FD-1**	EPA 7470A	24464	EPA 7470A	24540
2616120010	**MW-20**	EPA 7470A	24464	EPA 7470A	24540
2616120011	**MW-5**	EPA 7470A	24464	EPA 7470A	24540
2616120012	**HGWC-7**	EPA 7470A	24464	EPA 7470A	24540
2616120013	**HGWC-11**	EPA 7470A	24464	EPA 7470A	24540
2616120001	**MW-7**	EPA 300.0	24522		
2616120002	**MW-26D**	EPA 300.0	24522		
2616120003	**HGWC-9**	EPA 300.0	24522		
2616120004	**MW-27D**	EPA 300.0	24522		
2616120005	**MW-6**	EPA 300.0	24522		
2616120006	**HGWC-10**	EPA 300.0	24522		
2616120007	**MW-24D**	EPA 300.0	24522		
2616120008	**HGWC-13**	EPA 300.0	24522		
2616120009	**FD-1**	EPA 300.0	24522		
2616120010	**MW-20**	EPA 300.0	24522		
2616120011	**MW-5**	EPA 300.0	24522		
2616120012	**HGWC-7**	EPA 300.0	24522		
2616120013	**HGWC-11**	EPA 300.0	24522		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: GA

State / Location

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
																		Y/N	N	M	M	—		
1	MW-7	WT	G	3/13	12:35	3/13	12:46	10	4	1		3							Y	Y	Y	H		H
2	MW-26D	WT	G	3/13	13:15	3/13	13:26	18	4	1		3							Y	Y	Y	H		H
3	HGWC-9	WT	G	3/13	11:25	3/13	11:46	16	4	1		3							Y	Y	Y	H		H
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

BLH 03/13/19

WO#: 2616120

2616120

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	BEH TICKNER	3/13/19	1823	Nadia Mostafa	3/13/19	1823	
	Nadia Mostafa/Geo	3/13/19	2018	[illegible] Geosyntec	3/13/19	20:18	
	[illegible] Geosyntec	3/14/19	1135	Pace	3/14/19	1135	
				MRahman	3/14/19	1245	2.1

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	BEH TICKNER				
SIGNATURE of SAMPLER:	BLH	DATE Signed:	03/13/19		

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.1	Y	Y	Y

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

Page: 2 **Of** 3

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
Fax:	
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham / Lauren Petty
Copy To:	Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency	
State / Location	GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): App. IV Metals N; Fluoride by 300.0 N; Radium 226/228 N; Metals (As, B, Co, Mo) —

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HW-27D	WT	G	3/13	8:54	3/13	9:24	17	4	1		3							Y	Y	Y	H	H	H
2	MW-6	WT	G	3/13	10:51	3/13	11:06	18	4	1		3							Y	Y	Y	H	H	H
3	HGWC-10	WT	G	3/13	11:50	3/13	12:10	16	4	1		3							Y	Y	Y	H	H	H
4	HW-24D	WT	G	3/13	14:22	3/13	14:48	20	4	1		3							Y	Y	Y	H	H	H
5	HGWC-13	WT	G	3/13	15:29	3/13	15:40	19	4	1		3							Y	Y	Y	H	H	H
6	FD-1	WT	G	3/13	—	3/13	—	19	4	1		3												
7																								
8																								
9																								
10																								
11																								
12																								

GW 03/13/19

WO#: 2616120

PM: BM Due Date: 03/21/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Grant Walter / Geosyntec	03/13/19	1823	Moulia Mundum	3/13/19	1823				
	Moulia Mundum / Pace	3/13/19	2018	W Blow / Geosyntec	3/13/19	2018				
	W Blow / Geosyntec	3/14/19	1135	[illegible] Pace	3/14/19	1135				
				M Lanman	3/14/19	1245	2.1	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: Grant Walter DATE Signed: 03/13/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 3 Of 3

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:		Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
																		Y/N	N	N	N	N	N	
1	MW-20	WT	G	3/13/19	1032	3/13/19	1053	16.6	4	1		3							Y	Y	Y	N	N	N
2	MW-5	WT	G	3/13/19	1212	3/13/19	1233	12.9	4	1		3							Y	Y	Y	N	N	N
3	HGWC-7	WT	G	3/13/19	1542	3/13/19	1603	18.3	4	1		3							Y	Y	Y	N	N	N
4	HGWC-11	WT	G	3/13/19	1713	3/13/19	1734	21.3	4	1		3							Y	Y	Y	N	N	N
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

3/13/19

NM

WO#: 2616120

PM: BM Due Date: 03/21/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Noelia Muskus/Geosyntec	3/13/19	2018	EBlanco/Geosyntec	3/13/19	20:18				
	EBlanco/Geosyntec	3/14/19	1135	Pace	3/14/19	1135				
				MZalman	3/14/19	1245	2.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 3/13/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616120

PM: BM Due Date: 03/21/19

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 2.1 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/14/19 MM

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 01, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616121

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 14, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616121

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616121

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616121001	**MW-7**	Water	03/13/19 17:46	03/14/19 12:45
2616121002	**MW-26D**	Water	03/13/19 13:36	03/14/19 12:45
2616121003	**HGWC-9**	Water	03/13/19 11:46	03/14/19 12:45
2616121004	**MW-27D**	Water	03/13/19 09:24	03/14/19 12:45
2616121005	**MW-6**	Water	03/13/19 11:06	03/14/19 12:45
2616121006	**HGWC-10**	Water	03/13/19 12:10	03/14/19 12:45
2616121007	**MW-24D**	Water	03/13/19 14:48	03/14/19 12:45
2616121008	**HGWC-13**	Water	03/13/19 15:40	03/14/19 12:45
2616121009	**FD-1**	Water	03/13/19 00:00	03/14/19 12:45
2616121010	**MW-20**	Water	03/13/19 10:53	03/14/19 12:45
2616121011	**MW-5**	Water	03/13/19 12:33	03/14/19 12:45
2616121012	**HGWC-7**	Water	03/13/19 16:03	03/14/19 12:45
2616121013	**HGWC-11**	Water	03/13/19 17:34	03/14/19 12:45

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616121

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616121001	**MW-7**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121002	**MW-26D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121003	**HGWC-9**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121004	**MW-27D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121005	**MW-6**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121006	**HGWC-10**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121007	**MW-24D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121008	**HGWC-13**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121009	**FD-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121010	**MW-20**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121011	**MW-5**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121012	**HGWC-7**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616121013	**HGWC-11**	EPA 9315	LAL	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616121

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-7 **Lab ID: 2616121001** Collected: 03/13/19 17:46 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.279 ± 0.224 (0.348) C:83% T:NA**	pCi/L	03/27/19 09:28	13982-63-3	
Radium-228	EPA 9320	**0.947 ± 0.444 (0.758) C:76% T:84%**	pCi/L	03/27/19 12:58	15262-20-1	
Total Radium	Total Radium Calculation	**1.23 ± 0.668 (1.11)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-26D **Lab ID: 2616121002** Collected: 03/13/19 13:36 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.322 ± 0.223 (0.355) C:84% T:NA**	pCi/L	03/25/19 10:07	13982-63-3	
Radium-228	EPA 9320	**0.305 ± 0.363 (0.764) C:72% T:77%**	pCi/L	03/26/19 14:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.627 ± 0.586 (1.12)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: HGWC-9 **Lab ID: 2616121003** Collected: 03/13/19 11:46 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.276 ± 0.215 (0.363) C:84% T:NA**	pCi/L	03/25/19 09:48	13982-63-3	
Radium-228	EPA 9320	**0.727 ± 0.437 (0.815) C:75% T:82%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**1.00 ± 0.652 (1.18)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-27D **Lab ID: 2616121004** Collected: 03/13/19 09:24 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.588 ± 0.331 (0.516) C:82% T:NA**	pCi/L	03/25/19 09:48	13982-63-3	
Radium-228	EPA 9320	**1.22 ± 0.457 (0.682) C:76% T:93%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**1.81 ± 0.788 (1.20)**	pCi/L	03/28/19 15:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-6 **Lab ID: 2616121005** Collected: 03/13/19 11:06 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.840 ± 0.406 (0.563) C:66% T:NA**	pCi/L	03/25/19 09:49	13982-63-3	
Radium-228	EPA 9320	**1.23 ± 0.526 (0.866) C:77% T:77%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**2.07 ± 0.932 (1.43)**	pCi/L	03/28/19 15:33	7440-14-4	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: HGWC-10 **Lab ID: 2616121006** Collected: 03/13/19 12:10 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.105 ± 0.189 (0.430) C:82% T:NA**	pCi/L	03/25/19 09:48	13982-63-3	
Radium-228	EPA 9320	**1.08 ± 0.472 (0.789) C:76% T:89%**	pCi/L	03/26/19 16:05	15262-20-1	
Total Radium	Total Radium Calculation	**1.19 ± 0.661 (1.22)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-24D **Lab ID: 2616121007** Collected: 03/13/19 14:48 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.0299 ± 0.156 (0.402) C:93% T:NA**	pCi/L	03/25/19 10:07	13982-63-3	
Radium-228	EPA 9320	**0.281 ± 0.360 (0.763) C:71% T:84%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.311 ± 0.516 (1.17)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: HGWC-13 **Lab ID: 2616121008** Collected: 03/13/19 15:40 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.365 ± 0.227 (0.309) C:88% T:NA**	pCi/L	03/25/19 10:07	13982-63-3	
Radium-228	EPA 9320	**0.0254 ± 0.267 (0.627) C:74% T:89%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.390 ± 0.494 (0.936)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: FD-1 **Lab ID: 2616121009** Collected: 03/13/19 00:00 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.668 ± 0.300 (0.282) C:80% T:NA**	pCi/L	03/25/19 09:48	13982-63-3	
Radium-228	EPA 9320	**1.02 ± 0.464 (0.778) C:76% T:83%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**1.69 ± 0.764 (1.06)**	pCi/L	03/28/19 15:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-20 **Lab ID: 2616121010** Collected: 03/13/19 10:53 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.315 ± 0.254 (0.460) C:83% T:NA**	pCi/L	03/25/19 09:49	13982-63-3	
Radium-228	EPA 9320	**0.223 ± 0.386 (0.843) C:76% T:83%**	pCi/L	03/26/19 16:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.538 ± 0.640 (1.30)**	pCi/L	03/28/19 15:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: MW-5 **Lab ID: 2616121011** Collected: 03/13/19 12:33 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.442 ± 0.247 (0.330) C:87% T:NA**	pCi/L	03/25/19 10:07	13982-63-3	
Radium-228	EPA 9320	**0.179 ± 0.313 (0.684) C:73% T:85%**	pCi/L	03/26/19 14:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.621 ± 0.560 (1.01)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: HGWC-7 **Lab ID: 2616121012** Collected: 03/13/19 16:03 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.210 ± 0.199 (0.367) C:79% T:NA**	pCi/L	03/25/19 07:59	13982-63-3	
Radium-228	EPA 9320	**0.193 ± 0.292 (0.630) C:74% T:75%**	pCi/L	03/26/19 14:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.403 ± 0.491 (0.997)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

Sample: HGWC-11 **Lab ID: 2616121013** Collected: 03/13/19 17:34 Received: 03/14/19 12:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.352 ± 0.225 (0.296) C:98% T:NA**	pCi/L	03/27/19 09:28	13982-63-3	
Radium-228	EPA 9320	**0.232 ± 0.305 (0.647) C:77% T:78%**	pCi/L	03/26/19 14:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.584 ± 0.530 (0.943)**	pCi/L	03/28/19 15:33	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

QC Batch: 334699 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616121001, 2616121013

METHOD BLANK: 1628719 Matrix: Water
Associated Lab Samples: 2616121001, 2616121013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.248 ± 0.200 (0.320) C:97% T:NA	pCi/L	03/27/19 09:28	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616121

QC Batch: 334689
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616121001

METHOD BLANK: 1628695
Matrix: Water
Associated Lab Samples: 2616121001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0633 ± 0.285 (0.651) C:77% T:86%	pCi/L	03/27/19 12:58	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616121

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616121

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616121001	MW-7	EPA 9315	334699		
2616121002	MW-26D	EPA 9315	334698		
2616121003	HGWC-9	EPA 9315	334698		
2616121004	MW-27D	EPA 9315	334698		
2616121005	MW-6	EPA 9315	334698		
2616121006	HGWC-10	EPA 9315	334698		
2616121007	MW-24D	EPA 9315	334698		
2616121008	HGWC-13	EPA 9315	334698		
2616121009	FD-1	EPA 9315	334698		
2616121010	MW-20	EPA 9315	334698		
2616121011	MW-5	EPA 9315	334698		
2616121012	HGWC-7	EPA 9315	334698		
2616121013	HGWC-11	EPA 9315	334699		
2616121001	MW-7	EPA 9320	334689		
2616121002	MW-26D	EPA 9320	334688		
2616121003	HGWC-9	EPA 9320	334688		
2616121004	MW-27D	EPA 9320	334688		
2616121005	MW-6	EPA 9320	334688		
2616121006	HGWC-10	EPA 9320	334688		
2616121007	MW-24D	EPA 9320	334688		
2616121008	HGWC-13	EPA 9320	334688		
2616121009	FD-1	EPA 9320	334688		
2616121010	MW-20	EPA 9320	334688		
2616121011	MW-5	EPA 9320	334688		
2616121012	HGWC-7	EPA 9320	334688		
2616121013	HGWC-11	EPA 9320	334688		
2616121001	MW-7	Total Radium Calculation	335990		
2616121002	MW-26D	Total Radium Calculation	335990		
2616121003	HGWC-9	Total Radium Calculation	335990		
2616121004	MW-27D	Total Radium Calculation	335989		
2616121005	MW-6	Total Radium Calculation	335990		
2616121006	HGWC-10	Total Radium Calculation	335990		
2616121007	MW-24D	Total Radium Calculation	335990		
2616121008	HGWC-13	Total Radium Calculation	335990		
2616121009	FD-1	Total Radium Calculation	335989		
2616121010	MW-20	Total Radium Calculation	335989		
2616121011	MW-5	Total Radium Calculation	335990		
2616121012	HGWC-7	Total Radium Calculation	335990		
2616121013	HGWC-11	Total Radium Calculation	335990		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS			DATE	TIME	DATE	TIME											Y/N	N	N	N			
1	MW-7	WT	G	3/13	12:35	3/13	12:46	10	4	1		3							Y	Y	Y	H	H	H
2	MW-26D	WT	G	3/13	13:15	3/13	13:30	12	4	1		3							Y	Y	Y	H	N	H
3	HBWC-9	WT	G	3/13	11:25	3/13	11:46	10	4	1		3							Y	Y	Y	H	H	H
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

3/13/19

BLT 03

WO#:2616121

2616121

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	BEN TICKNER	3/13/19	823	Nadia Mushan	3/13/19	1823				
	Nadia Mushan/GEC	3/13/19	2019	[illegible] Geosyntec	3/13/19	20:18				
	[illegible] Geosyntec	3/14/19	1135	[illegible] Pace	3/14/19	1135				
				M Rahman	3/14/19	1245	2.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	BEN TICKNER					
SIGNATURE of SAMPLER:	[signature]	DATE Signed: 03/13/19				

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 Of 3

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: | State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
				DATE	TIME	DATE	TIME											Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
1	MW-27D	WT	G	3/13	8:54	3/13	9:24	12	4	1		3							Y	Y	Y	A	A	N
2	MW-6	WT	G	3/13	10:51	3/13	11:06	16	4	1		3							Y	Y	Y	H	H	N
3	HBWC-10	WT	G	3/13	11:50	3/13	12:10	16	4	1		3							Y	Y	Y	H	H	N
4	MW-24D	WT	G	3/13	11:22	3/13	11:48	20	4	1		3							Y	Y	Y	H	H	N
5	HBWC-13	WT	G	3/13	15:27	3/13	15:40	19	4	1		3							Y	Y	Y	H	H	N
6	FD-1	WT	G	3/13	—	3/13	—	19	4	1		3												
7																								
8																								
9																								
10																								
11																								
12																								

GW 03/13/19

WO#: 2616121

PM: BM Due Date: 04/11/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Grant Walter / Geosyntec	03/13/19	1823	Melia Mimran	3/13/19	1823
	Melia Mimran / Geosyntec	3/13/19	2018	Lee Blow / Geosyntec	3/13/19	2018
	Lee Blow / Geosyntec	3/14/19	1135	Pace	3/14/19	1135
				MRahman	3/14/19	1246

SAMPLE CONDITIONS				
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
2.1	Y	Y	Y	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: Grant Walter DATE Signed: 03/13/19

Pace Analytical

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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test: Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N		N	N	
1	MW-20	WT	G	3/13/19	1032	3/13/19	1053	16.6	4	1		3						Y	Y	Y		N	N	N
2	MW-5	WT	G	3/13/19	1212	3/13/19	1233	12.5	4	1		3						Y	Y	Y		N	N	N
3	HGWC-7	WT	G	3/13/19	1542	3/13/19	1603	8.5	4	1		3						Y	Y	Y		N	N	N
4	HGWC-11	WT	G	3/13/19	1713	3/13/19	1734	9.2	4	1		3						Y	Y	Y		N	N	N
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

3/13/19

NM

WO#: 2616121

PM: BM Due Date: 04/11/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus/Geosyntec	3/13/19	2018	WBlanc/Geosyntec	3/13/19	2018	
	WBlanc/Geosyntec	3/14/19	1135	Pace	3/14/19	1135	
				MZalman	3/14/19	1245	2.1 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 3/13/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616121

PM: BM Due Date: 04/11/19

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 2.1 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/14/19 MK

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616161

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616161

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616161

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616161001	**HGWC-12**	Water	03/14/19 09:46	03/15/19 13:00
2616161002	**MW-25D**	Water	03/14/19 11:41	03/15/19 13:00
2616161003	**MW-19**	Water	03/14/19 14:21	03/15/19 13:00

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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616161

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616161001	**HGWC-12**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2616161002	**MW-25D**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2616161003	**MW-19**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616161

Sample: HGWC-12 **Lab ID: 2616161001** Collected: 03/14/19 09:46 Received: 03/15/19 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	ND	mg/L	0.0030	0.00078	1	03/19/19 12:15	03/20/19 23:27	7440-36-0	
Arsenic	**0.0026J**	mg/L	0.0050	0.00057	1	03/19/19 12:15	03/20/19 23:27	7440-38-2	
Barium	**0.081**	mg/L	0.010	0.00078	1	03/19/19 12:15	03/20/19 23:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/19 12:15	03/20/19 23:27	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/19 12:15	03/20/19 23:27	7440-43-9	
Chromium	**0.0025J**	mg/L	0.010	0.0016	1	03/19/19 12:15	03/20/19 23:27	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.010	0.00052	1	03/19/19 12:15	03/20/19 23:27	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/19 12:15	03/20/19 23:27	7439-92-1	
Lithium	**0.0058J**	mg/L	0.050	0.00097	1	03/19/19 12:15	03/20/19 23:27	7439-93-2	
Molybdenum	**0.046**	mg/L	0.010	0.0019	1	03/19/19 12:15	03/20/19 23:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/19 12:15	03/20/19 23:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/19 12:15	03/20/19 23:27	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:24	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**1.1**	mg/L	0.30	0.029	1		03/22/19 01:03	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616161

Sample: MW-25D **Lab ID: 2616161002** Collected: 03/14/19 11:41 Received: 03/15/19 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	ND	mg/L	0.0030	0.00078	1	03/19/19 12:15	03/20/19 23:33	7440-36-0	
Arsenic	**0.0019J**	mg/L	0.0050	0.00057	1	03/19/19 12:15	03/20/19 23:33	7440-38-2	
Barium	**0.44**	mg/L	0.010	0.00078	1	03/19/19 12:15	03/21/19 15:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/19 12:15	03/20/19 23:33	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/19 12:15	03/20/19 23:33	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/19/19 12:15	03/20/19 23:33	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/19/19 12:15	03/20/19 23:33	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/19 12:15	03/20/19 23:33	7439-92-1	
Lithium	**0.050**	mg/L	0.050	0.00097	1	03/19/19 12:15	03/20/19 23:33	7439-93-2	
Molybdenum	**0.0022J**	mg/L	0.010	0.0019	1	03/19/19 12:15	03/20/19 23:33	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/19 12:15	03/20/19 23:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/19 12:15	03/20/19 23:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 15:26	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**2.2**	mg/L	0.30	0.029	1		03/22/19 01:28	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616161

Sample: MW-19 **Lab ID: 2616161003** Collected: 03/14/19 14:21 Received: 03/15/19 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	ND	mg/L	0.0030	0.00078	1	03/19/19 12:15	03/20/19 23:39	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/19/19 12:15	03/20/19 23:39	7440-38-2	
Barium	**0.060**	mg/L	0.010	0.00078	1	03/19/19 12:15	03/20/19 23:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/19 12:15	03/20/19 23:39	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/19 12:15	03/20/19 23:39	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/19/19 12:15	03/20/19 23:39	7440-47-3	
Cobalt	**0.025**	mg/L	0.010	0.00052	1	03/19/19 12:15	03/20/19 23:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/19 12:15	03/20/19 23:39	7439-92-1	
Lithium	**0.0089J**	mg/L	0.050	0.00097	1	03/19/19 12:15	03/20/19 23:39	7439-93-2	
Molybdenum	**0.057**	mg/L	0.010	0.0019	1	03/19/19 12:15	03/20/19 23:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/19 12:15	03/20/19 23:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/19 12:15	03/20/19 23:39	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/18/19 10:52	03/19/19 16:37	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.35**	mg/L	0.30	0.029	1		03/22/19 01:52	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616161

QC Batch: 24464 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2616161001, 2616161002, 2616161003

METHOD BLANK: 109864 Matrix: Water
Associated Lab Samples: 2616161001, 2616161002, 2616161003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/19/19 14:39	

LABORATORY CONTROL SAMPLE: 109865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 109866 109867

Parameter	Units	2616120001 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	0.0025	0.0025	0.0025	0.0025	101	102	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616161

QC Batch: 24594 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616161001, 2616161002, 2616161003

METHOD BLANK: 110479 Matrix: Water
Associated Lab Samples: 2616161001, 2616161002, 2616161003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/20/19 18:52	
Arsenic	mg/L	ND	0.0050	0.00057	03/20/19 18:52	
Barium	mg/L	ND	0.010	0.00078	03/20/19 18:52	
Beryllium	mg/L	ND	0.0030	0.000050	03/20/19 18:52	
Cadmium	mg/L	ND	0.0010	0.000093	03/20/19 18:52	
Chromium	mg/L	ND	0.010	0.0016	03/20/19 18:52	
Cobalt	mg/L	ND	0.010	0.00052	03/20/19 18:52	
Lead	mg/L	ND	0.0050	0.00027	03/20/19 18:52	
Lithium	mg/L	ND	0.050	0.00097	03/20/19 18:52	
Molybdenum	mg/L	ND	0.010	0.0019	03/20/19 18:52	
Selenium	mg/L	ND	0.010	0.0014	03/20/19 18:52	
Thallium	mg/L	ND	0.0010	0.00014	03/20/19 18:52	

LABORATORY CONTROL SAMPLE: 110480

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 110481 110482

Parameter	Units	2616160006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	2	20	
Barium	mg/L	0.026	0.1	0.1	0.11	0.11	86	85	75-125	1	20	
Beryllium	mg/L	0.00017J	0.1	0.1	0.093	0.090	93	90	75-125	4	20	
Cadmium	mg/L	0.00058J	0.1	0.1	0.096	0.097	96	96	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616161

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 110481 110482

Parameter	Units	2616160006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	99	99	75-125	0	20	
Cobalt	mg/L	0.0099J	0.1	0.1	0.11	0.10	96	95	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.091	0.091	91	91	75-125	0	20	
Lithium	mg/L	0.0061J	0.1	0.1	0.098	0.095	91	89	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	103	103	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.091	0.092	91	92	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616161

QC Batch: 24743 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616161001, 2616161002, 2616161003

METHOD BLANK: 111327 Matrix: Water
Associated Lab Samples: 2616161001, 2616161002, 2616161003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/21/19 21:46	

LABORATORY CONTROL SAMPLE: 111328

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 111329 111330

Parameter	Units	2616160010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	11.5	11.2	115	112	90-110	2	15	M1

MATRIX SPIKE SAMPLE: 111331

Parameter	Units	2616160011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	1.6	10	13.6	120	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616161

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616161

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616161001	**HGWC-12**	EPA 3005A	24594	EPA 6020B	24646
2616161002	**MW-25D**	EPA 3005A	24594	EPA 6020B	24646
2616161003	**MW-19**	EPA 3005A	24594	EPA 6020B	24646
2616161001	**HGWC-12**	EPA 7470A	24464	EPA 7470A	24540
2616161002	**MW-25D**	EPA 7470A	24464	EPA 7470A	24540
2616161003	**MW-19**	EPA 7470A	24464	EPA 7470A	24540
2616161001	**HGWC-12**	EPA 300.0	24743		
2616161002	**MW-25D**	EPA 300.0	24743		
2616161003	**MW-19**	EPA 300.0	24743		

Pace Analytical

CHAIN-OF-CUSTODY / ...
The Chain-of-Custody is a LEGAL DC...

WO#: 2616161

2616161

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 Fax:
- Requested Due Date: Standard TAT

Section B — Required Project Information:
- Report To: Joju Abraham / Lauren Petty
- Copy To: Geosyntec
- Purchase Order #: SCS10348606
- Project Name: Plant Hammond
- Project #:

Section C — Invoice Information:
- Attention: scsinvoices@southernco.com
- Company Name:
- Address:
- Pace Quote:
- Pace Project Manager: betsy.mcdaniel@pacelabs.com,
- Pace Profile #: 327.4 (AP) or 328.5 (Huff)

Regulatory Agency:

State / Location: GA

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	HGWC-12	WT	G	3/14/19	0935	3/14/19	0946	18	4	1		3							Y	Y	Y	—	—	N
2	MW-25D	WT	G	3/14/19	1120	3/14/19	1141	19	4	1		3							Y	Y	Y	—	—	N
3	MW-19	WT	G	3/14/19	1400	3/14/19	1421	17	4	1		3							Y	Y	Y	—	—	N
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

BM 03/14/19

ADDITIONAL COMMENTS	RELINQUISHED 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)
	BM / Geo	3/14/19	1848	Mattie Whelan	3/14/19	1848				
	Mattie Whelan / Geosyntec	3/14/19	2026	[illegible] / Geosyntec	3/14/19	2026				
	[illegible] / Geosyntec	3/15/19	1129	M. RAHMAN	3/15/19	1129				
				Jessica Whitley PACE	3/15/19	1300	4.5°	Y	N	Y

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: BEN TICKNER
- SIGNATURE of SAMPLER: [signature]
- DATE Signed: 3/14/19

Pace Analytical

Sample Condition Upon Receipt

WO#: 2616161

Client Name: GA Power - CCR

PM: BM **Due Date: 03/22/19**

CLIENT: GAPower-CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other Courier

Tracking #: _____

Options
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 083 **Type of Ice:** (Wet) Blue None

☐ Samples on ice, cooling process has begun

Cooler Temperature 4.5°C **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 3/15/19 JW

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 02, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616168

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616168

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616168

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616168001	**HGWC-12**	Water	03/14/19 09:46	03/15/19 13:00
2616168002	**MW-25D**	Water	03/14/19 11:41	03/15/19 13:00
2616168003	**MW-19**	Water	03/14/19 14:21	03/15/19 13:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616168

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616168001	**HGWC-12**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616168002	**MW-25D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2616168003	**MW-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616168

Sample: HGWC-12 **Lab ID: 2616168001** Collected: 03/14/19 09:46 Received: 03/15/19 13:00 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	**0.327 ± 0.118 (0.142) C:92% T:NA**	pCi/L	03/26/19 21:15	13982-63-3	
Radium-228	EPA 9320	**0.665 ± 0.471 (0.903) C:79% T:83%**	pCi/L	03/27/19 18:19	15262-20-1	
Total Radium	Total Radium Calculation	**0.992 ± 0.589 (1.05)**	pCi/L	03/28/19 15:44	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616168

Sample: MW-25D **Lab ID: 2616168002** Collected: 03/14/19 11:41 Received: 03/15/19 13:00 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	**0.552 ± 0.177 (0.228) C:90% T:NA**	pCi/L	03/26/19 21:15	13982-63-3	
Radium-228	EPA 9320	**0.732 ± 0.732 (1.53) C:74% T:91%**	pCi/L	03/27/19 19:43	15262-20-1	
Total Radium	Total Radium Calculation	**1.28 ± 0.909 (1.76)**	pCi/L	03/28/19 15:44	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616168

Sample: MW-19 **Lab ID: 2616168003** Collected: 03/14/19 14:21 Received: 03/15/19 13:00 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	**0.347 ± 0.127 (0.158) C:91% T:NA**	pCi/L	03/26/19 21:15	13982-63-3	
Radium-228	EPA 9320	**-0.259 ± 0.590 (1.41) C:76% T:87%**	pCi/L	03/27/19 19:43	15262-20-1	
Total Radium	Total Radium Calculation	**0.347 ± 0.717 (1.57)**	pCi/L	03/28/19 15:44	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616168

QC Batch: 334699 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616168001, 2616168002, 2616168003

METHOD BLANK: 1628719 Matrix: Water
Associated Lab Samples: 2616168001, 2616168002, 2616168003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.248 ± 0.200 (0.320) C:97% T:NA	pCi/L	03/27/19 09:28	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616168

QC Batch: 334690 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616168001, 2616168002, 2616168003

METHOD BLANK: 1628696 Matrix: Water
Associated Lab Samples: 2616168001, 2616168002, 2616168003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.646 ± 0.338 (0.565) C:74% T:86%	pCi/L	03/27/19 16:14	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616168

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616168

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616168001	**HGWC-12**	EPA 9315	334699		
2616168002	**MW-25D**	EPA 9315	334699		
2616168003	**MW-19**	EPA 9315	334699		
2616168001	**HGWC-12**	EPA 9320	334690		
2616168002	**MW-25D**	EPA 9320	334690		
2616168003	**MW-19**	EPA 9320	334690		
2616168001	**HGWC-12**	Total Radium Calculation	335993		
2616168002	**MW-25D**	Total Radium Calculation	335993		
2616168003	**MW-19**	Total Radium Calculation	335993		

Pace Analytical

CHAIN-OF-CUSTODY / A

The Chain-of-Custody is a LEGAL DOC

WO# : 2616168

2616168

Page 1 of 1

3/15/19

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 Fax:
- Requested Due Date: Standard TAT

Section B — Required Project Information:
- Report To: Joju Abraham / Lauren Petty
- Copy To: Geosyntec
- Purchase Order #: SCS10348606
- Project Name: Plant Hammond
- Project #:

Section C — Invoice Information:
- Attention: scsinvoices@southernco.com
- Company Name:
- Address:
- Pace Quote:
- Pace Project Manager: betsy.mcdaniel@pacelabs.com,
- Pace Profile #: 327.4 (AP) or 328.5 (Huff)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)	PC
1	HGWC-12	WT	G	3/14/19	0935	3/14/19	0946	19	4	1		3						Y	Y	Y	Y	—		N	1
2	MW-25D	WT	G	3/14/19	1120	3/14/19	1141	19	4	1		3						Y	Y	Y	Y	—		N	2
3	MW-19	WT	G	3/14/19	1400	3/14/19	1421	17	4	1		3						Y	Y	Y	Y	—		N	3
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

BM 03/14/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	[signature] / Geo	3/14/19	1848	[signature]	3/14/19	1848	
	[signature] / Georgia	3/14/19	2026	[signature] / Geosyntec	3/14/19	2026	
	[signature] / Geosyntec	3/15/19	1129	M. RAHMAN	3/15/19	1129	
				Jessica Whitley PACE	3/15/19	1300	4.5° Y N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: PEN TICKNER

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/14/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical

Sample Condition Upon Receipt

Client Name: GA Power - CCR

WO#: 2616168

PM: BM Due Date: 04/12/19

CLIENT: GAPower-CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other Courier

Tracking #: _____

Optional
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 083 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.5°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/15/19 JW

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616230

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 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,

Eben Buchanan 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616230

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616230

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616230001	**FB-02**	Water	03/15/19 14:50	03/18/19 12:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616230

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616230001	**FB-02**	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		EPA 300.0	RLC	2

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616230

Sample: FB-02 **Lab ID: 2616230001** Collected: 03/15/19 14:50 Received: 03/18/19 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								
Antimony	ND	mg/L	0.0030	0.00078	1	03/20/19 14:34	03/21/19 23:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/20/19 14:34	03/21/19 23:21	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/20/19 14:34	03/21/19 23:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/20/19 14:34	03/21/19 23:21	7440-41-7	
Boron	**0.011J**	mg/L	0.040	0.0039	1	03/20/19 14:34	03/21/19 23:21	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/20/19 14:34	03/21/19 23:21	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/20/19 14:34	03/21/19 23:21	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/20/19 14:34	03/21/19 23:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/20/19 14:34	03/21/19 23:21	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/20/19 14:34	03/21/19 23:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/20/19 14:34	03/21/19 23:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/20/19 14:34	03/21/19 23:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/20/19 14:34	03/21/19 23:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	03/25/19 08:02	03/25/19 13:58	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		03/24/19 17:35	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		03/24/19 17:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616230

QC Batch: 24983 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2616230001

METHOD BLANK: 112752 Matrix: Water
Associated Lab Samples: 2616230001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/25/19 12:52	

LABORATORY CONTROL SAMPLE: 112753

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 112754 112755

Parameter	Units	2616228001 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	0.0025	0.0025	0.0023	0.0024	92	95	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616230

QC Batch: 24707
QC Batch Method: EPA 3005A
Associated Lab Samples: 2616230001

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 111121 Matrix: Water
Associated Lab Samples: 2616230001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/21/19 19:09	
Arsenic	mg/L	ND	0.0050	0.00057	03/21/19 19:09	
Barium	mg/L	ND	0.010	0.00078	03/21/19 19:09	
Beryllium	mg/L	ND	0.0030	0.000050	03/21/19 19:09	
Boron	mg/L	ND	0.040	0.0039	03/21/19 19:09	
Cadmium	mg/L	ND	0.0010	0.000093	03/21/19 19:09	
Chromium	mg/L	ND	0.010	0.0016	03/21/19 19:09	
Cobalt	mg/L	ND	0.010	0.00052	03/21/19 19:09	
Lead	mg/L	ND	0.0050	0.00027	03/21/19 19:09	
Lithium	mg/L	ND	0.050	0.00097	03/21/19 19:09	
Molybdenum	mg/L	ND	0.010	0.0019	03/21/19 19:09	
Selenium	mg/L	ND	0.010	0.0014	03/21/19 19:09	
Thallium	mg/L	ND	0.0010	0.00014	03/21/19 19:09	

LABORATORY CONTROL SAMPLE: 111122

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.10	104	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	100	80-120	
Cadmium	mg/L	0.1	0.10	105	80-120	
Chromium	mg/L	0.1	0.11	106	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.11	108	80-120	
Selenium	mg/L	0.1	0.10	105	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 111123 111124

Parameter	Units	2616193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	107	106	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.028	0.1	0.1	0.13	0.13	101	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616230

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 111123 111124

Parameter	Units	2616193001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.10	0.098	100	98	75-125	2	20	
Boron	mg/L	0.0070J	1	1	0.96	0.99	95	98	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.098	0.096	97	96	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	107	105	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	105	103	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616230

QC Batch: 24985
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616230001

METHOD BLANK: 112760 Matrix: Water
Associated Lab Samples: 2616230001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/24/19 14:11	
Sulfate	mg/L	ND	1.0	0.017	03/24/19 14:11	

LABORATORY CONTROL SAMPLE: 112761

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.9	99	90-110	
Sulfate	mg/L	10	9.4	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 112762 112763

Parameter	Units	2616191001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	9.0	9.5	90	95	90-110	5	15	
Sulfate	mg/L	22.0	10	10	28.9	29.2	69	72	90-110	1	15	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616230

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616230

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616230001	**FB-02**	EPA 3005A	24707	EPA 6020B	24750
2616230001	**FB-02**	EPA 7470A	24983	EPA 7470A	25042
2616230001	**FB-02**	EPA 300.0	24985		

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:		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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: | State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	FB-02	WT	G	3/15/19	1445	3/15/19	1460	20	4	1		3						Y	Y	Y	Y	Y	Y	N
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

3/15/19

AJM

WO#: 2616230

2616230

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus Kaczynski	3/18/19	1026	Pascal Raymond	3/18/19	10:24	
				MDahlman	3/18/19	1200	
							4.2 Y Y Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus

DATE Signed: 3/15/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616230

PM: BM Due Date: 03/25/19

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 4.2 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: 03/18/19 MM

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 10, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616231

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on March 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616231

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616231

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616231001	**FB-02**	Water	03/15/19 14:50	03/18/19 12:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616231

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616231001	**FB-02**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616231

Sample: FB-02 **Lab ID: 2616231001** Collected: 03/15/19 14:50 Received: 03/18/19 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	**0.285 ± 0.233 (0.397) C:91% T:NA**	pCi/L	03/27/19 08:15	13982-63-3	
Radium-228	EPA 9320	**0.313 ± 0.326 (0.671) C:70% T:84%**	pCi/L	03/29/19 14:37	15262-20-1	
Total Radium	Total Radium Calculation	**0.598 ± 0.559 (1.07)**	pCi/L	04/02/19 13:34	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616231

QC Batch: 334703 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616231001

METHOD BLANK: 1628726 Matrix: Water
Associated Lab Samples: 2616231001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.496 ± 0.336 (0.636) C:77% T:84%	pCi/L	03/29/19 11:27	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616231

QC Batch: 334701 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616231001

METHOD BLANK: 1628722 Matrix: Water
Associated Lab Samples: 2616231001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.317 ± 0.219 (0.286) C:97% T:NA	pCi/L	03/27/19 08:17	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616231

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616231

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616231001	**FB-02**	EPA 9315	334701		
2616231001	**FB-02**	EPA 9320	334703		
2616231001	**FB-02**	Total Radium Calculation	336613		

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:		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 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327.4 (AP) or 328.5 (Huff)

Regulatory Agency: | State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	App. IV Metals	Fluoride by 300.0	Radium 226/228	Metals (As, B, Co, Mo)	Sulfate by 300.0	Residual Chlorine (Y/N)
1	FB-02	WT	G	3/15/19	1445	3/15/19	1460	20	4	1		3						Y	Y	Y	Y		Y	Y	N
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

3/15/19

AM

WO#: 2616231

2616231

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Nadia Muskus Geosyntec	3/18/19	1026	Pascal Payton	3/18/19	10:26	
				MDallman	3/18/19	1200	4.2 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 3/15/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.2	Y	Y	Y

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616231

PM: BM Due Date: 04/15/19

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 4.2 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: 3/18/19 MM

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 09, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616885

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.

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616885

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616885

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616885001	**HGWA-3**	Water	04/01/19 17:25	04/02/19 11:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616885

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616885001	**HGWA-3**	EPA 6020B	CSW	14
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616885

Sample: HGWA-3 **Lab ID: 2616885001** Collected: 04/01/19 17:25 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 14:47	04/08/19 18:46	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 14:47	04/08/19 18:46	7440-38-2	
Barium	**0.13**	mg/L	0.010	0.00078	1	04/05/19 14:47	04/08/19 18:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 14:47	04/08/19 18:46	7440-41-7	
Boron	**0.0066J**	mg/L	0.040	0.0039	1	04/05/19 14:47	04/08/19 18:46	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 14:47	04/08/19 18:46	7440-43-9	
Calcium	**80.5**	mg/L	25.0	0.69	50	04/05/19 14:47	04/08/19 18:52	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 14:47	04/08/19 18:46	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 14:47	04/08/19 18:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/05/19 14:47	04/08/19 18:46	7439-92-1	
Lithium	**0.0032J**	mg/L	0.050	0.00097	1	04/05/19 14:47	04/08/19 18:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/05/19 14:47	04/08/19 18:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 14:47	04/08/19 18:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 14:47	04/08/19 18:46	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**284**	mg/L	25.0	10.0	1		04/04/19 17:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.5**	mg/L	0.25	0.024	1		04/06/19 01:13	16887-00-6	M1
Fluoride	**0.029J**	mg/L	0.30	0.029	1		04/06/19 01:13	16984-48-8	
Sulfate	**50.4**	mg/L	10.0	0.17	10		04/08/19 20:01	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616885

QC Batch: 25905
QC Batch Method: EPA 3005A
Associated Lab Samples: 2616885001

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 116813 Matrix: Water
Associated Lab Samples: 2616885001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/08/19 18:23	
Arsenic	mg/L	ND	0.0050	0.00057	04/08/19 18:23	
Barium	mg/L	ND	0.010	0.00078	04/08/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000050	04/08/19 18:23	
Boron	mg/L	ND	0.040	0.0039	04/08/19 18:23	
Cadmium	mg/L	ND	0.0010	0.000093	04/08/19 18:23	
Calcium	mg/L	ND	0.50	0.014	04/08/19 18:23	
Chromium	mg/L	ND	0.010	0.0016	04/08/19 18:23	
Cobalt	mg/L	ND	0.010	0.00052	04/08/19 18:23	
Lead	mg/L	ND	0.0050	0.00027	04/08/19 18:23	
Lithium	mg/L	ND	0.050	0.00097	04/08/19 18:23	
Molybdenum	mg/L	ND	0.010	0.0019	04/08/19 18:23	
Selenium	mg/L	ND	0.010	0.0014	04/08/19 18:23	
Thallium	mg/L	ND	0.0010	0.00014	04/08/19 18:23	

LABORATORY CONTROL SAMPLE: 116814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	108	80-120	
Arsenic	mg/L	0.1	0.10	103	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	105	80-120	
Cadmium	mg/L	0.1	0.11	109	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	0.1	0.11	108	80-120	
Cobalt	mg/L	0.1	0.11	107	80-120	
Lead	mg/L	0.1	0.10	103	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.11	105	80-120	
Selenium	mg/L	0.1	0.11	106	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116815 116816

Parameter	Units	2616901004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	110	107	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616885

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116815 116816

Parameter	Units	2616901004 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	0.1	0.1	0.10	0.10	103	102	75-125	1	20	
Barium	mg/L	0.027	0.1	0.1	0.13	0.13	105	100	75-125	4	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Boron	mg/L	0.63	1	1	1.6	1.6	102	101	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.10	105	105	75-125	0	20	
Calcium	mg/L	11.9J	1	1	13.1J	17.2J	129	532	75-125	27	20	M6,R1
Chromium	mg/L	0.0030J	0.1	0.1	0.11	0.11	106	106	75-125	0	20	
Cobalt	mg/L	0.0022J	0.1	0.1	0.11	0.10	103	101	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	0	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	102	100	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	103	102	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616885

QC Batch: 25772
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2616885001

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616885

QC Batch: 25881
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616885001

METHOD BLANK: 116727 Matrix: Water
Associated Lab Samples: 2616885001

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

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616885

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616885

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616885001	**HGWA-3**	EPA 3005A	25905	EPA 6020B	25922
2616885001	**HGWA-3**	SM 2540C	25772		
2616885001	**HGWA-3**	EPA 300.0	25881		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWA-3	WT	G	4/1/19	1700	4/1/19	1725	12	5	2		3							Y	—		Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

NM 4/1/19

WO#: 2616885

2616885

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Appendix IV (1): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus/Geo	4/1/19	930	Nardos Tilahun/Geo	4/2/19	0930
	Nardos Tilahun/Geo	4/2/19	1036	[signature]	4/2/19	1036
				[signature]	4/2/19	1130

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/1/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616885

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #:

PM: BM Due Date: 04/09/19

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 2.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/2/19 MR

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616886

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.

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616886

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616886

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616886001	**HGWA-3**	Water	04/01/19 17:25	04/02/19 11:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616886

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616886001	**HGWA-3**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616886

Sample: HGWA-3 **Lab ID: 2616886001** Collected: 04/01/19 17:25 Received: 04/02/19 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	**0.388 ± 0.261 (0.385) C:94% T:NA**	pCi/L	04/12/19 08:04	13982-63-3	
Radium-228	EPA 9320	**0.372 ± 0.422 (0.887) C:75% T:83%**	pCi/L	04/16/19 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**0.760 ± 0.683 (1.27)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616886

QC Batch: 337341 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616886001

METHOD BLANK: 1641952 Matrix: Water
Associated Lab Samples: 2616886001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.438 ± 0.343 (0.679) C:77% T:88%	pCi/L	04/16/19 13:06	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616886

QC Batch: 337391 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616886001

METHOD BLANK: 1642068 Matrix: Water
Associated Lab Samples: 2616886001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.148 ± 0.194 (0.401) C:93% T:NA	pCi/L	04/12/19 08:12	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616886

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616886

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616886001	**HGWA-3**	EPA 9315	337391		
2616886001	**HGWA-3**	EPA 9320	337341		
2616886001	**HGWA-3**	Total Radium Calculation	338683		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWA-3	WT	G	4/1/19	1700	4/1/19	1705	12	5	2		3							Y	—	Y	Y		1
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/1/19

WO#: 2616886

2616886

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Appendix IV (1): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thalium	Noelia Muskus/Geo	4/1/19	930	Nardos Tilahun/Geo	4/2/19	0930	
	Nardos Tilahun/Geo	4/2/19	1036	[illegible] Pace	4.2.19	1036	
				M Rahman	4/2/19	1130	

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/1/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616886

PM: BM Due Date: 04/30/19

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 KKR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 10, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616925

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616925

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616925

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616925001	**HGWA-1**	Water	04/02/19 10:02	04/03/19 11:10
2616925002	**HGWA-2**	Water	04/02/19 13:40	04/03/19 11:10

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616925

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616925001	**HGWA-1**	EPA 6020B	CSW	14
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616925002	**HGWA-2**	EPA 6020B	CSW	14
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616925

Sample: HGWA-1 **Lab ID: 2616925001** Collected: 04/02/19 10:02 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 14:47	04/08/19 22:29	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 14:47	04/08/19 22:29	7440-38-2	
Barium	**0.040**	mg/L	0.010	0.00078	1	04/05/19 14:47	04/08/19 22:29	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 14:47	04/08/19 22:29	7440-41-7	
Boron	**0.016J**	mg/L	0.040	0.0039	1	04/05/19 14:47	04/08/19 22:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 14:47	04/08/19 22:29	7440-43-9	
Calcium	**132**	mg/L	25.0	0.69	50	04/05/19 14:47	04/08/19 22:35	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 14:47	04/08/19 22:29	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 14:47	04/08/19 22:29	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/05/19 14:47	04/08/19 22:29	7439-92-1	
Lithium	**0.0010J**	mg/L	0.050	0.00097	1	04/05/19 14:47	04/08/19 22:29	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/05/19 14:47	04/08/19 22:29	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 14:47	04/08/19 22:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 14:47	04/08/19 22:29	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**452**	mg/L	25.0	10.0	1		04/08/19 15:30		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**20.3**	mg/L	0.25	0.024	1		04/06/19 10:16	16887-00-6	
Fluoride	**0.10J**	mg/L	0.30	0.029	1		04/06/19 10:16	16984-48-8	
Sulfate	**84.3**	mg/L	5.0	0.085	5		04/06/19 11:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616925

Sample: HGWA-2 **Lab ID: 2616925002** Collected: 04/02/19 13:40 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 14:47	04/08/19 22:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 14:47	04/08/19 22:52	7440-38-2	
Barium	**0.13**	mg/L	0.010	0.00078	1	04/05/19 14:47	04/08/19 22:52	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000050	1	04/05/19 14:47	04/08/19 22:52	7440-41-7	
Boron	**0.034J**	mg/L	0.040	0.0039	1	04/05/19 14:47	04/08/19 22:52	7440-42-8	
Cadmium	**0.00015J**	mg/L	0.0010	0.000093	1	04/05/19 14:47	04/08/19 22:52	7440-43-9	
Calcium	**22.5J**	mg/L	25.0	0.69	50	04/05/19 14:47	04/08/19 22:58	7440-70-2	D3
Chromium	**0.0079J**	mg/L	0.010	0.0016	1	04/05/19 14:47	04/08/19 22:52	7440-47-3	
Cobalt	**0.019**	mg/L	0.010	0.00052	1	04/05/19 14:47	04/08/19 22:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/05/19 14:47	04/08/19 22:52	7439-92-1	
Lithium	**0.0018J**	mg/L	0.050	0.00097	1	04/05/19 14:47	04/08/19 22:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/05/19 14:47	04/08/19 22:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 14:47	04/08/19 22:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 14:47	04/08/19 22:52	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**133**	mg/L	25.0	10.0	1		04/08/19 15:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.8**	mg/L	0.25	0.024	1		04/06/19 10:38	16887-00-6	
Fluoride	**0.071J**	mg/L	0.30	0.029	1		04/06/19 10:38	16984-48-8	
Sulfate	**48.7**	mg/L	1.0	0.017	1		04/06/19 10:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616925

QC Batch: 25905 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616925001, 2616925002

METHOD BLANK: 116813 Matrix: Water
Associated Lab Samples: 2616925001, 2616925002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/08/19 18:23	
Arsenic	mg/L	ND	0.0050	0.00057	04/08/19 18:23	
Barium	mg/L	ND	0.010	0.00078	04/08/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000050	04/08/19 18:23	
Boron	mg/L	ND	0.040	0.0039	04/08/19 18:23	
Cadmium	mg/L	ND	0.0010	0.000093	04/08/19 18:23	
Calcium	mg/L	ND	0.50	0.014	04/08/19 18:23	
Chromium	mg/L	ND	0.010	0.0016	04/08/19 18:23	
Cobalt	mg/L	ND	0.010	0.00052	04/08/19 18:23	
Lead	mg/L	ND	0.0050	0.00027	04/08/19 18:23	
Lithium	mg/L	ND	0.050	0.00097	04/08/19 18:23	
Molybdenum	mg/L	ND	0.010	0.0019	04/08/19 18:23	
Selenium	mg/L	ND	0.010	0.0014	04/08/19 18:23	
Thallium	mg/L	ND	0.0010	0.00014	04/08/19 18:23	

LABORATORY CONTROL SAMPLE: 116814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	108	80-120	
Arsenic	mg/L	0.1	0.10	103	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	105	80-120	
Cadmium	mg/L	0.1	0.11	109	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	0.1	0.11	108	80-120	
Cobalt	mg/L	0.1	0.11	107	80-120	
Lead	mg/L	0.1	0.10	103	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.11	105	80-120	
Selenium	mg/L	0.1	0.11	106	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116815 116816

Parameter	Units	2616901004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	110	107	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116815 116816

Parameter	Units	2616901004 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	0.1	0.1	0.10	0.10	103	102	75-125	1	20	
Barium	mg/L	0.027	0.1	0.1	0.13	0.13	105	100	75-125	4	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Boron	mg/L	0.63	1	1	1.6	1.6	102	101	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.10	105	105	75-125	0	20	
Calcium	mg/L	11.9J	1	1	13.1J	17.2J	129	532	75-125	27	20	M6,R1
Chromium	mg/L	0.0030J	0.1	0.1	0.11	0.11	106	106	75-125	0	20	
Cobalt	mg/L	0.0022J	0.1	0.1	0.11	0.10	103	101	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	0	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	102	100	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	103	102	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616925

QC Batch: 25999
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2616925001, 2616925002

LABORATORY CONTROL SAMPLE: 117377

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 117378

Parameter	Units	2617086001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	226	203	11	10	D6

SAMPLE DUPLICATE: 117379

Parameter	Units	2616901015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	13.0J		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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616925

QC Batch: 25881 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616925001, 2616925002

METHOD BLANK: 116727 Matrix: Water
Associated Lab Samples: 2616925001, 2616925002

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

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616925

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616925

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616925001	**HGWA-1**	EPA 3005A	25905	EPA 6020B	25922
2616925002	**HGWA-2**	EPA 3005A	25905	EPA 6020B	25922
2616925001	**HGWA-1**	SM 2540C	25999		
2616925002	**HGWA-2**	SM 2540C	25999		
2616925001	**HGWA-1**	EPA 300.0	25881		
2616925002	**HGWA-2**	EPA 300.0	25881		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: State/Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWA-1	WT	G	04/02	9:48	04/02	10:02	16	5	2		3						Y	Y	—		Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 04/02/19

WO#: 2616925

2616925

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App IV (1): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium	Grant Walter/Geosyntec	04/02/19	1745	Malia Muston/Georgia	4/2/19	1745	
	Malia Muston/Georgia	4/2/19	1950	[illegible]	4/2/19	1930	
	[illegible]	4/3/19	0954	[illegible]	4/3/19	0954	
				MMuston	4/3/19	1110	1.0 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: [signature] DATE Signed: 04/02/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 Of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWA-2	WT	G	4/2/19	13:10	4/2/19	13:40	17.0	5	2		3						Y	—			Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

DCA 4/2/2019

WO#:2616925

2616925

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
APP IV (1): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium	Dalton Anderson (GEO)	4/2/19	17:45	Mallie Munton / Geosyntec	4/2/19	1745	
	Mallie Munton / Geosyntec	4/2/19	1938	Kelli Law / Geosyntec	4/2/19	1938	
	Kelli Law / Geosyntec	4/3/19	0954	[illegible] / Pace	4/3/19	0954	
				M Dalman	4/3/19	1110	

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1-0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dalton Anderson

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/2/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO# : 2616925

PM: BM Due Date: 04/10/19

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

☐ Samples on ice, cooling process has begun

Cooler Temperature: 1.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/3/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616926

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616926

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616926

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616926001	**HGWA-1**	Water	04/02/19 10:02	04/03/19 11:10
2616926002	**HGWA-2**	Water	04/02/19 13:40	04/03/19 11:10

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616926

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616926001	**HGWA-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616926002	**HGWA-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616926

Sample: HGWA-1 **Lab ID: 2616926001** Collected: 04/02/19 10:02 Received: 04/03/19 11:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.426 ± 0.282 (0.418) C:85% T:NA**	pCi/L	04/12/19 09:46	13982-63-3	
Radium-228	EPA 9320	**0.313 ± 0.501 (1.09) C:74% T:89%**	pCi/L	04/16/19 19:38	15262-20-1	
Total Radium	Total Radium Calculation	**0.739 ± 0.783 (1.51)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616926

Sample: HGWA-2 **Lab ID: 2616926002** Collected: 04/02/19 13:40 Received: 04/03/19 11:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.472 ± 0.275 (0.348) C:88% T:NA**	pCi/L	04/12/19 09:46	13982-63-3	
Radium-228	EPA 9320	**0.179 ± 0.465 (1.04) C:77% T:89%**	pCi/L	04/16/19 18:32	15262-20-1	
Total Radium	Total Radium Calculation	**0.651 ± 0.740 (1.39)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616926

QC Batch: 337392 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616926001, 2616926002

METHOD BLANK: 1642069 Matrix: Water
Associated Lab Samples: 2616926001, 2616926002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.117 ± 0.178 (0.382) C:94% T:NA	pCi/L	04/12/19 08:07	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616926

QC Batch: 337342 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616926001, 2616926002

METHOD BLANK: 1641953 Matrix: Water
Associated Lab Samples: 2616926001, 2616926002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.245 ± 0.294 (0.748) C:78% T:79%	pCi/L	04/16/19 16:22	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616926

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616926

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616926001	**HGWA-1**	EPA 9315	337392		
2616926002	**HGWA-2**	EPA 9315	337392		
2616926001	**HGWA-1**	EPA 9320	337342		
2616926002	**HGWA-2**	EPA 9320	337342		
2616926001	**HGWA-1**	Total Radium Calculation	338683		
2616926002	**HGWA-2**	Total Radium Calculation	338683		

Pace Analytical

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWA-1	WT	G	04/02	9:48	04/02	10:02	16	8	2		3						Y	—			Y	Y	—
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

GW 04/02/19

WO#: 2616926

2616926

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
App IV (1): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium	Grant Walter / Geosyntec	04/02/19	1745	Malia Mosman / Georgia	4/2/19	1745				
	Julia Mosman / Georgia	4/2/19	1950	[illegible] / Geosyntec	4/2/19	1930				
	[illegible] / Geosyntec	4/3/19	0954	[illegible] Pace	4/3/19	0954				
				MDalman	4/3/19	1110	1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: [signature] DATE Signed: 04/02/19

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 of 2

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 Fax:
Requested Due Date:	Standard TAT

Section B Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency

State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWA-2	WT	G	4/2/19	13:10	4/2/19	13:40	[illegible]	5	2		3							Y	—		Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

DCA 4/2/2019

WO#: 2616926

PM: BM Due Date: 05/01/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
APP IV (1): Antimony, Arsenic, Barium,	Dalton Anderson (Geo)	4/2/19	17:45	Marlin Mulin / Geosyntec	4/2/19	1745
Beryllium, Cadmium, Chromium, Cobalt	Marlin Mulin / Geosyntec	4/2/19	1930	EB Law / Geosyntec	4/2/19	1930
Fluoride, Lead, Lithium, Molybdenum,	EB Law / Geosyntec	4/3/19	0954	[illegible] / Pace	4.3.19	0954
Selenium, Thallium				M Dalman	4/3/19	1110

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dalton Anderson

SIGNATURE of SAMPLER: [signature]

DATE Signed: 4/2/19

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.0	Y	Y	Y

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO# : 2616926

PM: BM **Due Date: 05/01/19**

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 1.0 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/3/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 10, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616933

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616933

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616933

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616933001	**MW-29**	Water	04/02/19 14:05	04/03/19 11:10
2616933002	**MW-20**	Water	04/02/19 15:54	04/03/19 11:10
2616933003	**MW-28D**	Water	04/02/19 16:30	04/03/19 11:10
2616933004	**HGWC-7**	Water	04/02/19 17:15	04/03/19 11:10

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616933

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616933001	**MW-29**	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616933002	**MW-20**	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616933003	**MW-28D**	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616933004	**HGWC-7**	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616933

Sample: MW-29 **Lab ID: 2616933001** Collected: 04/02/19 14:05 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 19:46	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 19:46	7440-38-2	
Barium	**0.078**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 19:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 19:46	7440-41-7	
Boron	**1.2**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 19:46	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 19:46	7440-43-9	
Calcium	**131**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 19:51	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 19:46	7440-47-3	
Cobalt	**0.00084J**	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 19:46	7440-48-4	
Lithium	**0.0021J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 19:46	7439-93-2	
Molybdenum	**0.0028J**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 19:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 19:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 19:46	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**548**	mg/L	25.0	10.0	1		04/09/19 18:49		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**80.9**	mg/L	2.5	0.24	10		04/08/19 18:53	16887-00-6	
Fluoride	**0.045J**	mg/L	0.30	0.029	1		04/05/19 20:15	16984-48-8	
Sulfate	**151**	mg/L	10.0	0.17	10		04/08/19 18:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616933

Sample: MW-20 **Lab ID: 2616933002** Collected: 04/02/19 15:54 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 19:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 19:57	7440-38-2	
Barium	**0.080**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 19:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 19:57	7440-41-7	
Boron	**0.11**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 19:57	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 19:57	7440-43-9	
Calcium	**109**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 20:03	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 19:57	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 19:57	7440-48-4	
Lithium	**0.0015J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 19:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 19:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 19:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 19:57	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**435**	mg/L	25.0	10.0	1		04/09/19 18:49		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**27.5**	mg/L	0.25	0.024	1		04/05/19 22:17	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/05/19 22:17	16984-48-8	
Sulfate	**122**	mg/L	10.0	0.17	10		04/08/19 19:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616933

Sample: MW-28D **Lab ID: 2616933003** Collected: 04/02/19 16:30 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 20:08	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 20:08	7440-38-2	
Barium	**0.37**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 20:08	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 20:08	7440-41-7	
Boron	**0.17**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 20:08	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 20:08	7440-43-9	
Calcium	**64.6**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 20:14	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 20:08	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 20:08	7440-48-4	
Lithium	**0.0052J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 20:08	7439-93-2	
Molybdenum	**0.028**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 20:08	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 20:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 20:08	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**350**	mg/L	25.0	10.0	1		04/09/19 18:49		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**44.0**	mg/L	0.25	0.024	1		04/05/19 22:42	16887-00-6	
Fluoride	**0.18J**	mg/L	0.30	0.029	1		04/05/19 22:42	16984-48-8	
Sulfate	**67.7**	mg/L	10.0	0.17	10		04/08/19 19:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616933

Sample: HGWC-7 **Lab ID: 2616933004** Collected: 04/02/19 17:15 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 20:31	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 20:31	7440-38-2	
Barium	**0.072**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 20:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 20:31	7440-41-7	
Boron	**0.99**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 20:31	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 20:31	7440-43-9	
Calcium	**101**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 20:37	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 20:31	7440-47-3	
Cobalt	**0.00069J**	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 20:31	7440-48-4	
Lithium	**0.0020J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 20:31	7439-93-2	
Molybdenum	**0.041**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 20:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 20:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 20:31	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**428**	mg/L	25.0	10.0	1		04/09/19 18:49		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**55.5**	mg/L	2.5	0.24	10		04/06/19 04:05	16887-00-6	
Fluoride	**0.097J**	mg/L	0.30	0.029	1		04/05/19 23:31	16984-48-8	
Sulfate	**127**	mg/L	10.0	0.17	10		04/06/19 04:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616933

QC Batch: 25906 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616933001, 2616933002, 2616933003, 2616933004

METHOD BLANK: 116817 Matrix: Water
Associated Lab Samples: 2616933001, 2616933002, 2616933003, 2616933004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/09/19 18:14	
Arsenic	mg/L	ND	0.0050	0.00057	04/09/19 18:14	
Barium	mg/L	ND	0.010	0.00078	04/09/19 18:14	
Beryllium	mg/L	ND	0.0030	0.000050	04/09/19 18:14	
Boron	mg/L	ND	0.040	0.0039	04/09/19 18:14	
Cadmium	mg/L	ND	0.0010	0.000093	04/09/19 18:14	
Calcium	mg/L	ND	0.50	0.014	04/09/19 18:14	
Chromium	mg/L	ND	0.010	0.0016	04/09/19 18:14	
Cobalt	mg/L	ND	0.010	0.00052	04/09/19 18:14	
Lithium	mg/L	ND	0.050	0.00097	04/09/19 18:14	
Molybdenum	mg/L	ND	0.010	0.0019	04/09/19 18:14	
Selenium	mg/L	ND	0.010	0.0014	04/09/19 18:14	
Thallium	mg/L	ND	0.0010	0.00014	04/09/19 18:14	

LABORATORY CONTROL SAMPLE: 116818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Boron	mg/L	1	0.94	94	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.096	96	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116819 116820

Parameter	Units	2616933004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	108	105	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Barium	mg/L	0.072	0.1	0.1	0.18	0.18	109	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616933

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116819 116820

Parameter	Units	2616933004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.092	0.092	92	92	75-125	1	20	
Boron	mg/L	0.99	1	1	1.9	2.0	92	96	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Calcium	mg/L	101	1	1	140	115	3930	1380	75-125	20	20	M6
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	105	103	75-125	2	20	
Cobalt	mg/L	0.00069J	0.1	0.1	0.10	0.10	102	100	75-125	2	20	
Lithium	mg/L	0.0020J	0.1	0.1	0.094	0.095	91	93	75-125	2	20	
Molybdenum	mg/L	0.041	0.1	0.1	0.15	0.15	112	110	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	105	102	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	95	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616933

QC Batch: 26059 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2616933001, 2616933002, 2616933003, 2616933004

LABORATORY CONTROL SAMPLE: 117667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	407	102	84-108	

SAMPLE DUPLICATE: 117668

Parameter	Units	2616931001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	670	21	10	D6

SAMPLE DUPLICATE: 117669

Parameter	Units	2617082006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	728	766	5	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616933

QC Batch: 25882 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616933001, 2616933002, 2616933003, 2616933004

METHOD BLANK: 116732 Matrix: Water
Associated Lab Samples: 2616933001, 2616933002, 2616933003, 2616933004

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 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.4	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

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616933

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616933

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616933001	**MW-29**	EPA 3005A	25906	EPA 6020B	25928
2616933002	**MW-20**	EPA 3005A	25906	EPA 6020B	25928
2616933003	**MW-28D**	EPA 3005A	25906	EPA 6020B	25928
2616933004	**HGWC-7**	EPA 3005A	25906	EPA 6020B	25928
2616933001	**MW-29**	SM 2540C	26059		
2616933002	**MW-20**	SM 2540C	26059		
2616933003	**MW-28D**	SM 2540C	26059		
2616933004	**HGWC-7**	SM 2540C	26059		
2616933001	**MW-29**	EPA 300.0	25882		
2616933002	**MW-20**	EPA 300.0	25882		
2616933003	**MW-28D**	EPA 300.0	25882		
2616933004	**HGWC-7**	EPA 300.0	25882		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 of 3

Section A – Required Client Information:		Section B – Required Project Information:		Section C – Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) (2)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-29	WT	G	04/02	13:52	04/02	14:05	16	5	2		3						Y	Y	—		Y	Y	—
2	MW-20	WT	G	04/02	15:35	04/02	15:54	19	5	2		3						Y	Y	—		Y	Y	—
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 04/02/19

WO# : 2616933

2616933

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
App III (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Grant Walter/Geosyntec	04/02/19	1745	Molly Mahan/Geosyntec	4/2/19	1745
	Molly Mahan/Geosyntec	4/2/19	1930	Will Lowe/Geosyntec	4/2/19	1930
	Will Lowe/Geosyntec	4/3/19	0954	Pace	4.3.19	0954
				Molly Mahan	4/3/19	1110

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: Grant Walter DATE Signed: 04/02/19

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-28D	WT	G	4/2/19	15:52	4/2/19	16:30	4.1	5	2		3						Y	—	Y	Y			—
2																								
3				DCA																				
4																								
5																								
6				DCA																				
7																								
8																								
9																								
10																								
11																								
12																								

4/2/2019

WO#: 2616933

PM: BM Due Date: 04/10/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
APP IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Dalton Anderson (GP)	4/2/19	17:45	Maelia Munton	4/2/19	1745				
	Maelia Munton / Georgia	4/2/19	1930	[illegible] / Geosyntec	4/2/19	1930				
	[illegible] / Geosyntec	4/3/19	0954	[illegible] / Pace	4/3/19	0954				
				M Zalmeau	4/3/19	1110	1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dalton Anderson

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/2/19

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

MATRIX CODES: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV) 2	Metals (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-7	W	T	4/2/19	1645	4/2/19	1715		5	2		3						Y	Y	—	Y	Y		—
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

NM 4/2/19

WO#: 2616933

PM: BM Due Date: 04/10/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
App. IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thalium	Noelia Muskus/Geosyntec	4/2/19	1930	Will Lowe/Geosyntec	4/2/19	1930				
	Will Lowe/Geosyntec	4/3/19	0954	Pace	4.3.19	0954				
				MDalman	4/3/19	1110	1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/2/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO# : 2616933

PM: BM | Due Date: 04/10/19

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 1.0

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/3/19 MP

Temp should be above freezing to 6°C

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616935

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616935

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616935

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616935001	**MW-29**	Water	04/02/19 14:05	04/03/19 11:10
2616935002	**MW-20**	Water	04/02/19 15:54	04/03/19 11:10
2616935003	**MW-28D**	Water	04/02/19 16:30	04/03/19 11:10
2616935004	**HGWC-7**	Water	04/02/19 17:15	04/03/19 11:10

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616935

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616935001	**MW-29**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616935002	**MW-20**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616935003	**MW-28D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616935004	**HGWC-7**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

Sample: MW-29 **Lab ID: 2616935001** Collected: 04/02/19 14:05 Received: 04/03/19 11:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.218 ± 0.272 (0.567) C:86% T:NA**	pCi/L	04/12/19 08:04	13982-63-3	
Radium-228	EPA 9320	**0.402 ± 0.408 (0.847) C:76% T:82%**	pCi/L	04/16/19 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**0.620 ± 0.680 (1.41)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

Sample: MW-20 **Lab ID: 2616935002** Collected: 04/02/19 15:54 Received: 04/03/19 11:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.780 ± 0.360 (0.385) C:89% T:NA**	pCi/L	04/12/19 08:05	13982-63-3	
Radium-228	EPA 9320	**0.238 ± 0.422 (0.922) C:73% T:76%**	pCi/L	04/16/19 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.02 ± 0.782 (1.31)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

Sample: MW-28D **Lab ID: 2616935003** Collected: 04/02/19 16:30 Received: 04/03/19 11:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.312 ± 0.266 (0.489) C:95% T:NA**	pCi/L	04/12/19 08:07	13982-63-3	
Radium-228	EPA 9320	**0.167 ± 0.434 (0.966) C:70% T:88%**	pCi/L	04/16/19 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**0.479 ± 0.700 (1.46)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

Sample: HGWC-7 **Lab ID: 2616935004** Collected: 04/02/19 17:15 Received: 04/03/19 11:10 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 ± 0.341 (0.626) C:88% T:NA**	pCi/L	04/12/19 08:08	13982-63-3	
Radium-228	EPA 9320	**0.420 ± 0.405 (0.834) C:76% T:85%**	pCi/L	04/16/19 16:22	15262-20-1	
Total Radium	Total Radium Calculation	**0.865 ± 0.746 (1.46)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

QC Batch: 337392 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616935003, 2616935004

METHOD BLANK: 1642069 Matrix: Water
Associated Lab Samples: 2616935003, 2616935004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.117 ± 0.178 (0.382) C:94% T:NA	pCi/L	04/12/19 08:07	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

QC Batch: 337341 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616935001, 2616935002, 2616935003

METHOD BLANK: 1641952 Matrix: Water
Associated Lab Samples: 2616935001, 2616935002, 2616935003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.438 ± 0.343 (0.679) C:77% T:88%	pCi/L	04/16/19 13:06	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

QC Batch: 337342 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616935004

METHOD BLANK: 1641953 Matrix: Water
Associated Lab Samples: 2616935004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.245 ± 0.294 (0.748) C:78% T:79%	pCi/L	04/16/19 16:22	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616935

QC Batch: 337391 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616935001, 2616935002

METHOD BLANK: 1642068 Matrix: Water
Associated Lab Samples: 2616935001, 2616935002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.148 ± 0.194 (0.401) C:93% T:NA	pCi/L	04/12/19 08:12	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616935

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616935

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616935001	**MW-29**	EPA 9315	337391		
2616935002	**MW-20**	EPA 9315	337391		
2616935003	**MW-28D**	EPA 9315	337392		
2616935004	**HGWC-7**	EPA 9315	337392		
2616935001	**MW-29**	EPA 9320	337341		
2616935002	**MW-20**	EPA 9320	337341		
2616935003	**MW-28D**	EPA 9320	337341		
2616935004	**HGWC-7**	EPA 9320	337342		
2616935001	**MW-29**	Total Radium Calculation	338683		
2616935002	**MW-20**	Total Radium Calculation	338683		
2616935003	**MW-28D**	Total Radium Calculation	338683		
2616935004	**HGWC-7**	Total Radium Calculation	338683		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) (2)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-29	WT	G	04/02	13:52	04/02	14:05	16	5	2		3						Y	Y	—		Y	Y	—
2	MW-20	WT	G	04/02	15:35	04/02	15:54	19	5	2		3						Y	Y	—		Y	Y	—
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 04/02/19

WO#: 2616935

2616935

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App III (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Grant Walter/Geosyntec	04/02/19	1745	Mallie Markham/Geosyntec	4/2/19	1745	
	Mallie Markham/Geosyntec	4/2/19	1930	Will Lowe/Geosyntec	4/2/19	1930	
	Will Lowe/Geosyntec	4/3/19	0954	[signature] Pace	4/3/19	0954	
				[signature]	4/3/19	1110	1.0 / 7 / Y / Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: [signature] DATE Signed: 04/02/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N): Y/N

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test: Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-28D	WT	G	4/2/19	15:52	4/2/19	16:39	14.7	5	2		3						Y	—			Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

DCA

4/2/2019

DCA

WO#: 2616935

PM: BM Due Date: 05/01/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
APP IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Dalton Anderson (GP)	4/2/19	17:45	Maelia Mumbon	4/2/19	1745	
	Maelia Mumbon / Geosyntec	4/2/19	1930	Ed Blanc / Geosyntec	4/2/19	1930	
	Ed Blanc / Geosyntec	4/3/19	0954	[illegible] / Pace	4/3/19	0954	
				[illegible]	4/3/19	1110	1.0 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dalton Anderson

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/2/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.0	Y	Y	Y

Pace Analytical

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency:

State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) 2	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-7	W	T	4/2/19	1645	4/2/19	1715		5	2		3							Y	—	→	Y	Y	–
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/2/19

WO#: 2616935
PM: BM Due Date: 05/01/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS: App. IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, thalium

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Martin [signature] / Geosyntec	4/2/19	1930	[signature] / Geosyntec	4/2/19	1930
[signature] / Geosyntec	4/3/19	0954	[signature] / Pace	4.3.19	0954
			M Dalman	4/3/19	1110

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/2/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616935

Due Date: 05/01/19

PM: BM

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 1.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/3/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616997

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,

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616997

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616997

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616997001	**HGWC-9**	Water	04/03/19 10:05	04/04/19 11:00
2616997002	**MW-26D**	Water	04/03/19 11:38	04/04/19 11:00
2616997003	**MW-19**	Water	04/03/19 14:50	04/04/19 11:00
2616997004	**MW-5**	Water	04/03/19 13:12	04/04/19 11:00
2616997005	**HGWC-8**	Water	04/03/19 11:24	04/04/19 11:00
2616997006	**HGWC-10**	Water	04/03/19 13:38	04/04/19 11:00
2616997007	**MW-6**	Water	04/03/19 15:10	04/04/19 11:00
2616997008	**MW-7**	Water	04/03/19 10:45	04/04/19 11:00
2616997009	**HGWC-11**	Water	04/03/19 12:40	04/04/19 11:00
2616997010	**HGWC-12**	Water	04/03/19 14:20	04/04/19 11:00
2616997011	**MW-25D**	Water	04/03/19 16:15	04/04/19 11:00

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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616997

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616997001	HGWC-9	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997002	MW-26D	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997003	MW-19	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997004	MW-5	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997005	HGWC-8	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997006	HGWC-10	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997007	MW-6	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997008	MW-7	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997009	HGWC-11	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997010	HGWC-12	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616997011	MW-25D	EPA 6020B	CSW	13
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: HGWC-9 **Lab ID: 2616997001** Collected: 04/03/19 10:05 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 22:09	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 22:09	7440-38-2	
Barium	**0.12**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 22:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 22:09	7440-41-7	
Boron	**2.3**	mg/L	2.0	0.20	50	04/05/19 15:23	04/09/19 22:14	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 22:09	7440-43-9	
Calcium	**164**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 22:14	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 22:09	7440-47-3	
Cobalt	**0.00069J**	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 22:09	7440-48-4	
Lithium	**0.0040J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 22:09	7439-93-2	
Molybdenum	**0.030**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 22:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 22:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 22:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**673**	mg/L	25.0	10.0	1		04/10/19 16:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**130**	mg/L	2.5	0.24	10		04/05/19 20:32	16887-00-6	M1
Fluoride	**0.14J**	mg/L	0.30	0.029	1		04/05/19 14:08	16984-48-8	
Sulfate	**214**	mg/L	10.0	0.17	10		04/05/19 20:32	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: MW-26D **Lab ID: 2616997002** Collected: 04/03/19 11:38 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 22:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 22:20	7440-38-2	
Barium	**0.12**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 22:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 22:20	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 22:20	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 22:20	7440-43-9	
Calcium	**122**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 22:26	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 22:20	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 22:20	7440-48-4	
Lithium	**0.0034J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 22:20	7439-93-2	
Molybdenum	**0.0083J**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 22:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 22:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 22:20	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**493**	mg/L	25.0	10.0	1		04/10/19 16:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**90.6**	mg/L	2.5	0.24	10		04/11/19 13:12	16887-00-6	
Fluoride	**0.044J**	mg/L	0.30	0.029	1		04/05/19 15:12	16984-48-8	
Sulfate	**131**	mg/L	10.0	0.17	10		04/11/19 13:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: MW-19 **Lab ID: 2616997003** Collected: 04/03/19 14:50 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 22:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 22:43	7440-38-2	
Barium	**0.050**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 22:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 22:43	7440-41-7	
Boron	**0.63**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 22:43	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 22:43	7440-43-9	
Calcium	**74.9**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 22:49	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 22:43	7440-47-3	
Cobalt	**0.036**	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 22:43	7440-48-4	
Lithium	**0.0061J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 22:43	7439-93-2	
Molybdenum	**0.040**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 22:43	7439-98-7	
Selenium	**0.0070J**	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 22:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 22:43	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**310**	mg/L	25.0	10.0	1		04/10/19 16:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**19.5**	mg/L	0.25	0.024	1		04/05/19 15:34	16887-00-6	
Fluoride	**0.19J**	mg/L	0.30	0.029	1		04/05/19 15:34	16984-48-8	
Sulfate	**105**	mg/L	10.0	0.17	10		04/11/19 13:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: MW-5 **Lab ID: 2616997004** Collected: 04/03/19 13:12 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 22:55	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 22:55	7440-38-2	
Barium	**0.049**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 22:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 22:55	7440-41-7	
Boron	**0.030J**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 22:55	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 22:55	7440-43-9	
Calcium	**82.0**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 23:00	7440-70-2	
Chromium	**0.0030J**	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 22:55	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 22:55	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 22:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 22:55	7439-98-7	
Selenium	**0.0027J**	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 22:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 22:55	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**396**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.8**	mg/L	0.25	0.024	1		04/05/19 15:55	16887-00-6	
Fluoride	**0.049J**	mg/L	0.30	0.029	1		04/05/19 15:55	16984-48-8	
Sulfate	**218**	mg/L	10.0	0.17	10		04/11/19 13:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: HGWC-8 **Lab ID: 2616997005** Collected: 04/03/19 11:24 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 23:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 23:06	7440-38-2	
Barium	**0.066**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 23:06	7440-39-3	
Beryllium	**0.000074J**	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 23:06	7440-41-7	
Boron	**2.8**	mg/L	2.0	0.20	50	04/05/19 15:23	04/09/19 23:12	7440-42-8	
Cadmium	**0.00032J**	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 23:06	7440-43-9	
Calcium	**125**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 23:12	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 23:06	7440-47-3	
Cobalt	**0.0019J**	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 23:06	7440-48-4	
Lithium	**0.0025J**	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 23:06	7439-93-2	
Molybdenum	**0.50**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 23:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 23:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 23:06	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**543**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**91.6**	mg/L	2.5	0.24	10		04/05/19 20:53	16887-00-6	
Fluoride	**0.63**	mg/L	0.30	0.029	1		04/05/19 16:16	16984-48-8	
Sulfate	**194**	mg/L	10.0	0.17	10		04/05/19 20:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: HGWC-10 **Lab ID: 2616997006** Collected: 04/03/19 13:38 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/05/19 15:23	04/09/19 23:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/05/19 15:23	04/09/19 23:17	7440-38-2	
Barium	**0.076**	mg/L	0.010	0.00078	1	04/05/19 15:23	04/09/19 23:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/05/19 15:23	04/09/19 23:17	7440-41-7	
Boron	**0.66**	mg/L	0.040	0.0039	1	04/05/19 15:23	04/09/19 23:17	7440-42-8	
Cadmium	**0.00010J**	mg/L	0.0010	0.000093	1	04/05/19 15:23	04/09/19 23:17	7440-43-9	
Calcium	**137**	mg/L	25.0	0.69	50	04/05/19 15:23	04/09/19 23:23	7440-70-2	
Chromium	**0.020**	mg/L	0.010	0.0016	1	04/05/19 15:23	04/09/19 23:17	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/05/19 15:23	04/09/19 23:17	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	04/05/19 15:23	04/09/19 23:17	7439-93-2	
Molybdenum	**0.0021J**	mg/L	0.010	0.0019	1	04/05/19 15:23	04/09/19 23:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/05/19 15:23	04/09/19 23:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/05/19 15:23	04/09/19 23:17	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**525**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**49.3**	mg/L	0.25	0.024	1		04/05/19 16:37	16887-00-6	
Fluoride	**0.082J**	mg/L	0.30	0.029	1		04/05/19 16:37	16984-48-8	
Sulfate	**159**	mg/L	10.0	0.17	10		04/05/19 21:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: MW-6 **Lab ID: 2616997007** Collected: 04/03/19 15:10 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/08/19 11:33	04/10/19 01:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/08/19 11:33	04/10/19 01:00	7440-38-2	
Barium	**0.090**	mg/L	0.010	0.00078	1	04/08/19 11:33	04/10/19 01:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/08/19 11:33	04/10/19 01:00	7440-41-7	
Boron	**0.67**	mg/L	0.040	0.0039	1	04/08/19 11:33	04/10/19 01:00	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/08/19 11:33	04/10/19 01:00	7440-43-9	
Calcium	**178**	mg/L	25.0	0.69	50	04/08/19 11:33	04/10/19 10:12	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/08/19 11:33	04/10/19 01:00	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/08/19 11:33	04/10/19 01:00	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	04/08/19 11:33	04/10/19 01:00	7439-93-2	
Molybdenum	**0.0021J**	mg/L	0.010	0.0019	1	04/08/19 11:33	04/10/19 01:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/08/19 11:33	04/10/19 01:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/08/19 11:33	04/10/19 01:00	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**437**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**60.9**	mg/L	2.5	0.24	10		04/11/19 14:20	16887-00-6	
Fluoride	**0.15J**	mg/L	0.30	0.029	1		04/05/19 16:59	16984-48-8	
Sulfate	**228**	mg/L	10.0	0.17	10		04/11/19 14:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: MW-7 **Lab ID: 2616997008** Collected: 04/03/19 10:45 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/08/19 11:33	04/10/19 01:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/08/19 11:33	04/10/19 01:23	7440-38-2	
Barium	**0.058**	mg/L	0.010	0.00078	1	04/08/19 11:33	04/10/19 01:23	7440-39-3	
Beryllium	**0.000051J**	mg/L	0.0030	0.000050	1	04/08/19 11:33	04/10/19 01:23	7440-41-7	
Boron	**0.094**	mg/L	0.040	0.0039	1	04/08/19 11:33	04/10/19 01:23	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/08/19 11:33	04/10/19 01:23	7440-43-9	
Calcium	**50.2**	mg/L	25.0	0.69	50	04/08/19 11:33	04/10/19 10:29	7440-70-2	
Chromium	**0.0023J**	mg/L	0.010	0.0016	1	04/08/19 11:33	04/10/19 01:23	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/08/19 11:33	04/10/19 01:23	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	04/08/19 11:33	04/10/19 01:23	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/08/19 11:33	04/10/19 01:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/08/19 11:33	04/10/19 01:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/08/19 11:33	04/10/19 01:23	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**213**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.6**	mg/L	0.25	0.024	1		04/05/19 17:20	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/05/19 17:20	16984-48-8	
Sulfate	**75.3**	mg/L	10.0	0.17	10		04/11/19 13:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: HGWC-11 **Lab ID: 2616997009** Collected: 04/03/19 12:40 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/08/19 11:33	04/10/19 01:29	7440-36-0	
Arsenic	**0.00094J**	mg/L	0.0050	0.00057	1	04/08/19 11:33	04/10/19 01:29	7440-38-2	
Barium	**0.023**	mg/L	0.010	0.00078	1	04/08/19 11:33	04/10/19 01:29	7440-39-3	
Beryllium	**0.00017J**	mg/L	0.0030	0.000050	1	04/08/19 11:33	04/10/19 01:29	7440-41-7	
Boron	**0.23**	mg/L	0.040	0.0039	1	04/08/19 11:33	04/10/19 01:29	7440-42-8	
Cadmium	**0.000096J**	mg/L	0.0010	0.000093	1	04/08/19 11:33	04/10/19 01:29	7440-43-9	
Calcium	**112**	mg/L	25.0	0.69	50	04/08/19 11:33	04/10/19 10:35	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/08/19 11:33	04/10/19 01:29	7440-47-3	
Cobalt	**0.0018J**	mg/L	0.010	0.00052	1	04/08/19 11:33	04/10/19 01:29	7440-48-4	
Lithium	ND	mg/L	0.050	0.00097	1	04/08/19 11:33	04/10/19 01:29	7439-93-2	
Molybdenum	**0.010**	mg/L	0.010	0.0019	1	04/08/19 11:33	04/10/19 01:29	7439-98-7	
Selenium	**0.016**	mg/L	0.010	0.0014	1	04/08/19 11:33	04/10/19 01:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/08/19 11:33	04/10/19 01:29	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**483**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.6**	mg/L	0.25	0.024	1		04/05/19 19:07	16887-00-6	
Fluoride	**0.43**	mg/L	0.30	0.029	1		04/05/19 19:07	16984-48-8	
Sulfate	**298**	mg/L	10.0	0.17	10		04/11/19 14:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: HGWC-12 **Lab ID: 2616997010** Collected: 04/03/19 14:20 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/08/19 11:33	04/10/19 01:35	7440-36-0	
Arsenic	**0.0022J**	mg/L	0.0050	0.00057	1	04/08/19 11:33	04/10/19 01:35	7440-38-2	
Barium	**0.077**	mg/L	0.010	0.00078	1	04/08/19 11:33	04/10/19 01:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/08/19 11:33	04/10/19 01:35	7440-41-7	
Boron	**1.8**	mg/L	0.040	0.0039	1	04/08/19 11:33	04/10/19 01:35	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/08/19 11:33	04/10/19 01:35	7440-43-9	
Calcium	**114**	mg/L	25.0	0.69	50	04/08/19 11:33	04/10/19 10:40	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/08/19 11:33	04/10/19 01:35	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.010	0.00052	1	04/08/19 11:33	04/10/19 01:35	7440-48-4	
Lithium	**0.0066J**	mg/L	0.050	0.00097	1	04/08/19 11:33	04/10/19 01:35	7439-93-2	
Molybdenum	**0.049**	mg/L	0.010	0.0019	1	04/08/19 11:33	04/10/19 01:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/08/19 11:33	04/10/19 01:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/08/19 11:33	04/10/19 01:35	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**462**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**62.8**	mg/L	1.2	0.12	5		04/05/19 21:57	16887-00-6	
Fluoride	**0.30J**	mg/L	0.30	0.029	1		04/05/19 19:28	16984-48-8	
Sulfate	**176**	mg/L	5.0	0.085	5		04/05/19 21:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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110 Technology Parkway
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2616997

Sample: MW-25D **Lab ID: 2616997011** Collected: 04/03/19 16:15 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								
Antimony	ND	mg/L	0.0030	0.00078	1	04/08/19 11:33	04/10/19 01:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/08/19 11:33	04/10/19 01:41	7440-38-2	
Barium	**0.38**	mg/L	0.010	0.00078	1	04/08/19 11:33	04/10/19 01:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/08/19 11:33	04/10/19 01:41	7440-41-7	
Boron	**0.37**	mg/L	0.040	0.0039	1	04/08/19 11:33	04/10/19 01:41	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/08/19 11:33	04/10/19 01:41	7440-43-9	
Calcium	**25.4**	mg/L	25.0	0.69	50	04/08/19 11:33	04/10/19 10:46	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/08/19 11:33	04/10/19 01:41	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/08/19 11:33	04/10/19 01:41	7440-48-4	
Lithium	**0.047J**	mg/L	0.050	0.00097	1	04/08/19 11:33	04/10/19 01:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/08/19 11:33	04/10/19 01:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/08/19 11:33	04/10/19 01:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/08/19 11:33	04/10/19 01:41	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**15.0J**	mg/L	25.0	10.0	1		04/10/19 16:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**32.0**	mg/L	0.25	0.024	1		04/05/19 20:11	16887-00-6	
Fluoride	**1.6**	mg/L	0.30	0.029	1		04/05/19 20:11	16984-48-8	
Sulfate	**53.0**	mg/L	10.0	0.17	10		04/11/19 15:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616997

QC Batch: 25906 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616997001, 2616997002, 2616997003, 2616997004, 2616997005, 2616997006

METHOD BLANK: 116817 Matrix: Water
Associated Lab Samples: 2616997001, 2616997002, 2616997003, 2616997004, 2616997005, 2616997006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/09/19 18:14	
Arsenic	mg/L	ND	0.0050	0.00057	04/09/19 18:14	
Barium	mg/L	ND	0.010	0.00078	04/09/19 18:14	
Beryllium	mg/L	ND	0.0030	0.000050	04/09/19 18:14	
Boron	mg/L	ND	0.040	0.0039	04/09/19 18:14	
Cadmium	mg/L	ND	0.0010	0.000093	04/09/19 18:14	
Calcium	mg/L	ND	0.50	0.014	04/09/19 18:14	
Chromium	mg/L	ND	0.010	0.0016	04/09/19 18:14	
Cobalt	mg/L	ND	0.010	0.00052	04/09/19 18:14	
Lithium	mg/L	ND	0.050	0.00097	04/09/19 18:14	
Molybdenum	mg/L	ND	0.010	0.0019	04/09/19 18:14	
Selenium	mg/L	ND	0.010	0.0014	04/09/19 18:14	
Thallium	mg/L	ND	0.0010	0.00014	04/09/19 18:14	

LABORATORY CONTROL SAMPLE: 116818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Boron	mg/L	1	0.94	94	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.096	96	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116819 116820

Parameter	Units	2616933004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	108	105	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Barium	mg/L	0.072	0.1	0.1	0.18	0.18	109	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616997

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116819 116820

Parameter	Units	2616933004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.092	0.092	92	92	75-125	1	20	
Boron	mg/L	0.99	1	1	1.9	2.0	92	96	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Calcium	mg/L	101	1	1	140	115	3930	1380	75-125	20	20	M6
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	105	103	75-125	2	20	
Cobalt	mg/L	0.00069J	0.1	0.1	0.10	0.10	102	100	75-125	2	20	
Lithium	mg/L	0.0020J	0.1	0.1	0.094	0.095	91	93	75-125	2	20	
Molybdenum	mg/L	0.041	0.1	0.1	0.15	0.15	112	110	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	105	102	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	95	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616997

QC Batch: 25997 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2616997007, 2616997008, 2616997009, 2616997010, 2616997011

METHOD BLANK: 117367 Matrix: Water
Associated Lab Samples: 2616997007, 2616997008, 2616997009, 2616997010, 2616997011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/09/19 23:46	
Arsenic	mg/L	ND	0.0050	0.00057	04/09/19 23:46	
Barium	mg/L	ND	0.010	0.00078	04/09/19 23:46	
Beryllium	mg/L	ND	0.0030	0.000050	04/09/19 23:46	
Boron	mg/L	ND	0.040	0.0039	04/09/19 23:46	
Cadmium	mg/L	ND	0.0010	0.000093	04/09/19 23:46	
Calcium	mg/L	ND	0.50	0.014	04/09/19 23:46	
Chromium	mg/L	ND	0.010	0.0016	04/09/19 23:46	
Cobalt	mg/L	ND	0.010	0.00052	04/09/19 23:46	
Lithium	mg/L	ND	0.050	0.00097	04/09/19 23:46	
Molybdenum	mg/L	ND	0.010	0.0019	04/09/19 23:46	
Selenium	mg/L	ND	0.010	0.0014	04/09/19 23:46	
Thallium	mg/L	ND	0.0010	0.00014	04/09/19 23:46	

LABORATORY CONTROL SAMPLE: 117368

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.094	94	80-120	
Boron	mg/L	1	0.95	95	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.10	104	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.094	94	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117369 117370

Parameter	Units	2616997007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Barium	mg/L	0.090	0.1	0.1	0.18	0.18	90	93	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616997

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117369 117370

Parameter	Units	2616997007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.090	0.088	90	88	75-125	2	20	
Boron	mg/L	0.67	1	1	1.5	1.5	85	86	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Calcium	mg/L	178	1	1	173	179	-513	1	75-125	3	20	
Chromium	mg/L	ND	0.1	0.1	0.099	0.10	99	102	75-125	3	20	
Cobalt	mg/L	ND	0.1	0.1	0.096	0.097	95	97	75-125	2	20	
Lithium	mg/L	ND	0.1	0.1	0.090	0.091	90	90	75-125	0	20	
Molybdenum	mg/L	0.0021J	0.1	0.1	0.10	0.11	103	104	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.097	0.10	97	100	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616997

QC Batch: 26129 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2616997001, 2616997002, 2616997003, 2616997004, 2616997005, 2616997006, 2616997007, 2616997008, 2616997009, 2616997010, 2616997011

LABORATORY CONTROL SAMPLE: 117954

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 118270

Parameter	Units	2616972001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	290	303	4	10	

SAMPLE DUPLICATE: 118610

Parameter	Units	2616992002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	369	359	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2616997

QC Batch: 25883 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2616997001, 2616997002, 2616997003, 2616997004, 2616997005, 2616997006, 2616997007, 2616997008, 2616997009, 2616997010, 2616997011

METHOD BLANK: 116739 Matrix: Water
Associated Lab Samples: 2616997001, 2616997002, 2616997003, 2616997004, 2616997005, 2616997006, 2616997007, 2616997008, 2616997009, 2616997010, 2616997011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.057J	0.25	0.024	04/05/19 13:26	
Fluoride	mg/L	ND	0.30	0.029	04/05/19 13:26	
Sulfate	mg/L	0.026J	1.0	0.017	04/05/19 13:26	

LABORATORY CONTROL SAMPLE: 116740

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.1	101	90-110	
Sulfate	mg/L	10	10.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116741 116742

Parameter	Units	2616997001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	130	10	10	111	111	-190	-190	90-110	0	15	E,M1
Fluoride	mg/L	0.14J	10	10	10.4	10.2	103	100	90-110	2	15	
Sulfate	mg/L	214	10	10	165	165	-494	-494	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE: 116743

Parameter	Units	2616997002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	90.6	10	90.3	-2	90-110	E
Fluoride	mg/L	0.044J	10	9.2	92	90-110	
Sulfate	mg/L	131	10	122	-98	90-110	E

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2616997

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616997

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616997001	**HGWC-9**	EPA 3005A	25906	EPA 6020B	25928
2616997002	**MW-26D**	EPA 3005A	25906	EPA 6020B	25928
2616997003	**MW-19**	EPA 3005A	25906	EPA 6020B	25928
2616997004	**MW-5**	EPA 3005A	25906	EPA 6020B	25928
2616997005	**HGWC-8**	EPA 3005A	25906	EPA 6020B	25928
2616997006	**HGWC-10**	EPA 3005A	25906	EPA 6020B	25928
2616997007	**MW-6**	EPA 3005A	25997	EPA 6020B	26011
2616997008	**MW-7**	EPA 3005A	25997	EPA 6020B	26011
2616997009	**HGWC-11**	EPA 3005A	25997	EPA 6020B	26011
2616997010	**HGWC-12**	EPA 3005A	25997	EPA 6020B	26011
2616997011	**MW-25D**	EPA 3005A	25997	EPA 6020B	26011
2616997001	**HGWC-9**	SM 2540C	26129		
2616997002	**MW-26D**	SM 2540C	26129		
2616997003	**MW-19**	SM 2540C	26129		
2616997004	**MW-5**	SM 2540C	26129		
2616997005	**HGWC-8**	SM 2540C	26129		
2616997006	**HGWC-10**	SM 2540C	26129		
2616997007	**MW-6**	SM 2540C	26129		
2616997008	**MW-7**	SM 2540C	26129		
2616997009	**HGWC-11**	SM 2540C	26129		
2616997010	**HGWC-12**	SM 2540C	26129		
2616997011	**MW-25D**	SM 2540C	26129		
2616997001	**HGWC-9**	EPA 300.0	25883		
2616997002	**MW-26D**	EPA 300.0	25883		
2616997003	**MW-19**	EPA 300.0	25883		
2616997004	**MW-5**	EPA 300.0	25883		
2616997005	**HGWC-8**	EPA 300.0	25883		
2616997006	**HGWC-10**	EPA 300.0	25883		
2616997007	**MW-6**	EPA 300.0	25883		
2616997008	**MW-7**	EPA 300.0	25883		
2616997009	**HGWC-11**	EPA 300.0	25883		
2616997010	**HGWC-12**	EPA 300.0	25883		
2616997011	**MW-25D**	EPA 300.0	25883		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-9	WT	G	04/03	9:43	04/03	10:05	18	5	2		3						Y	Y	—	—	Y	Y	—
2	MW-26D	WT	G	04/03	11:15	04/03	11:38	18	5	2		3						Y	Y	—	—	Y	Y	—
3	MW-19	WT	G	04/03	14:27	04/03	14:50	19	5	2		3						Y	Y	—	—	Y	Y	—
4	MW-5	WT	G	04/03	12:55	04/03	13:12	19	5	2		3						Y	Y	—	—	Y	Y	—
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 04/03/19

WO#: 2616997

2616997

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
App IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Grant Walter / Geosyntec	04/03/19	1810	Marlin Winton / Geosyntec	4/3/19	1810				
	Marlin Winton / Geosyntec	4/3/19	1900	Tom Glover / Geosyntec	4/5/19	1400				
	Tom Glover / Geosyntec	4/4/19		Pace	4.4.19	0905				
				M Zahnen	4/4/19	1100	3.5	Y	Y	Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Walter

SIGNATURE of SAMPLER: Grant Walter DATE Signed: 04/03/19

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: | State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-8	WT	G	4/3/19	1054	4/3/19	1124	18	5	2		3						Y		—		Y	Y	—
2	HGWC-10	WT	G	4/3/19	1318	4/3/19	1338	19	5	2		3						Y		—		Y	Y	—
3	MW-6	WT	G	4/3/19	1450	4/3/19	1510	20	5	2		3						Y		—		Y	Y	—
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

4/3/19

WO#: 2616997

PM: BM Due Date: 04/11/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App. IV (2): Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus/Geosyntec	4/3/19	1900	Geosyntec	4/3/19	1900	
	Geosyntec	4/4/19		Pace	4.4.19	0905	
				MCalman	4/4/19	1100	3.5 Y Y Y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Noelia Muskus		
SIGNATURE of SAMPLER:	Noelia Muskus	DATE Signed:	4/3/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

CHAIN-OF-CUSTODY / Analytical Request Document

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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 Fax
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348806
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-7	WT	G	4/3/19	10:25	4/3/19	10:45	17.75	2			3						Y	Y	—	—	Y	Y	—
2	HGWC-11	WT	G	4/3/19	12:20	4/3/19	12:40	17.75	2			3						Y	Y	—	—	Y	Y	—
3	HGWC-12	WT	G	4/3/19	13:58	4/3/19	14:20	18.57	2			3						Y	Y	—	—	Y	Y	—
4	MW-25D	WT	G	4/3/19	15:46	4/3/19	16:15	18.75	2			3						Y	Y	—	—	Y	Y	—
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

TCA

4/3/19

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

WO#: 2616997

PM: BM Due Date: 04/11/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
APP III + IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Dalton Anderson (SCS)	4/3/19	18:10	Maulik Mumbai / Geosyntec	4/3/19	1810				
	Maulik Mumbai / Geosyntec	4/3/19	1900	Cliff Love / Geosyntec	4/3/19	1900				
	Cliff Love / Geosyntec	4/4/19		Pace	4.4.19	0908				
					4/4/19	1100	3.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dalton Anderson

SIGNATURE of SAMPLER: DA

DATE Signed: 4/3/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #:

WO# : 2616997

PM: BM Due Date: 04/11/19

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

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: 4/4/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 26, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2616998

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,

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

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CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2616998

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

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SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2616998

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616998001	**HGWC-9**	Water	04/03/19 10:05	04/04/19 11:00
2616998002	**MW-26D**	Water	04/03/19 11:38	04/04/19 11:00
2616998003	**MW-19**	Water	04/03/19 14:50	04/04/19 11:00
2616998004	**MW-5**	Water	04/03/19 13:12	04/04/19 11:00
2616998005	**HGWC-8**	Water	04/03/19 11:24	04/04/19 11:00
2616998006	**HGWC-10**	Water	04/03/19 13:38	04/04/19 11:00
2616998007	**MW-6**	Water	04/03/19 15:10	04/04/19 11:00
2616998008	**MW-7**	Water	04/03/19 10:45	04/04/19 11:00
2616998009	**HGWC-11**	Water	04/03/19 12:40	04/04/19 11:00
2616998010	**HGWC-12**	Water	04/03/19 14:20	04/04/19 11:00
2616998011	**MW-25D**	Water	04/03/19 16:15	04/04/19 11:00

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2616998

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2616998001	**HGWC-9**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998002	**MW-26D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998003	**MW-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998004	**MW-5**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998005	**HGWC-8**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998006	**HGWC-10**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998007	**MW-6**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998008	**MW-7**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998009	**HGWC-11**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998010	**HGWC-12**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2616998011	**MW-25D**	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
Pace Project No.: 2616998

Sample: HGWC-9 **Lab ID: 2616998001** Collected: 04/03/19 10:05 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.147 ± 0.211 (0.452) C:86% T:NA**	pCi/L	04/12/19 09:46	13982-63-3	
Radium-228	EPA 9320	**0.00881 ± 0.442 (1.03) C:76% T:82%**	pCi/L	04/16/19 18:33	15262-20-1	
Total Radium	Total Radium Calculation	**0.156 ± 0.653 (1.48)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: MW-26D **Lab ID: 2616998002** Collected: 04/03/19 11:38 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.205 ± 0.207 (0.378) C:94% T:NA**	pCi/L	04/12/19 09:36	13982-63-3	
Radium-228	EPA 9320	**-0.0700 ± 0.421 (1.00) C:77% T:80%**	pCi/L	04/16/19 18:37	15262-20-1	
Total Radium	Total Radium Calculation	**0.205 ± 0.628 (1.38)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: MW-19 **Lab ID: 2616998003** Collected: 04/03/19 14:50 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.276 ± 0.229 (0.387) C:89% T:NA**	pCi/L	04/12/19 09:49	13982-63-3	
Radium-228	EPA 9320	**0.608 ± 0.805 (1.72) C:77% T:83%**	pCi/L	04/16/19 21:13	15262-20-1	
Total Radium	Total Radium Calculation	**0.884 ± 1.03 (2.11)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: MW-5 **Lab ID: 2616998004** Collected: 04/03/19 13:12 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.607 ± 0.360 (0.575) C:92% T:NA**	pCi/L	04/12/19 09:37	13982-63-3	
Radium-228	EPA 9320	**0.325 ± 0.807 (1.79) C:79% T:83%**	pCi/L	04/16/19 21:13	15262-20-1	
Total Radium	Total Radium Calculation	**0.932 ± 1.17 (2.37)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: HGWC-8 **Lab ID: 2616998005** Collected: 04/03/19 11:24 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.291 ± 0.241 (0.415) C:92% T:NA**	pCi/L	04/12/19 09:46	13982-63-3	
Radium-228	EPA 9320	**0.594 ± 0.544 (1.11) C:77% T:79%**	pCi/L	04/16/19 18:37	15262-20-1	
Total Radium	Total Radium Calculation	**0.885 ± 0.785 (1.53)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: HGWC-10 **Lab ID: 2616998006** Collected: 04/03/19 13:38 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**1.80 ± 0.587 (0.524) C:83% T:NA**	pCi/L	04/12/19 09:39	13982-63-3	
Radium-228	EPA 9320	**0.0170 ± 0.700 (1.61) C:80% T:80%**	pCi/L	04/16/19 21:13	15262-20-1	
Total Radium	Total Radium Calculation	**1.82 ± 1.29 (2.13)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: MW-6 **Lab ID: 2616998007** Collected: 04/03/19 15:10 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.789 ± 0.376 (0.497) C:91% T:NA**	pCi/L	04/12/19 09:49	13982-63-3	
Radium-228	EPA 9320	**0.0827 ± 0.817 (1.86) C:79% T:80%**	pCi/L	04/16/19 21:13	15262-20-1	
Total Radium	Total Radium Calculation	**0.872 ± 1.19 (2.36)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: MW-7 **Lab ID: 2616998008** Collected: 04/03/19 10:45 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.310 ± 0.233 (0.379) C:99% T:NA**	pCi/L	04/12/19 09:46	13982-63-3	
Radium-228	EPA 9320	**0.741 ± 0.545 (1.07) C:75% T:84%**	pCi/L	04/16/19 18:35	15262-20-1	
Total Radium	Total Radium Calculation	**1.05 ± 0.778 (1.45)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: HGWC-11 **Lab ID: 2616998009** Collected: 04/03/19 12:40 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.302 ± 0.263 (0.475) C:90% T:NA**	pCi/L	04/12/19 09:37	13982-63-3	
Radium-228	EPA 9320	**0.0575 ± 0.452 (1.04) C:79% T:82%**	pCi/L	04/16/19 18:37	15262-20-1	
Total Radium	Total Radium Calculation	**0.360 ± 0.715 (1.52)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: HGWC-12 **Lab ID: 2616998010** Collected: 04/03/19 14:20 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.344 ± 0.249 (0.412) C:94% T:NA**	pCi/L	04/12/19 09:49	13982-63-3	
Radium-228	EPA 9320	**0.390 ± 0.755 (1.66) C:76% T:83%**	pCi/L	04/16/19 21:13	15262-20-1	
Total Radium	Total Radium Calculation	**0.734 ± 1.00 (2.07)**	pCi/L	04/17/19 13:15	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

Sample: MW-25D **Lab ID: 2616998011** Collected: 04/03/19 16:15 Received: 04/04/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.361 ± 0.333 (0.652) C:82% T:NA**	pCi/L	04/12/19 09:49	13982-63-3	
Radium-228	EPA 9320	**0.301 ± 0.482 (1.05) C:74% T:77%**	pCi/L	04/25/19 11:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.662 ± 0.815 (1.70)**	pCi/L	04/26/19 09:32	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

QC Batch: 337393 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616998003, 2616998004, 2616998006, 2616998007, 2616998009, 2616998010, 2616998011

METHOD BLANK: 1642070 Matrix: Water
Associated Lab Samples: 2616998003, 2616998004, 2616998006, 2616998007, 2616998009, 2616998010, 2616998011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.123 ± 0.274 (0.633) C:65% T:NA	pCi/L	04/12/19 09:37	

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.: 2616998

QC Batch: 337392 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2616998001, 2616998002, 2616998005, 2616998008

METHOD BLANK: 1642069 Matrix: Water
Associated Lab Samples: 2616998001, 2616998002, 2616998005, 2616998008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.117 ± 0.178 (0.382) C:94% T:NA	pCi/L	04/12/19 08:07	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2616998

QC Batch: 337342 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616998001, 2616998002, 2616998003, 2616998004, 2616998005, 2616998006, 2616998007, 2616998008, 2616998009, 2616998010

METHOD BLANK: 1641953 Matrix: Water
Associated Lab Samples: 2616998001, 2616998002, 2616998003, 2616998004, 2616998005, 2616998006, 2616998007, 2616998008, 2616998009, 2616998010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.245 ± 0.294 (0.748) C:78% T:79%	pCi/L	04/16/19 16:22	

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.: 2616998

QC Batch: 338745 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2616998011

METHOD BLANK: 1648702 Matrix: Water
Associated Lab Samples: 2616998011

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	

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.: 2616998

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

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2616998

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616998001	**HGWC-9**	EPA 9315	337392		
2616998002	**MW-26D**	EPA 9315	337392		
2616998003	**MW-19**	EPA 9315	337393		
2616998004	**MW-5**	EPA 9315	337393		
2616998005	**HGWC-8**	EPA 9315	337392		
2616998006	**HGWC-10**	EPA 9315	337393		
2616998007	**MW-6**	EPA 9315	337393		
2616998008	**MW-7**	EPA 9315	337392		
2616998009	**HGWC-11**	EPA 9315	337393		
2616998010	**HGWC-12**	EPA 9315	337393		
2616998011	**MW-25D**	EPA 9315	337393		
2616998001	**HGWC-9**	EPA 9320	337342		
2616998002	**MW-26D**	EPA 9320	337342		
2616998003	**MW-19**	EPA 9320	337342		
2616998004	**MW-5**	EPA 9320	337342		
2616998005	**HGWC-8**	EPA 9320	337342		
2616998006	**HGWC-10**	EPA 9320	337342		
2616998007	**MW-6**	EPA 9320	337342		
2616998008	**MW-7**	EPA 9320	337342		
2616998009	**HGWC-11**	EPA 9320	337342		
2616998010	**HGWC-12**	EPA 9320	337342		
2616998011	**MW-25D**	EPA 9320	338745		
2616998001	**HGWC-9**	Total Radium Calculation	338684		
2616998002	**MW-26D**	Total Radium Calculation	338684		
2616998003	**MW-19**	Total Radium Calculation	338684		
2616998004	**MW-5**	Total Radium Calculation	338684		
2616998005	**HGWC-8**	Total Radium Calculation	338684		
2616998006	**HGWC-10**	Total Radium Calculation	338684		
2616998007	**MW-6**	Total Radium Calculation	338684		
2616998008	**MW-7**	Total Radium Calculation	338684		
2616998009	**HGWC-11**	Total Radium Calculation	338684		
2616998010	**HGWC-12**	Total Radium Calculation	338684		
2616998011	**MW-25D**	Total Radium Calculation	340066		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348806	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-9	WT	G	04/03	9:43	04/03	10:05	18	5	2		3							Y	—		Y	Y	
2	MW-26D	WT	G	04/03	11:15	04/03	11:38	18	5	2		3							Y	—		Y	Y	
3	MW-19	WT	G	04/03	14:27	04/03	14:50	19	5	2		3							Y	—		Y	Y	
4	MW-5	WT	G	04/03	12:55	04/03	13:12	19	5	2		3							Y	—		Y	Y	
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

GW 04/03/19

WO# : 2616998

2616998

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Grant Walter / Geosyntec	04/03/19	1810	Malia Wilson / Geosyntec	4/3/19	1810	
	Malia Wilson / Geosyntec	4/3/19	1900	[illegible] / Geosyntec	4/5/19	1900	
	[illegible] / Geosyntec	4/4/19		[illegible] Pace	4.4.19	0905	
				[illegible]	4/4/19	1100	

SAMPLER NAME AND SIGNATURE				TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Grant Walter			3.5	Y	Y	Y
SIGNATURE of SAMPLER:	Grant Walter	DATE Signed:	04/03/19				

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) (2)	Mets (App. III, App. IV, D&O	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-8	WT	G	4/3/19	1054	4/3/19	1124	18	5	2		3							Y	—		Y	Y	—
2	HGWC-10	WT	G	4/3/19	1318	4/3/19	1338	19	5	2		3							Y	—		Y	Y	—
3	MW-6	WT	G	4/3/19	1450	4/3/19	1510	20	5	2		3							Y	—		Y	Y	—
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

WO#: 2616998

PM: BM Due Date: 05/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App. IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus / Geosyntec	4/3/19	1900	[illegible] / Geosyntec	4/3/19	1900	
	[illegible] / Geosyntec	4/4/19		[illegible] / Pace	4.4.19	0905	
				MQalman	4/4/19	1100	3.5 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/3/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 3 Of 3

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 Fax:
Requested Due Date:	Standard TAT

Section B
Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C
Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency	
State / Location	GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
																		N						
1	MW-7	WT	G	4/3/19	10:25	4/3/19	10:45	17.27	5	2		3							Y	—		Y	Y	—
2	HGWC-11	WT	G	4/3/19	12:20	4/3/19	12:40	17.91	5	2		3							Y	—		Y	Y	—
3	HGWC-12	WT	G	4/3/19	13:58	4/3/19	14:20	18.57	5	2		3							Y	—		Y	Y	—
4	MW-25D	WT	G	4/3/19	15:46	4/3/19	16:15	18.99	5	2		3							Y	—		Y	Y	—
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

DCA 4/3/19

WO#: 2616998
PM: BM Due Date: 05/02/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
APP III + IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Dalton Anderson (GS)	4/3/19	18:10	Maclin Mendes / Geosyntec	4/3/19	1810				
	Maclin Mendes / Geosyntec	4/3/19	1900	[illegible] / Geosyntec	4/3/19	1900				
	[illegible] / Geosyntec	4/4/19		[illegible] / Pace	4.4.19	0908				
				[illegible]	4/4/19	1100	3.5	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dalton Anderson

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/3/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2616998

PM: BM **Due Date: 05/02/19**

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 3.5 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/4/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

May 01, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2617067

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 4/12/2019. 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617067

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617067

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617067001	**MW-27D**	Water	04/04/19 09:48	04/05/19 11:20

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617067

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617067001	**MW-27D**	EPA 6020B	JMW1	13	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2617067

Sample: MW-27D **Lab ID: 2617067001** Collected: 04/04/19 09:48 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								
Antimony	**0.00016J**	mg/L	0.0030	0.00011	1	04/09/19 10:55	04/10/19 02:00	7440-36-0	
Arsenic	**0.00020J**	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:00	7440-38-2	
Barium	**1.2**	mg/L	0.050	0.00030	5	04/09/19 10:55	04/11/19 01:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:00	7440-41-7	
Boron	**0.12J**	mg/L	0.20	0.0051	2	04/09/19 10:55	04/11/19 01:12	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:00	7440-43-9	
Calcium	**26.3**	mg/L	2.5	0.10	5	04/09/19 10:55	04/11/19 01:16	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:00	7440-47-3	
Cobalt	**0.000091J**	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:00	7440-48-4	
Lithium	**0.0069J**	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:00	7439-93-2	
Molybdenum	**0.0018J**	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:00	7439-98-7	
Selenium	**0.00012J**	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:00	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**203**	mg/L	25.0	10.0	1		04/11/19 19:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**26.9**	mg/L	0.25	0.024	1		04/09/19 09:48	16887-00-6	
Fluoride	**0.26J**	mg/L	0.30	0.029	1		04/09/19 09:48	16984-48-8	
Sulfate	**11.8**	mg/L	1.0	0.017	1		04/09/19 09:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617067

QC Batch: 468126
QC Batch Method: EPA 3010A
Associated Lab Samples: 2617067001

Analysis Method: EPA 6020B
Analysis Description: 6020 MET

METHOD BLANK: 2543175 Matrix: Water
Associated Lab Samples: 2617067001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00011	04/10/19 00:56	
Arsenic	mg/L	ND	0.0050	0.000060	04/11/19 00:58	
Barium	mg/L	ND	0.010	0.000060	04/11/19 00:58	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 00:56	
Boron	mg/L	ND	0.10	0.0026	04/11/19 00:58	
Cadmium	mg/L	ND	0.0010	0.000070	04/11/19 00:58	
Calcium	mg/L	ND	0.50	0.021	04/11/19 00:58	
Chromium	mg/L	ND	0.010	0.00042	04/11/19 00:58	
Cobalt	mg/L	ND	0.010	0.000050	04/11/19 00:58	
Lithium	mg/L	ND	0.050	0.00042	04/11/19 00:58	
Molybdenum	mg/L	ND	0.010	0.00010	04/11/19 00:58	
Selenium	mg/L	ND	0.010	0.000080	04/11/19 00:58	
Thallium	mg/L	ND	0.0010	0.000060	04/11/19 00:58	

LABORATORY CONTROL SAMPLE: 2543176

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	98	80-120	
Beryllium	mg/L	0.01	0.0095	95	80-120	
Boron	mg/L	0.05	0.047J	94	80-120	
Cadmium	mg/L	0.01	0.010	101	80-120	
Calcium	mg/L	0.62	0.63	101	80-120	
Chromium	mg/L	0.05	0.050	99	80-120	
Cobalt	mg/L	0.01	0.010J	100	80-120	
Lithium	mg/L	0.05	0.050J	100	80-120	
Molybdenum	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.050	99	80-120	
Thallium	mg/L	0.01	0.0099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2543177 2543178

Parameter	Units	2617072001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	102	100	75-125	2	20	
Arsenic	mg/L	0.00017J	0.01	0.01	0.010	0.010	102	99	75-125	3	20	
Barium	mg/L	0.018	0.05	0.05	0.069	0.068	101	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617067

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2543177 2543178

Parameter	Units	2617072001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.01	0.01	0.0088	0.0084	87	84	75-125	4	20	
Boron	mg/L	2.3	0.05	0.05	2.4	2.4	205	248	75-125	1	20	M6
Cadmium	mg/L	0.0018	0.01	0.01	0.012	0.011	97	96	75-125	1	20	
Calcium	mg/L	214	0.62	0.62	218	216	575	271	75-125	1	20	M6
Chromium	mg/L	ND	0.05	0.05	0.050	0.049	99	98	75-125	1	20	
Cobalt	mg/L	0.035	0.01	0.01	0.044	0.044	97	94	75-125	1	20	
Lithium	mg/L	0.00090J	0.05	0.05	0.046J	0.045J	90	88	75-125	2	20	
Molybdenum	mg/L	ND	0.05	0.05	0.052	0.052	104	103	75-125	1	20	
Selenium	mg/L	0.00021J	0.05	0.05	0.050	0.049	99	97	75-125	2	20	
Thallium	mg/L	ND	0.01	0.01	0.010	0.010	104	102	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617067

QC Batch: 26251
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2617067001

LABORATORY CONTROL SAMPLE: 118507

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	404	101	84-108	

SAMPLE DUPLICATE: 118508

Parameter	Units	2617035009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	85.0	50.0	52	10	D6

SAMPLE DUPLICATE: 118509

Parameter	Units	2617069003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	340	341	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617067

QC Batch: 25956
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617067001

METHOD BLANK: 117263 Matrix: Water
Associated Lab Samples: 2617067001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.066J	0.25	0.024	04/08/19 22:43	
Fluoride	mg/L	ND	0.30	0.029	04/08/19 22:43	
Sulfate	mg/L	0.045J	1.0	0.017	04/08/19 22:43	

LABORATORY CONTROL SAMPLE: 117264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.8	98	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: 117265 117266

Parameter	Units	2617035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.3	10	10	14.3	14.4	100	101	90-110	1	15	
Fluoride	mg/L	ND	10	10	9.7	9.8	97	98	90-110	1	15	
Sulfate	mg/L	8.5	10	10	17.6	17.7	91	92	90-110	0	15	

MATRIX SPIKE SAMPLE: 117267

Parameter	Units	2617035002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.2	10	13.9	96	90-110	
Fluoride	mg/L	ND	10	9.3	93	90-110	
Sulfate	mg/L	2.1	10	11.2	91	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617067

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.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617067

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617067001	**MW-27D**	EPA 3010A	468126	EPA 6020B	468248
2617067001	**MW-27D**	SM 2540C	26251		
2617067001	**MW-27D**	EPA 300.0	25956		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: GA

State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) (12)	Mets (App. III, App. IV, D&O	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-27D	WT	G	4/4/19	0928	4/4/19	0948	18	5	2		3						Y	Y			Y	Y	-
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

4/4/19

NM

WO#: 2617067

2617067

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App IV (12): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Noelia Montes / Geosyntec	4/4/19	1804	Geosyntec	4-4-19	1804	
	Lauren Petty / Geosyntec	4/5/19	0933	Pace	4/5/19	0933	
				M Zahmoon	4/5/19	1120	1.2 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Montes

SIGNATURE of SAMPLER: Noelia Montes DATE Signed: 4/4/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617067

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

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

April 29, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2617068

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.

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617068

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617068

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617068001	**MW-27D**	Water	04/04/19 09:48	04/05/19 11:20

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617068

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617068001	**MW-27D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2617068

Sample: MW-27D **Lab ID: 2617068001** Collected: 04/04/19 09:48 Received: 04/05/19 11:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.983 ± 0.386 (0.350) C:98% T:NA**	pCi/L	04/17/19 08:36	13982-63-3	
Radium-228	EPA 9320	**0.348 ± 0.348 (0.722) C:87% T:79%**	pCi/L	04/18/19 12:29	15262-20-1	
Total Radium	Total Radium Calculation	**1.33 ± 0.734 (1.07)**	pCi/L	04/22/19 11:17	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2617068

QC Batch: 337911 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2617068001

METHOD BLANK: 1644521 Matrix: Water
Associated Lab Samples: 2617068001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.526 ± 0.315 (0.569) C:87% T:76%	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2617068

QC Batch: 337917 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2617068001

METHOD BLANK: 1644525 Matrix: Water
Associated Lab Samples: 2617068001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.221 ± 0.211 (0.378) C:90% T:NA	pCi/L	04/17/19 08:36	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617068

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617068

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617068001	**MW-27D**	EPA 9315	337917		
2617068001	**MW-27D**	EPA 9320	337911		
2617068001	**MW-27D**	Total Radium Calculation	339290		

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:	Section B Required Project Information:	Section C Invoice Information:
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com
Address: 2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:
Atlanta, GA 30339		Address:
Email: jabraham@southernco.com	Purchase Order #: SGS10348606	Pace Quote:
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: betsy.mcdaniel@pacelabs.com,
Requested Due Date: Standard TAT	Project #:	Pace Profile #: 327 (AP) or 328 (Huff)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) (2)	Mets (App. III, App. IV, D&O	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-27D	WT	G	4/4/19	0928	4/4/19	0948	18	5	2		3							Y	—		Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

4/4/19 NM

WO#: 2617068

2617068

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App. IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Noelia Mendoza / Geosyntec	4/4/19	1804	[illegible] / Pace	4-4-19	1804	
	[illegible] / Geosyntec	4/5/19	0933	[illegible] / Pace	4/5/19	0933	
				M Zahnen	4/5/19	1120	1.2 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Mendoza

SIGNATURE of SAMPLER: Noelia Mendoza DATE Signed: 4/4/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617068

PM: BM Due Date: 05/03/19

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 1.2 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/5/19 MK

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

May 01, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2617146

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 4/15/2019. 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617146

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617146

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617146001	**HGWC-13**	Water	04/05/19 16:03	04/08/19 15:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617146

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617146001	**HGWC-13**	EPA 6020B	JMW1	13	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2617146

Sample: HGWC-13 **Lab ID: 2617146001** Collected: 04/05/19 16:03 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								
Antimony	**0.00021J**	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 09:34	7440-36-0	
Arsenic	**0.36**	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 09:34	7440-38-2	
Barium	**0.079**	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 09:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 09:34	7440-41-7	
Boron	**0.86J**	mg/L	2.0	0.051	20	04/10/19 19:59	04/11/19 23:20	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 09:34	7440-43-9	
Calcium	**77.1**	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:20	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 09:34	7440-47-3	
Cobalt	**0.0017J**	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 09:34	7440-48-4	
Lithium	**0.023J**	mg/L	0.050	0.00042	1	04/10/19 19:59	04/12/19 09:34	7439-93-2	
Molybdenum	**0.030**	mg/L	0.010	0.00010	1	04/10/19 19:59	04/12/19 09:34	7439-98-7	
Selenium	**0.00018J**	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 09:34	7782-49-2	
Thallium	**0.00034J**	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 09:34	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**331**	mg/L	25.0	10.0	1		04/11/19 20:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**36.4**	mg/L	0.25	0.024	1		04/10/19 09:10	16887-00-6	
Fluoride	**0.83**	mg/L	0.30	0.029	1		04/10/19 09:10	16984-48-8	
Sulfate	**105**	mg/L	10.0	0.17	10		04/10/19 13:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617146

QC Batch: 468622
QC Batch Method: EPA 3010A
Associated Lab Samples: 2617146001

Analysis Method: EPA 6020B
Analysis Description: 6020 MET

METHOD BLANK: 2545263 Matrix: Water
Associated Lab Samples: 2617146001

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	
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	
Selenium	mg/L	ND	0.010	0.000080	04/11/19 20:42	
Thallium	mg/L	ND	0.0010	0.000060	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	
Lithium	mg/L	0.05	0.050	100	80-120	
Molybdenum	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266

Parameter	Units	2617144001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617146

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266

Parameter	Units	2617144001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L		0.01	0.01	0.0086	0.0089	86	89	75-125	4	20	
Boron	mg/L	1010J ug/L	0.05	0.05	1.0J	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	70000 ug/L	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	
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	
Selenium	mg/L		0.05	0.05	0.044	0.044	89	88	75-125	1	20	
Thallium	mg/L		0.01	0.01	0.0096	0.0096	96	96	75-125	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617146

QC Batch: 26252
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2617146001

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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617146

QC Batch: 26064
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617146001

METHOD BLANK: 117680 Matrix: Water
Associated Lab Samples: 2617146001

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	RPD	Max 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

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617146

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617146

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617146001	**HGWC-13**	EPA 3010A	468622	EPA 6020B	468673
2617146001	**HGWC-13**	SM 2540C	26252		
2617146001	**HGWC-13**	EPA 300.0	26064		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Metals (App. III & App. IV) (2)	Mets (App. III, App. IV, D&O	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	AGWC-13	WT	G	4/5/19	1553	4/5/19	1603	∞	5	2		3						Y	Y	—		Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/5/19

WO#: 2617146

2617146

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App. IV(2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus/Georgia Power	4/5/19	1945	W Law / Geosyntec	4/5/19	1945	
	W Law / Geosyntec	4/8/19	1116	1 Pace	4.8.19	1116	
				Malman	4/8/19	1530	1.1 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/5/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617146

PM: BM Due Date: 04/15/19

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

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 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

May 01, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2617147

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617147

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617147

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617147001	**HGWC-13**	Water	04/05/19 16:03	04/08/19 15:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617147

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617147001	**HGWC-13**	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
Pace Project No.: 2617147

Sample: HGWC-13 **Lab ID: 2617147001** Collected: 04/05/19 16:03 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	**0.422 ± 0.319 (0.565) C:87% T:NA**	pCi/L	04/18/19 08:06	13982-63-3	
Radium-228	EPA 9320	**-0.0205 ± 0.300 (0.711) C:85% T:69%**	pCi/L	04/18/19 12:31	15262-20-1	
Total Radium	Total Radium Calculation	**0.422 ± 0.619 (1.28)**	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.: 2617147

QC Batch: 337915 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2617147001

METHOD BLANK: 1644524 Matrix: Water
Associated Lab Samples: 2617147001

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.: 2617147

QC Batch: 337923 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2617147001

METHOD BLANK: 1644541 Matrix: Water
Associated Lab Samples: 2617147001

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.

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QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617147

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

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617147

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617147001	**HGWC-13**	EPA 9315	337923		
2617147001	**HGWC-13**	EPA 9320	337915		
2617147001	**HGWC-13**	Total Radium Calculation	339294		

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	Fax:
Requested Due Date:	Standard TAT

Section B – Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C – Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: | State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV) (2)	Mets (App. III, App IV, D&O	Metals (App III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-13	WT	G	4/5/19	1553	4/5/19	1603	w	5	2		3						Y	Y	–		Y	Y	–
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/5/19

WO# : 2617147

2617147

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App. IV(2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus/Georgia Power	4/5/19	1945	W Law / Geosyntec	4/5/19	1945	
	W Law / Geosyntec et al	4/8/19	1116	[illegible] / Pace	4/8/19	1116	
				M Zalman	4/8/19	1530	1.1 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/5/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617147

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 ☐

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 ME

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

May 01, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2617205

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617205

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617205

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617205001	**MW-24D**	Water	04/08/19 11:06	04/09/19 13:30

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617205

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617205001	**MW-24D**	EPA 6020B	JMW1	13	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2617205

Sample: MW-24D **Lab ID: 2617205001** Collected: 04/08/19 11:06 Received: 04/09/19 13:30 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								
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 09:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 09:41	7440-38-2	
Barium	**0.043**	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 09:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 09:41	7440-41-7	
Boron	**0.47J**	mg/L	2.0	0.051	20	04/10/19 19:59	04/12/19 01:33	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 09:41	7440-43-9	
Calcium	**83.0**	mg/L	10.0	0.41	20	04/10/19 19:59	04/12/19 01:33	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 09:41	7440-47-3	
Cobalt	**0.00025J**	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 09:41	7440-48-4	
Lithium	**0.0027J**	mg/L	0.050	0.00042	1	04/10/19 19:59	04/12/19 09:41	7439-93-2	
Molybdenum	**0.00027J**	mg/L	0.010	0.00010	1	04/10/19 19:59	04/12/19 09:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 09:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 09:41	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**323**	mg/L	25.0	10.0	1		04/11/19 20:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**43.3**	mg/L	0.25	0.024	1		04/11/19 00:33	16887-00-6	
Fluoride	**0.048J**	mg/L	0.30	0.029	1		04/11/19 00:33	16984-48-8	
Sulfate	**97.3**	mg/L	10.0	0.17	10		04/15/19 23:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617205

QC Batch: 468622
QC Batch Method: EPA 3010A
Associated Lab Samples: 2617205001

Analysis Method: EPA 6020B
Analysis Description: 6020 MET

METHOD BLANK: 2545263 Matrix: Water
Associated Lab Samples: 2617205001

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	
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	
Selenium	mg/L	ND	0.010	0.000080	04/11/19 20:42	
Thallium	mg/L	ND	0.0010	0.000060	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	
Lithium	mg/L	0.05	0.050	100	80-120	
Molybdenum	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266

Parameter	Units	2617144001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617205

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266

Parameter	Units	2617144001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L		0.01	0.01	0.0086	0.0089	86	89	75-125	4	20	
Boron	mg/L	1010J ug/L	0.05	0.05	1.0J	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	70000 ug/L	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	
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	
Selenium	mg/L		0.05	0.05	0.044	0.044	89	88	75-125	1	20	
Thallium	mg/L		0.01	0.01	0.0096	0.0096	96	96	75-125	0	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

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617205

QC Batch: 26252
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2617205001

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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617205

QC Batch: 26135
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2617205001

METHOD BLANK: 117979 Matrix: Water
Associated Lab Samples: 2617205001

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 Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617205

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

M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617205

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617205001	**MW-24D**	EPA 3010A	468622	EPA 6020B	468673
2617205001	**MW-24D**	SM 2540C	26252		
2617205001	**MW-24D**	EPA 300.0	26135		

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Metals (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-24D	WT	G	4/8/19	1015	4/8/19	1106	20	5	2		3						Y	Y	—		Y	Y	1
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NJM 4/8/19

WO# : 2617205

2617205

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
App IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus	4/8/19	2010	[illegible] / Geosyntec	4/8/19	2210	
	[illegible] / Geosyntec	4/9/19	1127	— (Pace)	4.9.19	1127	
				MZalman	4/9/19	1330	0.7 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/8/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617205

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #:

PM: BM Due Date: 04/16/19

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: 4/9/19 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

May 01, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2617206

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2617206

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2617206

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617206001	**MW-24D**	Water	04/08/19 11:06	04/09/19 13:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2617206

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617206001	**MW-24D**	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2617206

Sample: MW-24D **Lab ID: 2617206001** Collected: 04/08/19 11:06 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	**0.127 ± 0.0949 (0.162) C:91% T:NA**	pCi/L	04/22/19 21:19	13982-63-3	
Radium-228	EPA 9320	**0.446 ± 0.375 (0.749) C:79% T:73%**	pCi/L	04/25/19 14:16	15262-20-1	
Total Radium	Total Radium Calculation	**0.573 ± 0.470 (0.911)**	pCi/L	04/26/19 09:32	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2617206

QC Batch: 338631 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2617206001

METHOD BLANK: 1648339 Matrix: Water
Associated Lab Samples: 2617206001

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2617206

QC Batch: 338745 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2617206001

METHOD BLANK: 1648702 Matrix: Water
Associated Lab Samples: 2617206001

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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2617206

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2617206

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617206001	**MW-24D**	EPA 9315	338631		
2617206001	**MW-24D**	EPA 9320	338745		
2617206001	**MW-24D**	Total Radium Calculation	340066		

Pace Analytical

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:		Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-24D		WT	G	4/8/19	1015	4/8/19	1106	20	5	2		3						Y	—		Y	Y		1
2																									
3																									
4																									
5																									
6													4/8/19												
7																									
8											NM														
9																									
10																									
11																									
12																									

WO#: 2617206

2617206

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
App IV (2): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium	Noelia Muskus / Geosyntec	4/8/19	2010	[illegible] / Geosyntec	4/8/19	2210				
	[illegible] / Geosyntec	4/9/19	1127	[illegible] (Pace)	4.9.19	1127				
				M Zalman	4/9/19	1330	0.7	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/8/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617206

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #:

PM: BM Due Date: 05/07/19

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

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 MR

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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 Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617148

QC Batch: 468895
QC Batch Method: EPA 7470A
Analysis 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 Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0019	0.0019	77	77	75-125	0	25	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617148

QC Batch: 469500
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
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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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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	2617148001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617148

QC Batch: 26252
QC Batch Method: SM 2540C
Analysis 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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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617148

QC Batch: 26135
QC Batch Method: EPA 300.0
Analysis 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 Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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		

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency:

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX CODE: Drinking Water = DW; Water = WT; Waste Water = WW; Product = P; Soil/Solid = SL; Oil = OL; Wipe = WP; Air = AR; Other = OT; Tissue = TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	FB-01	WT	G	4/5/19	0940	4/15/19	0850	17	5	2		3						Y	Y	—	Y	Y		—
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

NM 4/5/19

WO#: 2617148

2617148

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Nadia Muskus/Geosyntec	4/5/19	1945	WB Leal / Geosyntec	4/5/19	1945				
	WB Leal/Geosyntec	4/8/19	1116	[illegible] / Pace	4.8.19	1116				
				MQuinan	4/8/19	1530	1.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 4/5/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO#: 2617148

PM: BM **Due Date: 04/15/19**

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

☐ Samples on ice, cooling process has begun

Cooler Temperature 1.1 **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 4/8/19 MR

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

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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

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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

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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

Pace Analytical Services, LLC
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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

Pace Analytical Services, LLC
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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.

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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

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

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		

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency: —

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals (App. III & App. IV)	Metals (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	FB-01	WT	G	4/5/19	0940	4/15/19	0850	17	5	2		3							Y	—		Y	Y	—
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/5/19

WO# : 2617149

2617149

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Nadia Muskus / Georgia Power	4/5/19	1945	[illegible] / Geosyntec	4/5/19	1945	
	[illegible] / Geosyntec	4/8/19	1116	[illegible] / Pace	4.8.19	1116	
				[illegible]	4/8/19	1530	1.1 Y Y Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 4/5/19

Sample Condition Upon Receipt

Face Analytical

Client Name: GA 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 ☐

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 MR

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

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(770)734-4200

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

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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 Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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 Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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 Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0019	0.0019	77	77	75-125	0	25	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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	2617144001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2617207

QC Batch: 26252
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2617207001, 2617207002

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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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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 Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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		

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 Fax:
Requested Due Date:	Standard TAT

Section B – Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C – Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency:

State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	FB-02	WT	G	4/8/19	1740	4/8/19	1745	19	5	2		3							-	Y	-	Y	Y	-
2	EB-01	WT	G	4/8/19	1755	4/8/19	1800	19	5	2		3							-	Y	-	Y	Y	-
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/8/19

WO#: 2617207

2617207

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geo	4/8/19	2010	EB Laws / Geosyntec	4/8/19	2010	
	EB Laws / Geosyntec	4/9/19	1127	[illegible] / Pace	4.9.19	1127	
				M Dalman	4/9/19	1330	0.7 / Y / Y / Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/8/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.7	Y	Y	Y

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA 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

☐ 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: 4/9/19 AK

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

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(770)734-4200

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

Pace Analytical Services, LLC
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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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

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		

Pace Analytical

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 Fax:
Requested Due Date:	Standard TAT

Section B Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10348606
Project Name:	Plant Hammond
Project #:	

Section C Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP) or 328 (Huff)

Regulatory Agency:

State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III & App. IV)	Mets (App. III, App. IV, D&O)	Metals (App. III & D&O)	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	FB-02	WT	G	4/8/19	1740	4/8/19	1745	19	5	2		3							-	Y	-	Y	Y	-
2	EB-01	WT	G	4/8/19	1755	4/8/19	1800	19	5	2		3							-	Y	-	Y	Y	-
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

NM 4/8/19

WO#:2617208

2617208

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Noelia Muskus / Geo	4/8/19	2010	EB Law / Geosyntec	4/8/19	2010
	EB Law / Geosyntec	4/9/19	1127	[illegible] / Pace	4.9.19	1127
				M Rahman	4/9/19	1330

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.7	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 4/8/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA 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

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 MR

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

July 10, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2620547

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on July 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2620547

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2620547

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2620547001	**MW-30D**	Water	07/08/19 19:50	07/09/19 12:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2620547

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2620547001	**MW-30D**	EPA 6020B	KLH	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2620547

Sample: MW-30D **Lab ID: 2620547001** Collected: 07/08/19 19:50 Received: 07/09/19 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								
Molybdenum	**0.022**	mg/L	0.010	0.00095	1	07/10/19 06:49	07/10/19 12:22	7439-98-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2620547

QC Batch: 31548
QC Batch Method: EPA 3005A
Associated Lab Samples: 2620547001

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 141738 Matrix: Water
Associated Lab Samples: 2620547001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	mg/L	ND	0.010	0.00095	07/10/19 11:42	

LABORATORY CONTROL SAMPLE: 141739

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 141740 141741

Parameter	Units	2620544001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Molybdenum	mg/L	0.034	0.1	0.1	0.13	0.13	98	100	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2620547

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2620547

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2620547001	**MW-30D**	EPA 3005A	31548	EPA 6020B	31551

Pace Analytical

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	Attention:	
Address:	2480 Maner Road	Copy To:		Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:		Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date: 2 day TAT		Project #:	GW6531B	Pace Profile #:	327.3

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	EPA 6020 Molybdenum	Residual Chlorine (Y/N)
1	MW-30D	WT	G	7/8/19	19:45	7/8/19	19:50	27	1			1							X	N
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

7/8/19

DA

WO# : 2620547

2620547

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dalton Anderson (Geo)	7/9/19	9:39	M. RAHMAN	7/9/19	0939	
				M Rahman	7/9/19	1200	
							2.2

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Dalton Anderson		
SIGNATURE of SAMPLER:		DATE Signed:	7/8/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.2	Y	Y	Y

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project # _____

WO# : 2620547

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

Tracking #: _____

PM: BM Due Date: 07/11/19

CLIENT: GAPower-CCR

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

Thermometer Used: B3 Type of Ice: ~~Wet~~ Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 2.2 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 7/9/19 MR

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☑Yes ☐No ☐N/A	7. 48 hr. TAT.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 24, 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 report issued on 10/1/2019. The report has been revised to remove mercury data 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623500001	**HGWA-1**	Water	09/23/19 16:15	09/24/19 15:23
2623500002	**HGWA-2**	Water	09/23/19 16:55	09/24/19 15:23
2623500003	**HGWA-3**	Water	09/23/19 17:10	09/24/19 15:23

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623500001	**HGWA-1**	EPA 6020B	CSW	14	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623500002	**HGWA-2**	EPA 6020B	CSW	14	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623500003	**HGWA-3**	EPA 6020B	CSW	14	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Sample: HGWA-1 **Lab ID: 2623500001** Collected: 09/23/19 16:15 Received: 09/24/19 15:23 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	0.00027	1	09/27/19 15:26	09/30/19 19:49	7440-36-0	
Arsenic	**0.00046J**	mg/L	0.0050	0.00035	1	09/27/19 15:26	09/30/19 19:49	7440-38-2	B
Barium	**0.042**	mg/L	0.010	0.00049	1	09/27/19 15:26	09/30/19 19:49	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/27/19 15:26	09/30/19 19:49	7440-41-7	
Boron	**0.021J**	mg/L	0.040	0.0049	1	09/27/19 15:26	09/30/19 19:49	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/27/19 15:26	09/30/19 19:49	7440-43-9	
Calcium	**118**	mg/L	5.0	0.55	50	09/27/19 15:26	09/30/19 19:54	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.00039	1	09/27/19 15:26	09/30/19 19:49	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/27/19 15:26	09/30/19 19:49	7440-48-4	
Lead	**0.000078J**	mg/L	0.0050	0.000046	1	09/27/19 15:26	09/30/19 19:49	7439-92-1	
Lithium	**0.0011J**	mg/L	0.030	0.00078	1	09/27/19 15:26	09/30/19 19:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/27/19 15:26	09/30/19 19:49	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/27/19 15:26	09/30/19 19:49	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/27/19 15:26	09/30/19 19:49	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**442**	mg/L	10.0	10.0	1		09/26/19 18:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**17.7**	mg/L	1.0	0.60	1		09/27/19 21:18	16887-00-6	
Fluoride	**0.078J**	mg/L	0.30	0.050	1		09/27/19 21:18	16984-48-8	
Sulfate	**70.2**	mg/L	1.0	0.50	1		09/27/19 21:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Sample: HGWA-2 **Lab ID: 2623500002** Collected: 09/23/19 16:55 Received: 09/24/19 15:23 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	0.00027	1	09/27/19 15:26	09/30/19 20:40	7440-36-0	
Arsenic	**0.00067J**	mg/L	0.0050	0.00035	1	09/27/19 15:26	09/30/19 20:40	7440-38-2	B
Barium	**0.13**	mg/L	0.010	0.00049	1	09/27/19 15:26	09/30/19 20:40	7440-39-3	
Beryllium	**0.00011J**	mg/L	0.0030	0.000074	1	09/27/19 15:26	09/30/19 20:40	7440-41-7	
Boron	**0.040J**	mg/L	0.040	0.0049	1	09/27/19 15:26	09/30/19 20:40	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/27/19 15:26	09/30/19 20:40	7440-43-9	
Calcium	**19.5**	mg/L	5.0	0.55	50	09/27/19 15:26	09/30/19 20:46	7440-70-2	
Chromium	**0.00058J**	mg/L	0.010	0.00039	1	09/27/19 15:26	09/30/19 20:40	7440-47-3	
Cobalt	**0.038**	mg/L	0.0050	0.00030	1	09/27/19 15:26	09/30/19 20:40	7440-48-4	
Lead	**0.000092J**	mg/L	0.0050	0.000046	1	09/27/19 15:26	09/30/19 20:40	7439-92-1	
Lithium	**0.0016J**	mg/L	0.030	0.00078	1	09/27/19 15:26	09/30/19 20:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/27/19 15:26	09/30/19 20:40	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/27/19 15:26	09/30/19 20:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/27/19 15:26	09/30/19 20:40	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**129**	mg/L	10.0	10.0	1		09/26/19 18:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.1**	mg/L	1.0	0.60	1		09/27/19 21:33	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		09/27/19 21:33	16984-48-8	
Sulfate	**47.2**	mg/L	1.0	0.50	1		09/27/19 21:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Sample: HGWA-3 **Lab ID: 2623500003** Collected: 09/23/19 17:10 Received: 09/24/19 15:23 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	0.00027	1	09/27/19 15:26	09/30/19 20:52	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	09/27/19 15:26	09/30/19 20:52	7440-38-2	B
Barium	**0.13**	mg/L	0.010	0.00049	1	09/27/19 15:26	09/30/19 20:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/27/19 15:26	09/30/19 20:52	7440-41-7	
Boron	**0.0081J**	mg/L	0.040	0.0049	1	09/27/19 15:26	09/30/19 20:52	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/27/19 15:26	09/30/19 20:52	7440-43-9	
Calcium	**71.0**	mg/L	5.0	0.55	50	09/27/19 15:26	09/30/19 20:57	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	09/27/19 15:26	09/30/19 20:52	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/27/19 15:26	09/30/19 20:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	09/27/19 15:26	09/30/19 20:52	7439-92-1	
Lithium	**0.0029J**	mg/L	0.030	0.00078	1	09/27/19 15:26	09/30/19 20:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/27/19 15:26	09/30/19 20:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/27/19 15:26	09/30/19 20:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/27/19 15:26	09/30/19 20:52	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**268**	mg/L	10.0	10.0	1		09/26/19 18:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.9**	mg/L	1.0	0.60	1		09/27/19 21:47	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		09/27/19 21:47	16984-48-8	
Sulfate	**43.9**	mg/L	1.0	0.50	1		09/27/19 21:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

QC Batch: 36079 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623500001, 2623500002, 2623500003

METHOD BLANK: 162814 Matrix: Water
Associated Lab Samples: 2623500001, 2623500002, 2623500003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/30/19 19:37	
Arsenic	mg/L	0.00043J	0.0050	0.00035	09/30/19 19:37	
Barium	mg/L	ND	0.010	0.00049	09/30/19 19:37	
Beryllium	mg/L	ND	0.0030	0.000074	09/30/19 19:37	
Boron	mg/L	ND	0.040	0.0049	09/30/19 19:37	
Cadmium	mg/L	ND	0.0025	0.00011	09/30/19 19:37	
Calcium	mg/L	ND	0.10	0.011	09/30/19 19:37	
Chromium	mg/L	ND	0.010	0.00039	09/30/19 19:37	
Cobalt	mg/L	ND	0.0050	0.00030	09/30/19 19:37	
Lead	mg/L	ND	0.0050	0.000046	09/30/19 19:37	
Lithium	mg/L	ND	0.030	0.00078	09/30/19 19:37	
Molybdenum	mg/L	ND	0.010	0.00095	09/30/19 19:37	
Selenium	mg/L	ND	0.010	0.0013	09/30/19 19:37	
Thallium	mg/L	ND	0.0010	0.000052	09/30/19 19:37	

LABORATORY CONTROL SAMPLE: 162815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.11	106	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.11	106	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	108	104	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00046J	0.1	0.1	0.10	0.10	103	100	75-125	3	20	
Barium	mg/L	0.042	0.1	0.1	0.15	0.15	110	106	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.094	98	94	75-125	4	20	
Boron	mg/L	0.021J	1	1	1.0	0.99	99	97	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	3	20	
Calcium	mg/L	118	1	1	116	129	-296	1090	75-125	11	20	M6
Chromium	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	3	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20	
Lead	mg/L	0.000078J	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Lithium	mg/L	0.0011J	0.1	0.1	0.10	0.098	102	97	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	108	102	75-125	6	20	
Selenium	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.11	0.10	105	101	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

QC Batch: 36029 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623500001, 2623500002, 2623500003

LABORATORY CONTROL SAMPLE: 162444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	393	98	84-108	

SAMPLE DUPLICATE: 162445

Parameter	Units	2623494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	222	248	11	10	D6

SAMPLE DUPLICATE: 162446

Parameter	Units	2623553001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

QC Batch: 500244 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623500001, 2623500002, 2623500003

METHOD BLANK: 2691483 Matrix: Water
Associated Lab Samples: 2623500001, 2623500002, 2623500003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/27/19 16:24	
Fluoride	mg/L	ND	0.10	0.050	09/27/19 16:24	
Sulfate	mg/L	ND	1.0	0.50	09/27/19 16:24	

LABORATORY CONTROL SAMPLE: 2691484

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.9	102	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	52.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2691487 2691488

Parameter	Units	92447237002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	16.9	50	50	69.7	69.4	105	105	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.8	2.7	110	108	90-110	2	10	
Sulfate	mg/L	91.9	50	50	139	139	94	95	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2691489 2691490

Parameter	Units	92447233001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7.9	50	50	60.5	60.9	105	106	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	3.0	3.1	120	125	90-110	4	10	M1
Sulfate	mg/L	36.6	50	50	90.2	90.3	107	107	90-110	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

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.
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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623500

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623500001	**HGWA-1**	EPA 3005A	36079	EPA 6020B	36104
2623500002	**HGWA-2**	EPA 3005A	36079	EPA 6020B	36104
2623500003	**HGWA-3**	EPA 3005A	36079	EPA 6020B	36104
2623500001	**HGWA-1**	SM 2540C	36029		
2623500002	**HGWA-2**	SM 2540C	36029		
2623500003	**HGWA-3**	SM 2540C	36029		
2623500001	**HGWA-1**	EPA 300.0 Rev 2.1 1993	500244		
2623500002	**HGWA-2**	EPA 300.0 Rev 2.1 1993	500244		
2623500003	**HGWA-3**	EPA 300.0 Rev 2.1 1993	500244		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic , Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	Requested Analysis Filtered (Y/N)																	N	N	N	N	N	N	N		
1	HGWA-1	WT	G	9/23/19	15:40	9/23/19	16:15	18.8	4	1		3						Y	Y	Y	Y	Y	Y	Y		
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

09-23-2019

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Dan Gibbs/Geosyntec	09.23.19	17:45	Madia Mustan/Geosyntec	9/23/19	17:45				
	Madia Mustan/Geosyntec	09/23/19	19:40	1 Parcel	9.24.19	1413				
	1 Parcel	9.24.19	1523	Charles Hunter	9/24/19	1523	3.8	Y	Y	Y

WO#: 2623500

2623500

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER:

DATE Signed: 09.23.2019

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.8	Y	Y	Y

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	Y/N	N	N	N	N	N	N	N	
1	HGWA-2	WT	G	9/23/19	1535	9/23/19	1655	22	4	1	3	3							Y	Y	Y	Y	Y	Y	Y	N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

BRW 9/23/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9/23/19	17:15	Malia Murkins / Geosyntec	9/23/19	17:45	
	Malia Murkins / Geosyntec	9/23/19	19:40	Pace	9.24.19	1413	
	Pace	9.24.19	1523	Charles Hunter	9/24/19	1523	3.8 Y Y Y

WO#: 2623500

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben Weinmann DATE Signed: 9/23/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.8	Y	Y	Y

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GWG581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Y/N	Analyses Test: Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
																		Y/N	N	N	N	N	N	N	N		
1	HGWA-3	WT	G	9/23/19	1611	9/23/19	1710	22	4	1		3							Y	Y	Y	Y	Y	Y	Y	N	3
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

09/23/19

NM

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus/Geosyntec	9/23/19	19:40	1 Pace	9.24.19	1418	
	1 Pace	9.24.19	1523	Charles Hunter	9/24/19	1523	3.8 X Y Y

WO#: 2623500

PM: BM Due Date: 10/01/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Noelia Muskus		
SIGNATURE of SAMPLER:	Noelia Muskus	DATE Signed:	09/23/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.8	X	Y	Y

Pace Analytical

Sample Condition Upon Receip

WO# : 2623500

Client Name: GA Power CCR

PM: BM Due Date: 10/01/19

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 214 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.8 °C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/24/19 CAH

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623553

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623553

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623553

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623553001	**FB-01**	Water	09/24/19 17:25	09/25/19 14:03
2623553002	**EB-01**	Water	09/24/19 17:40	09/25/19 14:03

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

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623553

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623553001	**FB-01**	EPA 6020B	CSW	14	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623553002	**EB-01**	EPA 6020B	CSW	14	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623553

Sample: FB-01 **Lab ID: 2623553001** Collected: 09/24/19 17:25 Received: 09/25/19 14:03 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	0.00027	1	09/27/19 15:26	10/01/19 10:40	7440-36-0	
Arsenic	**0.00060J**	mg/L	0.0050	0.00035	1	09/27/19 15:26	10/01/19 10:40	7440-38-2	B
Barium	ND	mg/L	0.010	0.00049	1	09/27/19 15:26	10/01/19 10:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/27/19 15:26	10/01/19 10:40	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	09/27/19 15:26	10/01/19 10:40	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/27/19 15:26	10/01/19 10:40	7440-43-9	
Calcium	**0.028J**	mg/L	0.10	0.011	1	09/27/19 15:26	10/01/19 10:40	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	09/27/19 15:26	10/01/19 10:40	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/27/19 15:26	10/01/19 10:40	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	09/27/19 15:26	10/01/19 10:40	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	09/27/19 15:26	10/01/19 10:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/27/19 15:26	10/01/19 10:40	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/27/19 15:26	10/01/19 10:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/27/19 15:26	10/01/19 10:40	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/26/19 18:05		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	ND	mg/L	1.0	0.60	1		10/01/19 18:33	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 18:33	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/01/19 18:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623553

Sample: EB-01 **Lab ID: 2623553002** Collected: 09/24/19 17:40 Received: 09/25/19 14:03 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	0.00027	1	09/27/19 15:26	10/01/19 10:46	7440-36-0	
Arsenic	**0.00046J**	mg/L	0.0050	0.00035	1	09/27/19 15:26	10/01/19 10:46	7440-38-2	B
Barium	ND	mg/L	0.010	0.00049	1	09/27/19 15:26	10/01/19 10:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/27/19 15:26	10/01/19 10:46	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	09/27/19 15:26	10/01/19 10:46	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/27/19 15:26	10/01/19 10:46	7440-43-9	
Calcium	**0.064J**	mg/L	0.10	0.011	1	09/27/19 15:26	10/01/19 10:46	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	09/27/19 15:26	10/01/19 10:46	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/27/19 15:26	10/01/19 10:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	09/27/19 15:26	10/01/19 10:46	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	09/27/19 15:26	10/01/19 10:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/27/19 15:26	10/01/19 10:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/27/19 15:26	10/01/19 10:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/27/19 15:26	10/01/19 10:46	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/26/19 18:05		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	ND	mg/L	1.0	0.60	1		10/01/19 19:16	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 19:16	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/01/19 19:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623553

QC Batch: 36079 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623553001, 2623553002

METHOD BLANK: 162814 Matrix: Water
Associated Lab Samples: 2623553001, 2623553002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/30/19 19:37	
Arsenic	mg/L	0.00043J	0.0050	0.00035	09/30/19 19:37	
Barium	mg/L	ND	0.010	0.00049	09/30/19 19:37	
Beryllium	mg/L	ND	0.0030	0.000074	09/30/19 19:37	
Boron	mg/L	ND	0.040	0.0049	09/30/19 19:37	
Cadmium	mg/L	ND	0.0025	0.00011	09/30/19 19:37	
Calcium	mg/L	ND	0.10	0.011	09/30/19 19:37	
Chromium	mg/L	ND	0.010	0.00039	09/30/19 19:37	
Cobalt	mg/L	ND	0.0050	0.00030	09/30/19 19:37	
Lead	mg/L	ND	0.0050	0.000046	09/30/19 19:37	
Lithium	mg/L	ND	0.030	0.00078	09/30/19 19:37	
Molybdenum	mg/L	ND	0.010	0.00095	09/30/19 19:37	
Selenium	mg/L	ND	0.010	0.0013	09/30/19 19:37	
Thallium	mg/L	ND	0.0010	0.000052	09/30/19 19:37	

LABORATORY CONTROL SAMPLE: 162815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.11	106	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.11	106	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	108	104	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623553

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 162816 162817

Parameter	Units	2623500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00046J	0.1	0.1	0.10	0.10	103	100	75-125	3	20	
Barium	mg/L	0.042	0.1	0.1	0.15	0.15	110	106	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.094	98	94	75-125	4	20	
Boron	mg/L	0.021J	1	1	1.0	0.99	99	97	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	3	20	
Calcium	mg/L	118	1	1	116	129	-296	1090	75-125	11	20	M6
Chromium	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	3	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20	
Lead	mg/L	0.000078J	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Lithium	mg/L	0.0011J	0.1	0.1	0.10	0.098	102	97	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	108	102	75-125	6	20	
Selenium	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.11	0.10	105	101	75-125	4	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623553

QC Batch: 36029 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623553001, 2623553002

LABORATORY CONTROL SAMPLE: 162444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	393	98	84-108	

SAMPLE DUPLICATE: 162445

Parameter	Units	2623494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	222	248	11	10	D6

SAMPLE DUPLICATE: 162446

Parameter	Units	2623553001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623553

QC Batch: 500861
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623553001, 2623553002

METHOD BLANK: 2694298 Matrix: Water
Associated Lab Samples: 2623553001, 2623553002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/19 16:22	
Fluoride	mg/L	ND	0.10	0.050	10/01/19 16:22	
Sulfate	mg/L	ND	1.0	0.50	10/01/19 16:22	

LABORATORY CONTROL SAMPLE: 2694299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.2	98	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	
Sulfate	mg/L	50	50.4	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694300 2694301

Parameter	Units	2623559001 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	50	50	53.7	53.7	104	104	90-110	0	10	
Fluoride	mg/L	0.058J	2.5	2.5	2.5	2.5	98	99	90-110	1	10	
Sulfate	mg/L	20.7	50	50	72.4	72.6	103	104	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694302 2694303

Parameter	Units	2623584001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	89.4	50	50	132	133	86	87	90-110	1	10	M1
Fluoride	mg/L	0.42	2.5	2.5	4.2	4.3	152	153	90-110	1	10	M1
Sulfate	mg/L	142	50	50	177	180	69	74	90-110	2	10	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623553

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.
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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623553

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623553001	**FB-01**	EPA 3005A	36079	EPA 6020B	36104
2623553002	**EB-01**	EPA 3005A	36079	EPA 6020B	36104
2623553001	**FB-01**	SM 2540C	36029		
2623553002	**EB-01**	SM 2540C	36029		
2623553001	**FB-01**	EPA 300.0 Rev 2.1 1993	500861		
2623553002	**EB-01**	EPA 300.0 Rev 2.1 1993	500861		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N	N	N	N	N	N	
1	FB-01	WT	G	9/24/19	1715	9/24/19	1725	20	4	1		3						Y	Y	Y	Y	Y	Y	Y		
2	EB-01	WT	G	9/24/19	1730	9/24/19	1740	20	4	1		3						Y	Y	Y	Y	Y	Y	Y		
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

NM 09/24/19

WO# : 2623553

2623553

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Nadia Muskus / Geosyntec	9/23/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	M Zaiman	9/25/19	1423	
							3.0 / Y / Y / Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus DATE Signed: 09/24/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Powere Project #

WO#: 2623553

PM: BM Due Date: 10/02/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/25/19 MK

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623555

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623555

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623555

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623555001	**FB-01**	Water	09/24/19 17:25	09/25/19 14:03
2623555002	**EB-01**	Water	09/24/19 17:40	09/25/19 14:03

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110 Technology Parkway
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(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623555

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623555001	**FB-01**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623555002	**EB-01**	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
Pace Project No.: 2623555

Sample: FB-01 **Lab ID: 2623555001** Collected: 09/24/19 17:25 Received: 09/25/19 14:03 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.213 ± 0.236 (0.475) C:90% T:NA**	pCi/L	10/15/19 09:42	13982-63-3	
Radium-228	EPA 9320	**0.361 ± 0.477 (1.02) C:80% T:70%**	pCi/L	10/18/19 11:07	15262-20-1	
Total Radium	Total Radium Calculation	**0.574 ± 0.713 (1.50)**	pCi/L	10/21/19 11:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623555

Sample: EB-01 **Lab ID: 2623555002** Collected: 09/24/19 17:40 Received: 09/25/19 14:03 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.371 ± 0.265 (0.418) C:84% T:NA**	pCi/L	10/15/19 08:49	13982-63-3	
Radium-228	EPA 9320	**0.896 ± 0.500 (0.914) C:81% T:73%**	pCi/L	10/18/19 14:14	15262-20-1	
Total Radium	Total Radium Calculation	**1.27 ± 0.765 (1.33)**	pCi/L	10/21/19 11:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623555

QC Batch: 365380 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623555001, 2623555002

METHOD BLANK: 1772185 Matrix: Water
Associated Lab Samples: 2623555001, 2623555002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.766 ± 0.438 (0.794) C:80% T:71%	pCi/L	10/18/19 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623555

QC Batch: 365376 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623555001, 2623555002

METHOD BLANK: 1772181 Matrix: Water
Associated Lab Samples: 2623555001, 2623555002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.470 ± 0.253 (0.295) C:98% T:NA	pCi/L	10/15/19 08:49	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623555

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623555

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623555001	**FB-01**	EPA 9315	365376		
2623555002	**EB-01**	EPA 9315	365376		
2623555001	**FB-01**	EPA 9320	365380		
2623555002	**EB-01**	EPA 9320	365380		
2623555001	**FB-01**	Total Radium Calculation	367107		
2623555002	**EB-01**	Total Radium Calculation	367107		

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Requested Analysis Filtered (Y/N): GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N	N	N	N	N		
1	FB-01	WT	G	9/24/19	1715	9/24/19	1725	20	4	1		3							Y	Y	Y	Y	Y	Y	Y	
2	EB-01	WT	G	9/24/19	1730	9/24/19	1740	20	4	1		3							Y	Y	Y	Y	Y	Y	Y	
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

NM 09/24/19

WO# : 2623555

2623555

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Nadia Muskus/Geosyntec	9/23/19	20:10	Pace	9.23.19	1117	
	Pace	9.25.19	1403	M Kalman	9/25/19	1423	
							3.0 Y Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nadia Muskus

SIGNATURE of SAMPLER: Nadia Muskus

DATE Signed: 09/24/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Powere

Project #

WO# : 2623555

PM: BM **Due Date: 10/23/19**

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.0 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/25/19 MK

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623567

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623567

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623567

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623567001	**HGWC-8**	Water	09/24/19 15:50	09/25/19 14:03
2623567002	**MW-30d**	Water	09/24/19 16:40	09/25/19 14:03
2623567003	**MW-29**	Water	09/24/19 15:22	09/25/19 14:03

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623567

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623567001	**HGWC-8**	EPA 6020B	CSW	13	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623567002	**MW-30d**	EPA 6020B	CSW	13	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623567003	**MW-29**	EPA 6020B	CSW	13	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0	MWB	3	PASI-GA

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623567

Sample: HGWC-8 **Lab ID: 2623567001** Collected: 09/24/19 15:50 Received: 09/25/19 14:03 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	0.00027	1	09/28/19 14:58	10/02/19 18:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	09/28/19 14:58	10/02/19 18:43	7440-38-2	
Barium	**0.053**	mg/L	0.010	0.00049	1	09/28/19 14:58	10/02/19 18:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/28/19 14:58	10/02/19 18:43	7440-41-7	
Boron	**2.8**	mg/L	2.0	0.25	50	09/28/19 14:58	10/02/19 18:48	7440-42-8	M1
Cadmium	**0.00020J**	mg/L	0.0025	0.00011	1	09/28/19 14:58	10/02/19 18:43	7440-43-9	
Calcium	**113**	mg/L	5.0	0.55	50	09/28/19 14:58	10/02/19 18:48	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.00039	1	09/28/19 14:58	10/02/19 18:43	7440-47-3	
Cobalt	**0.0015J**	mg/L	0.0050	0.00030	1	09/28/19 14:58	10/02/19 18:43	7440-48-4	
Lithium	**0.0024J**	mg/L	0.030	0.00078	1	09/28/19 14:58	10/02/19 18:43	7439-93-2	
Molybdenum	**0.54**	mg/L	0.50	0.047	50	09/28/19 14:58	10/02/19 18:48	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/28/19 14:58	10/02/19 18:43	7782-49-2	
Thallium	**0.00011J**	mg/L	0.0010	0.000052	1	09/28/19 14:58	10/02/19 18:43	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**457**	mg/L	10.0	10.0	1		10/01/19 16:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**60.2**	mg/L	1.0	0.60	1		10/01/19 19:31	16887-00-6	
Fluoride	**0.49**	mg/L	0.30	0.050	1		10/01/19 19:31	16984-48-8	
Sulfate	**133**	mg/L	3.0	1.5	3		10/02/19 07:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623567

Sample: MW-30d **Lab ID: 2623567002** Collected: 09/24/19 16:40 Received: 09/25/19 14:03 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	**0.00046J**	mg/L	0.0030	0.00027	1	09/28/19 14:58	10/02/19 19:34	7440-36-0	
Arsenic	**0.0026J**	mg/L	0.0050	0.00035	1	09/28/19 14:58	10/02/19 19:34	7440-38-2	
Barium	**0.054**	mg/L	0.010	0.00049	1	09/28/19 14:58	10/02/19 19:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/28/19 14:58	10/02/19 19:34	7440-41-7	
Boron	**0.69**	mg/L	0.040	0.0049	1	09/28/19 14:58	10/02/19 19:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/28/19 14:58	10/02/19 19:34	7440-43-9	
Calcium	**34.2**	mg/L	5.0	0.55	50	09/28/19 14:58	10/02/19 19:40	7440-70-2	
Chromium	**0.00041J**	mg/L	0.010	0.00039	1	09/28/19 14:58	10/02/19 19:34	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/28/19 14:58	10/02/19 19:34	7440-48-4	
Lithium	**0.16**	mg/L	0.030	0.00078	1	09/28/19 14:58	10/02/19 19:34	7439-93-2	
Molybdenum	**0.036**	mg/L	0.010	0.00095	1	09/28/19 14:58	10/02/19 19:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/28/19 14:58	10/02/19 19:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/28/19 14:58	10/02/19 19:34	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1970**	mg/L	10.0	10.0	1		10/01/19 16:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**99.2**	mg/L	17.0	10.2	17		10/02/19 08:09	16887-00-6	
Fluoride	**5.7**	mg/L	5.1	0.85	17		10/02/19 08:09	16984-48-8	
Sulfate	**756**	mg/L	17.0	8.5	17		10/02/19 08:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623567

Sample: MW-29 **Lab ID: 2623567003** Collected: 09/24/19 15:22 Received: 09/25/19 14:03 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	0.00027	1	09/30/19 12:43	10/01/19 18:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	09/30/19 12:43	10/01/19 18:41	7440-38-2	
Barium	**0.081**	mg/L	0.010	0.00049	1	09/30/19 12:43	10/01/19 18:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/30/19 12:43	10/01/19 18:41	7440-41-7	
Boron	**1.2**	mg/L	0.040	0.0049	1	09/30/19 12:43	10/01/19 18:41	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/30/19 12:43	10/01/19 18:41	7440-43-9	
Calcium	**140**	mg/L	5.0	0.55	50	09/30/19 12:43	10/01/19 18:47	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	09/30/19 12:43	10/01/19 18:41	7440-47-3	
Cobalt	**0.0015J**	mg/L	0.0050	0.00030	1	09/30/19 12:43	10/01/19 18:41	7440-48-4	
Lithium	**0.0022J**	mg/L	0.030	0.00078	1	09/30/19 12:43	10/01/19 18:41	7439-93-2	
Molybdenum	**0.0021J**	mg/L	0.010	0.00095	1	09/30/19 12:43	10/01/19 18:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/30/19 12:43	10/01/19 18:41	7782-49-2	
Thallium	**0.000064J**	mg/L	0.0010	0.000052	1	09/30/19 12:43	10/01/19 18:41	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**603**	mg/L	10.0	10.0	1		10/01/19 16:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**83.8**	mg/L	10.0	0.24	10		10/01/19 04:32	16887-00-6	
Fluoride	**0.18J**	mg/L	0.30	0.029	1		09/30/19 20:15	16984-48-8	
Sulfate	**154**	mg/L	10.0	0.17	10		10/01/19 04:32	14808-79-8	M6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623567

QC Batch: 36136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623567001, 2623567002

METHOD BLANK: 163251 Matrix: Water
Associated Lab Samples: 2623567001, 2623567002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/02/19 18:26	
Arsenic	mg/L	ND	0.0050	0.00035	10/02/19 18:26	
Barium	mg/L	ND	0.010	0.00049	10/02/19 18:26	
Beryllium	mg/L	ND	0.0030	0.000074	10/02/19 18:26	
Boron	mg/L	ND	0.040	0.0049	10/02/19 18:26	
Cadmium	mg/L	ND	0.0025	0.00011	10/02/19 18:26	
Calcium	mg/L	ND	0.10	0.011	10/02/19 18:26	
Chromium	mg/L	ND	0.010	0.00039	10/02/19 18:26	
Cobalt	mg/L	ND	0.0050	0.00030	10/02/19 18:26	
Lithium	mg/L	ND	0.030	0.00078	10/02/19 18:26	
Molybdenum	mg/L	ND	0.010	0.00095	10/02/19 18:26	
Selenium	mg/L	ND	0.010	0.0013	10/02/19 18:26	
Thallium	mg/L	ND	0.0010	0.000052	10/02/19 18:26	

LABORATORY CONTROL SAMPLE: 163252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.099	99	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163253 163254

Parameter	Units	2623567001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	105	102	75-125	2	20	
Barium	mg/L	0.053	0.1	0.1	0.16	0.16	107	108	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623567

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163253 163254

Parameter	Units	2623567001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20	
Boron	mg/L	2.8	1	1	3.8	4.2	101	139	75-125	10	20	
Cadmium	mg/L	0.00020J	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Calcium	mg/L	113	1	1	105	114	-820	112	75-125	9	20	M6
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	103	103	75-125	0	20	
Cobalt	mg/L	0.0015J	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Lithium	mg/L	0.0024J	0.1	0.1	0.10	0.10	98	98	75-125	0	20	
Molybdenum	mg/L	0.54	0.1	0.1	0.63	0.64	85	93	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	103	101	75-125	2	20	
Thallium	mg/L	0.00011J	0.1	0.1	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
Pace Project No.: 2623567

QC Batch: 36170
QC Batch Method: EPA 3005A
Associated Lab Samples: 2623567003

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 163336 Matrix: Water
Associated Lab Samples: 2623567003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/01/19 18:14	
Arsenic	mg/L	ND	0.0050	0.00035	10/01/19 18:14	
Barium	mg/L	ND	0.010	0.00049	10/01/19 18:14	
Beryllium	mg/L	ND	0.0030	0.000074	10/01/19 18:14	
Boron	mg/L	ND	0.040	0.0049	10/01/19 18:14	
Cadmium	mg/L	ND	0.0025	0.00011	10/01/19 18:14	
Calcium	mg/L	ND	0.10	0.011	10/01/19 18:14	
Chromium	mg/L	ND	0.010	0.00039	10/01/19 18:14	
Cobalt	mg/L	ND	0.0050	0.00030	10/01/19 18:14	
Lithium	mg/L	ND	0.030	0.00078	10/01/19 18:14	
Molybdenum	mg/L	ND	0.010	0.00095	10/01/19 18:14	
Selenium	mg/L	ND	0.010	0.0013	10/01/19 18:14	
Thallium	mg/L	ND	0.0010	0.000052	10/01/19 18:14	

LABORATORY CONTROL SAMPLE: 163337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	105	102	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Barium	mg/L	0.017	0.1	0.1	0.13	0.12	109	106	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623567

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	0.000084J	0.1	0.1	0.10	0.093	102	93	75-125	9	20	
Boron	mg/L	0.0072J	1	1	1.0	0.95	100	94	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	2	20	
Calcium	mg/L	1.1	1	1	2.1	2.1	97	94	75-125	1	20	
Chromium	mg/L	0.00076J	0.1	0.1	0.10	0.10	101	101	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20	
Lithium	mg/L	0.0029J	0.1	0.1	0.10	0.097	102	94	75-125	7	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	108	104	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	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.: 2623567

QC Batch: 36262 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623567001, 2623567002, 2623567003

LABORATORY CONTROL SAMPLE: 163778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	357	89	84-108	

SAMPLE DUPLICATE: 163780

Parameter	Units	2623620001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	146	139	5	10	

SAMPLE DUPLICATE: 163844

Parameter	Units	2623559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	133	124	7	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623567

QC Batch: 36185
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623567003

METHOD BLANK: 163390 Matrix: Water
Associated Lab Samples: 2623567003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.033J	1.0	0.024	09/30/19 18:32	
Fluoride	mg/L	ND	0.30	0.029	09/30/19 18:32	
Sulfate	mg/L	ND	1.0	0.017	09/30/19 18:32	

LABORATORY CONTROL SAMPLE: 163391

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.7	107	90-110	
Fluoride	mg/L	10	10.7	107	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163392 163393

Parameter	Units	2623317001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	46.0	20	20	61.9	61.6	79	78	90-110	0	15	M1
Fluoride	mg/L	0.94	20	20	21.7	22.3	104	107	90-110	3	15	

MATRIX SPIKE SAMPLE: 163394

Parameter	Units	2623567003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	83.8	100	181	97	90-110	
Fluoride	mg/L	0.18J	100	101	101	90-110	
Sulfate	mg/L	154	100	242	88	90-110	M6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623567

QC Batch: 500861
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623567001, 2623567002

METHOD BLANK: 2694298 Matrix: Water
Associated Lab Samples: 2623567001, 2623567002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/19 16:22	
Fluoride	mg/L	ND	0.10	0.050	10/01/19 16:22	
Sulfate	mg/L	ND	1.0	0.50	10/01/19 16:22	

LABORATORY CONTROL SAMPLE: 2694299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.2	98	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	
Sulfate	mg/L	50	50.4	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694300 2694301

Parameter	Units	2623559001 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	50	50	53.7	53.7	104	104	90-110	0	10	
Fluoride	mg/L	0.058J	2.5	2.5	2.5	2.5	98	99	90-110	1	10	
Sulfate	mg/L	20.7	50	50	72.4	72.6	103	104	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694302 2694303

Parameter	Units	2623584001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	89.4	50	50	132	133	86	87	90-110	1	10	M1
Fluoride	mg/L	0.42	2.5	2.5	4.2	4.3	152	153	90-110	1	10	M1
Sulfate	mg/L	142	50	50	177	180	69	74	90-110	2	10	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623567

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623567

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623567001	**HGWC-8**	EPA 3005A	36136	EPA 6020B	36312
2623567002	**MW-30d**	EPA 3005A	36136	EPA 6020B	36312
2623567003	**MW-29**	EPA 3005A	36170	EPA 6020B	36202
2623567001	**HGWC-8**	SM 2540C	36262		
2623567002	**MW-30d**	SM 2540C	36262		
2623567003	**MW-29**	SM 2540C	36262		
2623567001	**HGWC-8**	EPA 300.0 Rev 2.1 1993	500861		
2623567002	**MW-30d**	EPA 300.0 Rev 2.1 1993	500861		
2623567003	**MW-29**	EPA 300.0	36185		

Pace Analytical

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	Attention: scsinvoices@southernco.com
Address: 2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:
Atlanta, GA 30339		Address:
Email: jabraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: betsy.mcdaniel@pacelabs.com,
Requested Due Date: Standard TAT	Project #: GW6581	Pace Profile #: 327 (AP)

Regulatory Agency:

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): N N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-8	WT	G	9/24/19	1408	9/24/19	1550	24	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

NM 09/24/19

WO# : 2623567
2623567

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Noelia Muskus/Geosyntec	9/24/19	20:10	[signature] / Pace	9.23.19	1117
	[signature] / Pace	9.25.19	1403	M Laliman	9/25/19	1403

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Noelia Muskus
SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/24/19

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 3 Of 3

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): N N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-30d	WT	G	9/24/19	16:12	9/24/19	16:40	23.6	4	1	3								Y	Y	Y	Y	Y	Y	Y	N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

DC 09-24-19

WO#: 2623567

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature] / Geosyntec	09/24/19	18:10	Nolia Munkres / Geosyntec	9/24/19	1810
	Nolia Munkres / Geosyntec	9/24/19	20:10	[signature] / Pace	9.25.19	1117
	[signature] / Pace	9.25.19	1403	M Dalman	9/25/19	1403

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Gebers

SIGNATURE of SAMPLER: [signature] DATE Signed: 9-24-2019

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

Page: 2 Of 3

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): N N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
1	MW-29	WT	G	9.24.19	1313	9.24.19	1522	22	4	1		3							Y	Y	Y	Y	Y	Y	Y	N	~~field filtered~~ (BM)
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BW 9/24/19

WO#: 2623567

PM: BM Due Date: 10/02/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Ben Weinmann / Geosyntec	9.24.19	1634	Malia Martin	9/24/19	1634
	Malia Martin / Geo	9/24/19	20:10	[illegible] / Pace	9.25.19	1157
	[illegible] / Pace	9.25.19	1403	M Daluman	9/25/19	1403

SAMPLE CONDITIONS	
TEMP in C	0.3
Received on Ice (Y/N)	Y
Custody Sealed Cooler (Y/N)	Y
Samples Intact (Y/N)	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: [signature]

DATE Signed: 9.24.19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #
WO#: 2623567

PM: BM **Due Date: 10/02/19**
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 8.3 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.3 **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 9/25/19 MR

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: There was no sample received for MW-29. There was 1 extra sample labeled HGWC-7 Present but was not listed on COC. The client was notified and the lab was instructed to log in that sample as MW-29.

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

October 23, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623571

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623571

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623571

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623571001	**HGWC-8**	Water	09/24/19 15:50	09/25/19 14:03
2623571002	**MW-30d**	Water	09/24/19 16:40	09/25/19 14:03
2623571003	**MW-29**	Water	09/24/19 15:22	09/25/19 14:03

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623571

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623571001	**HGWC-8**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623571002	**MW-30d**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623571003	**MW-29**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

Sample: HGWC-8 **Lab ID: 2623571001** Collected: 09/24/19 15:50 Received: 09/25/19 14:03 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.652 ± 0.250 (0.366) C:92% T:NA**	pCi/L	10/15/19 17:42	13982-63-3	
Radium-228	EPA 9320	**0.648 ± 0.416 (0.784) C:78% T:81%**	pCi/L	10/18/19 14:13	15262-20-1	
Total Radium	Total Radium Calculation	**1.30 ± 0.666 (1.15)**	pCi/L	10/21/19 11:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

Sample: MW-30d **Lab ID: 2623571002** Collected: 09/24/19 16:40 Received: 09/25/19 14:03 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.416 ± 0.182 (0.260) C:95% T:NA**	pCi/L	10/15/19 17:39	13982-63-3	
Radium-228	EPA 9320	**0.744 ± 0.470 (0.901) C:80% T:83%**	pCi/L	10/18/19 14:13	15262-20-1	
Total Radium	Total Radium Calculation	**1.16 ± 0.652 (1.16)**	pCi/L	10/21/19 11:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

Sample: MW-29 **Lab ID: 2623571003** Collected: 09/24/19 15:22 Received: 09/25/19 14:03 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.451 ± 0.194 (0.274) C:86% T:NA**	pCi/L	10/14/19 18:00	13982-63-3	
Radium-228	EPA 9320	**0.224 ± 0.336 (0.724) C:79% T:82%**	pCi/L	10/16/19 13:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.675 ± 0.530 (0.998)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

QC Batch: 365381 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623571001, 2623571002

METHOD BLANK: 1772186 Matrix: Water
Associated Lab Samples: 2623571001, 2623571002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0377 ± 0.401 (0.924) C:77% T:72%	pCi/L	10/18/19 14:14	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

QC Batch: 365001 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623571003

METHOD BLANK: 1770530 Matrix: Water
Associated Lab Samples: 2623571003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.564 ± 0.187 (0.181) C:94% T:NA	pCi/L	10/14/19 19:10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

QC Batch: 365377 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623571001, 2623571002

METHOD BLANK: 1772182 Matrix: Water
Associated Lab Samples: 2623571001, 2623571002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.373 ± 0.153 (0.180) C:94% T:NA	pCi/L	10/15/19 19:08	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623571

QC Batch: 365002 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623571003

METHOD BLANK: 1770531 Matrix: Water
Associated Lab Samples: 2623571003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.538 ± 0.357 (0.676) C:80% T:85%	pCi/L	10/16/19 11:11	

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623571

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623571

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623571001	**HGWC-8**	EPA 9315	365377		
2623571002	**MW-30d**	EPA 9315	365377		
2623571003	**MW-29**	EPA 9315	365001		
2623571001	**HGWC-8**	EPA 9320	365381		
2623571002	**MW-30d**	EPA 9320	365381		
2623571003	**MW-29**	EPA 9320	365002		
2623571001	**HGWC-8**	Total Radium Calculation	367110		
2623571002	**MW-30d**	Total Radium Calculation	367110		
2623571003	**MW-29**	Total Radium Calculation	367489		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	petsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Requested Analysis Filtered (Y/N): Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228		Residual Chlorine (Y/N)
																		N	N	N	N	N	N	N			
1	HGWC-8	WT	G	9/24/19	1408	9/24/19	1550	22	4	1		3						Y	Y	Y	Y	Y	Y	Y			N
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

NM 09/24/19

WO# : 2623571

2623571

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus/Geosyntec	9/24/19	2040	Ypace	9.23.19	1117	
	Ypace	9.25.19	1403	M Zalimas	9/25/19	1403	
							0.3

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Noelia Muskus			Y	Y	Y
SIGNATURE of SAMPLER:	Noelia Muskus	DATE Signed: 09/24/19				

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	N	N	
1	MW-30d	WT	G	9/24/19	16:12	9/24/19	16:40	29.6	9	1	3							Y	Y	Y	Y	Y	Y	Y	Y	N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

09-24-19

WO#: 2623571

PM: BM Due Date: 10/23/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Person / Georgia	09/24/19	18:10	Mollie Munkus / Geosyntec	9/24/19	1810	
	Mollie Munkus / Geosyntec	9/24/19	20:10	Pace	9.25.19	1117	
	Pace	9.25.19	1403	M Zalman	9/25/19	1403	

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER:

DATE Signed: 9-24-2019

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 Of 3

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency:
State / Location: GA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): N N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
1	MW-29	WT	G	9.24.19	1313	9.24.19	1522	22	4	1		3							Y	Y	Y	Y	Y	Y	Y	N	~~field filtered~~
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BOW 9/24/19

WO#: 2623571
PM: BM Due Date: 10/23/19
CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Ben Weinmann / Geosyntec	9.24.19	1634	Modia Martin	9/24/19	1634				
	Modia Martin / Geo	9/24/19	20:10	[illegible] / Pace	9.25.19	1117				
	[illegible] / Pace	9.25.19	1403	M Lalman	9/25/19	1403	0.3	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben W

DATE Signed: 9.24.19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project # WO#: 2623571

PM: BM Due Date: 10/23/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/25/19 MR

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: There was no sample received for MW-29. There was 1 extra sample labeled HGWC-7 present but was not listed on COC. The client was notified and the lab was instructed to log in that sample as MW-29.

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

December 13, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 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,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623639001	**HGWC-7**	Water	09/25/19 11:22	09/26/19 15:22
2623639002	**MW-20**	Water	09/25/19 11:10	09/26/19 15:22
2623639003	**MW-5**	Water	09/25/19 16:35	09/26/19 15:22

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623639001	**HGWC-7**	EPA 6020B	CSW	13	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623639002	**MW-20**	EPA 6020B	CSW	13	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623639003	**MW-5**	EPA 6020B	CSW	13	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Sample: HGWC-7 **Lab ID: 2623639001** Collected: 09/25/19 11:22 Received: 09/26/19 15:22 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	0.00027	1	09/30/19 12:43	10/01/19 22:30	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	09/30/19 12:43	10/01/19 22:30	7440-38-2	
Barium	**0.061**	mg/L	0.010	0.00049	1	09/30/19 12:43	10/01/19 22:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/30/19 12:43	10/01/19 22:30	7440-41-7	
Boron	**1.1**	mg/L	0.040	0.0049	1	09/30/19 12:43	10/01/19 22:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/30/19 12:43	10/01/19 22:30	7440-43-9	
Calcium	**105**	mg/L	5.0	0.55	50	09/30/19 12:43	10/01/19 22:36	7440-70-2	
Chromium	**0.071**	mg/L	0.010	0.00039	1	09/30/19 12:43	10/01/19 22:30	7440-47-3	
Cobalt	**0.0026J**	mg/L	0.0050	0.00030	1	09/30/19 12:43	10/01/19 22:30	7440-48-4	
Lithium	**0.0019J**	mg/L	0.030	0.00078	1	09/30/19 12:43	10/01/19 22:30	7439-93-2	
Molybdenum	**0.047**	mg/L	0.010	0.00095	1	09/30/19 12:43	10/01/19 22:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/30/19 12:43	10/01/19 22:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/30/19 12:43	10/01/19 22:30	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**503**	mg/L	10.0	10.0	1		10/02/19 16:02		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**49.8**	mg/L	1.0	0.60	1		10/01/19 19:01	16887-00-6	
Fluoride	**0.10J**	mg/L	0.30	0.050	1		10/01/19 19:01	16984-48-8	
Sulfate	**109**	mg/L	2.0	1.0	2		10/02/19 00:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Sample: MW-20 **Lab ID: 2623639002** Collected: 09/25/19 11:10 Received: 09/26/19 15:22 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	0.00027	1	09/30/19 12:43	10/01/19 21:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	09/30/19 12:43	10/01/19 21:21	7440-38-2	
Barium	**0.085**	mg/L	0.010	0.00049	1	09/30/19 12:43	10/01/19 21:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/30/19 12:43	10/01/19 21:21	7440-41-7	
Boron	**0.091**	mg/L	0.040	0.0049	1	09/30/19 12:43	10/01/19 21:21	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/30/19 12:43	10/01/19 21:21	7440-43-9	
Calcium	**113**	mg/L	5.0	0.55	50	09/30/19 12:43	10/01/19 21:27	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	09/30/19 12:43	10/01/19 21:21	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/30/19 12:43	10/01/19 21:21	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	09/30/19 12:43	10/01/19 21:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/30/19 12:43	10/01/19 21:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/30/19 12:43	10/01/19 21:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/30/19 12:43	10/01/19 21:21	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**461**	mg/L	10.0	10.0	1		10/02/19 16:02		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**25.7**	mg/L	1.0	0.60	1		10/01/19 19:16	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/01/19 19:16	16984-48-8	
Sulfate	**112**	mg/L	2.0	1.0	2		10/02/19 00:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Sample: MW-5 **Lab ID: 2623639003** Collected: 09/25/19 16:35 Received: 09/26/19 15:22 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	0.00027	1	09/30/19 12:43	10/01/19 22:42	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	09/30/19 12:43	10/01/19 22:42	7440-38-2	
Barium	**0.046**	mg/L	0.010	0.00049	1	09/30/19 12:43	10/01/19 22:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/30/19 12:43	10/01/19 22:42	7440-41-7	
Boron	**0.11**	mg/L	0.040	0.0049	1	09/30/19 12:43	10/01/19 22:42	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	09/30/19 12:43	10/01/19 22:42	7440-43-9	
Calcium	**105**	mg/L	5.0	0.55	50	09/30/19 12:43	10/01/19 22:47	7440-70-2	
Chromium	**0.0052J**	mg/L	0.010	0.00039	1	09/30/19 12:43	10/01/19 22:42	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	09/30/19 12:43	10/01/19 22:42	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	09/30/19 12:43	10/01/19 22:42	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/30/19 12:43	10/01/19 22:42	7439-98-7	
Selenium	**0.0021J**	mg/L	0.010	0.0013	1	09/30/19 12:43	10/01/19 22:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	09/30/19 12:43	10/01/19 22:42	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**460**	mg/L	10.0	10.0	1		10/02/19 16:02		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**35.9**	mg/L	1.0	0.60	1		10/01/19 19:30	16887-00-6	
Fluoride	**0.076J**	mg/L	0.30	0.050	1		10/01/19 19:30	16984-48-8	
Sulfate	**134**	mg/L	3.0	1.5	3		10/02/19 00:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

QC Batch: 36170 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623639001, 2623639002, 2623639003

METHOD BLANK: 163336 Matrix: Water
Associated Lab Samples: 2623639001, 2623639002, 2623639003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/01/19 18:14	
Arsenic	mg/L	ND	0.0050	0.00035	10/01/19 18:14	
Barium	mg/L	ND	0.010	0.00049	10/01/19 18:14	
Beryllium	mg/L	ND	0.0030	0.000074	10/01/19 18:14	
Boron	mg/L	ND	0.040	0.0049	10/01/19 18:14	
Cadmium	mg/L	ND	0.0025	0.00011	10/01/19 18:14	
Calcium	mg/L	ND	0.10	0.011	10/01/19 18:14	
Chromium	mg/L	ND	0.010	0.00039	10/01/19 18:14	
Cobalt	mg/L	ND	0.0050	0.00030	10/01/19 18:14	
Lithium	mg/L	ND	0.030	0.00078	10/01/19 18:14	
Molybdenum	mg/L	ND	0.010	0.00095	10/01/19 18:14	
Selenium	mg/L	ND	0.010	0.0013	10/01/19 18:14	
Thallium	mg/L	ND	0.0010	0.000052	10/01/19 18:14	

LABORATORY CONTROL SAMPLE: 163337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	105	102	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Barium	mg/L	0.017	0.1	0.1	0.13	0.12	109	106	75-125	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	0.000084J	0.1	0.1	0.10	0.093	102	93	75-125	9	20	
Boron	mg/L	0.0072J	1	1	1.0	0.95	100	94	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	2	20	
Calcium	mg/L	1.1	1	1	2.1	2.1	97	94	75-125	1	20	
Chromium	mg/L	0.00076J	0.1	0.1	0.10	0.10	101	101	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20	
Lithium	mg/L	0.0029J	0.1	0.1	0.10	0.097	102	94	75-125	7	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	108	104	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

QC Batch: 36344 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623639001, 2623639002, 2623639003

LABORATORY CONTROL SAMPLE: 164074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	419	105	84-108	

SAMPLE DUPLICATE: 164075

Parameter	Units	2623639001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	503	491	2	10	

SAMPLE DUPLICATE: 164076

Parameter	Units	2623623008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	126	119	6	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

QC Batch: 500864 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623639001, 2623639002, 2623639003

METHOD BLANK: 2694310 Matrix: Water
Associated Lab Samples: 2623639001, 2623639002, 2623639003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/19 17:49	
Fluoride	mg/L	ND	0.10	0.050	10/01/19 17:49	
Sulfate	mg/L	ND	1.0	0.50	10/01/19 17:49	

LABORATORY CONTROL SAMPLE: 2694311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.0	98	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694312 2694313

Parameter	Units	2623620013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	17.1	50	50	74.9	69.9	115	105	90-110	7	10	M1
Fluoride	mg/L	0.064J	2.5	2.5	2.9	2.7	115	104	90-110	10	10	M1
Sulfate	mg/L	80.1	50	50	123	123	85	86	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2694314 2694315

Parameter	Units	92447530001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.7	50	50	76.0	75.5	107	106	90-110	1	10	
Fluoride	mg/L	0.073J	2.5	2.5	2.7	2.7	107	106	90-110	1	10	
Sulfate	mg/L	10.1	50	50	64.0	63.6	108	107	90-110	1	10	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623639

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623639001	**HGWC-7**	EPA 3005A	36170	EPA 6020B	36202
2623639002	**MW-20**	EPA 3005A	36170	EPA 6020B	36202
2623639003	**MW-5**	EPA 3005A	36170	EPA 6020B	36202
2623639001	**HGWC-7**	SM 2540C	36344		
2623639002	**MW-20**	SM 2540C	36344		
2623639003	**MW-5**	SM 2540C	36344		
2623639001	**HGWC-7**	EPA 300.0 Rev 2.1 1993	500864		
2623639002	**MW-20**	EPA 300.0 Rev 2.1 1993	500864		
2623639003	**MW-5**	EPA 300.0 Rev 2.1 1993	500864		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 2

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com
Address: 2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:
Atlanta, GA 30339		Address:
Email: jabraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: betsy.mcdaniel@pacelabs.com,
Requested Due Date: Standard TAT	Project #: GU6581	Pace Profile #: 327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	N			
1	HGWC-7	WT	G	9.25.19	1045	9.25.19	1122	21	4	1		3						Y	Y	Y	Y	Y	Y	Y	N	~~sulfate~~ (WM)	1
2																										~~Boron~~ (WM)	
3																										~~filtered~~ (WM)	
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

BRW 9/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9.25.19	1745	Nadia Mankus / Geosyntec	9/25/19	1745	
	Nadia Mankus / Geosyntec	9/25/19	1915	Pace	9.26.19	1135	
	Pace	9.26.19	1522	Charles Hurle	9/26/19	1522	4.0 X Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: [signature] DATE Signed: 9.25.19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.0	X	Y	Y

Page 1 of 2

WO#: 2623639

2623639

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GWC581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test	Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
1	MW-20	WT	G	9/25/19	1033	9/25/19	1110	20	4	1		3							N	Y	Y	Y	Y	Y	Y	Y	N	2
2	MW-5	WT	G	9/25/19	1609	9/25/19	1635	20	4	1		3							N	Y	Y	Y	Y	Y	Y	Y	N	3
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

NM 09/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus Geosyntec	9/25/19	1915	1 Pace	9.26.A	1195	
	1 Pace	9.26.19	1522	Charles Hanlon	9/26/19	1522	4.0 Y Y Y

WO#: 2623639

PM: BM Due Date: 10/03/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/25/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.0	Y	Y	Y

Pace Analytical

Sample Condition Upon Rece

Client Name: GA Power

WO#: 2623639

PM: BM Due Date: 10/03/19

CLIENT: GAPower-CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Othe ___

Tracking #: _____

Proj. Name:

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

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 214

Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.10

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/26/19 CH

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 29, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP
Pace Project No.: 2623640

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond AP
Pace Project No.: 2623640

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond AP
Pace Project No.: 2623640

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623640001	**HGWC-7**	Water	09/25/19 11:22	09/26/19 15:22
2623640002	**MW-20**	Water	09/25/19 11:10	09/26/19 15:22
2623640003	**MW-5**	Water	09/25/19 16:35	09/26/19 15:22

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SAMPLE ANALYTE COUNT

Project: Plant Hammond AP
Pace Project No.: 2623640

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623640001	**HGWC-7**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623640002	**MW-20**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623640003	**MW-5**	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 AP
Pace Project No.: 2623640

Sample: HGWC-7 **Lab ID: 2623640001** Collected: 09/25/19 11:22 Received: 09/26/19 15:22 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.341 ± 0.258 (0.445) C:96% T:NA**	pCi/L	10/16/19 08:23	13982-63-3	
Radium-228	EPA 9320	**0.543 ± 0.399 (0.764) C:66% T:78%**	pCi/L	10/22/19 15:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.884 ± 0.657 (1.21)**	pCi/L	10/24/19 12:46	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP
Pace Project No.: 2623640

Sample: MW-20 **Lab ID: 2623640002** Collected: 09/25/19 11:10 Received: 09/26/19 15:22 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.764 ± 0.365 (0.476) C:86% T:NA**	pCi/L	10/16/19 08:23	13982-63-3	
Radium-228	EPA 9320	**0.586 ± 0.471 (0.933) C:58% T:83%**	pCi/L	10/22/19 15:59	15262-20-1	
Total Radium	Total Radium Calculation	**1.35 ± 0.836 (1.41)**	pCi/L	10/24/19 12:46	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP
Pace Project No.: 2623640

Sample: MW-5 **Lab ID: 2623640003** Collected: 09/25/19 16:35 Received: 09/26/19 15:22 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.642 ± 0.439 (0.772) C:64% T:NA**	pCi/L	10/16/19 08:24	13982-63-3	
Radium-228	EPA 9320	**0.156 ± 0.282 (0.617) C:76% T:94%**	pCi/L	10/22/19 15:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.798 ± 0.721 (1.39)**	pCi/L	10/24/19 12:46	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP
Pace Project No.: 2623640

QC Batch: 365382 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623640001, 2623640002, 2623640003

METHOD BLANK: 1772187 Matrix: Water
Associated Lab Samples: 2623640001, 2623640002, 2623640003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.573 ± 0.379 (0.723) C:78% T:84%	pCi/L	10/22/19 15:57	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP
Pace Project No.: 2623640

QC Batch: 365379 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623640001, 2623640002, 2623640003

METHOD BLANK: 1772184 Matrix: Water
Associated Lab Samples: 2623640001, 2623640002, 2623640003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.298 ± 0.261 (0.477) C:93% T:NA	pCi/L	10/16/19 08:22	

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

Pace Analytical Services, LLC
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QUALIFIERS

Project: Plant Hammond AP
Pace Project No.: 2623640

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP
Pace Project No.: 2623640

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623640001	**HGWC-7**	EPA 9315	365379		
2623640002	**MW-20**	EPA 9315	365379		
2623640003	**MW-5**	EPA 9315	365379		
2623640001	**HGWC-7**	EPA 9320	365382		
2623640002	**MW-20**	EPA 9320	365382		
2623640003	**MW-5**	EPA 9320	365382		
2623640001	**HGWC-7**	Total Radium Calculation	367752		
2623640002	**MW-20**	Total Radium Calculation	367752		
2623640003	**MW-5**	Total Radium Calculation	367752		

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GU6581	Pace Profile #:	327 (AP

REGULATORY AGENCY: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analyses Filtered (Y/N): Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
1	HGWC-7	WT	G	9.25.19	1045	9.25.19	1122	21°	4	1		3						N	Y	Y	Y	Y	Y	Y	Y	N	
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

BRW 9/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9.25.19	1745	Yolia Winkus / Geosyntec	9/25/19	1745	
	Yolia Winkus / Geosyntec	9/25/19	1915	Pace	9.26.19	1135	
	Pace	9.26.19	1522	Charles Hunter	9/26/19	1522	4°C Y X Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: DATE Signed: 9.25.19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO#: 2623640

2623640

Pace Analytical

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GWC5581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Requested Analysis Filtered (Y/N)

Site/Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Y/N	2	2	2	2	2	2	2	
1	MW-20	WT	G	9/25/19	1033	9/25/19	1110	20	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
2	MW-5	WT	G	9/25/19	1609	9/25/19	1635	20	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

NM 09/25/19

Pace Project No. 26236 40

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus Georgia Power	9/25/19	1915	Pace	9.26.19	1195	
	Pace	9.26.19	1522		9/26/19	1522	4.0 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 09/25/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

Sample Condition Upon Recei

WO# : 2623640

Client Name: GA Power

PM: BM **Due Date: 10/24/19**

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 214

Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.10

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/26/19 CH

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 13, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623693

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623693

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623693

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623693001	**FD-01**	Water	09/24/19 00:00	09/27/19 13:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623693

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623693001	**FD-01**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623693

Sample: FD-01 **Lab ID: 2623693001** Collected: 09/24/19 00:00 Received: 09/27/19 13:30 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	0.00027	1	09/30/19 12:43	10/01/19 22:53	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	09/30/19 12:43	10/01/19 22:53	7440-38-2	
Barium	**0.052**	mg/L	0.010	0.00049	1	09/30/19 12:43	10/01/19 22:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	09/30/19 12:43	10/01/19 22:53	7440-41-7	
Boron	**2.7**	mg/L	2.0	0.25	50	09/30/19 12:43	10/01/19 22:59	7440-42-8	
Cadmium	**0.00019J**	mg/L	0.0025	0.00011	1	09/30/19 12:43	10/01/19 22:53	7440-43-9	
Calcium	**104**	mg/L	5.0	0.55	50	09/30/19 12:43	10/01/19 22:59	7440-70-2	
Chromium	**0.0027J**	mg/L	0.010	0.00039	1	09/30/19 12:43	10/01/19 22:53	7440-47-3	
Cobalt	**0.0016J**	mg/L	0.0050	0.00030	1	09/30/19 12:43	10/01/19 22:53	7440-48-4	
Lithium	**0.0023J**	mg/L	0.030	0.00078	1	09/30/19 12:43	10/01/19 22:53	7439-93-2	
Molybdenum	**0.53**	mg/L	0.010	0.00095	1	09/30/19 12:43	10/01/19 22:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	09/30/19 12:43	10/01/19 22:53	7782-49-2	
Thallium	**0.000074J**	mg/L	0.0010	0.000052	1	09/30/19 12:43	10/01/19 22:53	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**391**	mg/L	10.0	10.0	1		10/01/19 16:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**61.3**	mg/L	20.0	0.48	20		10/01/19 04:53	16887-00-6	
Fluoride	**0.63**	mg/L	0.30	0.029	1		09/30/19 20:57	16984-48-8	
Sulfate	**159**	mg/L	20.0	0.34	20		10/01/19 04:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623693

QC Batch: 36170
QC Batch Method: EPA 3005A
Associated Lab Samples: 2623693001

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 163336 Matrix: Water
Associated Lab Samples: 2623693001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/01/19 18:14	
Arsenic	mg/L	ND	0.0050	0.00035	10/01/19 18:14	
Barium	mg/L	ND	0.010	0.00049	10/01/19 18:14	
Beryllium	mg/L	ND	0.0030	0.000074	10/01/19 18:14	
Boron	mg/L	ND	0.040	0.0049	10/01/19 18:14	
Cadmium	mg/L	ND	0.0025	0.00011	10/01/19 18:14	
Calcium	mg/L	ND	0.10	0.011	10/01/19 18:14	
Chromium	mg/L	ND	0.010	0.00039	10/01/19 18:14	
Cobalt	mg/L	ND	0.0050	0.00030	10/01/19 18:14	
Lithium	mg/L	ND	0.030	0.00078	10/01/19 18:14	
Molybdenum	mg/L	ND	0.010	0.00095	10/01/19 18:14	
Selenium	mg/L	ND	0.010	0.0013	10/01/19 18:14	
Thallium	mg/L	ND	0.0010	0.000052	10/01/19 18:14	

LABORATORY CONTROL SAMPLE: 163337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	105	102	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Barium	mg/L	0.017	0.1	0.1	0.13	0.12	109	106	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623693

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163338 163339

Parameter	Units	2623623007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	0.000084J	0.1	0.1	0.10	0.093	102	93	75-125	9	20	
Boron	mg/L	0.0072J	1	1	1.0	0.95	100	94	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	2	20	
Calcium	mg/L	1.1	1	1	2.1	2.1	97	94	75-125	1	20	
Chromium	mg/L	0.00076J	0.1	0.1	0.10	0.10	101	101	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20	
Lithium	mg/L	0.0029J	0.1	0.1	0.10	0.097	102	94	75-125	7	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	108	104	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623693

QC Batch: 36262
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623693001

LABORATORY CONTROL SAMPLE: 163778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	357	89	84-108	

SAMPLE DUPLICATE: 163780

Parameter	Units	2623620001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	146	139	5	10	

SAMPLE DUPLICATE: 163844

Parameter	Units	2623559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	133	124	7	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623693

QC Batch: 36185
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623693001

METHOD BLANK: 163390 Matrix: Water
Associated Lab Samples: 2623693001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.033J	1.0	0.024	09/30/19 18:32	
Fluoride	mg/L	ND	0.30	0.029	09/30/19 18:32	
Sulfate	mg/L	ND	1.0	0.017	09/30/19 18:32	

LABORATORY CONTROL SAMPLE: 163391

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.7	107	90-110	
Fluoride	mg/L	10	10.7	107	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163392 163393

Parameter	Units	2623317001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	46.0	20	20	61.9	61.6	79	78	90-110	0	15	M1
Fluoride	mg/L	0.94	20	20	21.7	22.3	104	107	90-110	3	15	

MATRIX SPIKE SAMPLE: 163394

Parameter	Units	2623567003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	83.8	100	181	97	90-110	
Fluoride	mg/L	0.18J	100	101	101	90-110	
Sulfate	mg/L	154	100	242	88	90-110	M6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623693

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623693

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623693001	**FD-01**	EPA 3005A	36170	EPA 6020B	36202
2623693001	**FD-01**	SM 2540C	36262		
2623693001	**FD-01**	EPA 300.0	36185		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : | Of |

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GWG501	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	FD-01	WT	G	9/24/19	—	9/24/19	—	24	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

NM 09/24/19

WO# : 2623693

2623693

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
COC for field duplicate from 9/24/19	Noelia Muskus/Geosyntec	9/24/19	2010	J Mueller/Pace	9/27/19	1142				
				MDahman	09/27/19	1330	0.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/24/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other

WO#: 2623693

Tracking #:

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

PM: BM Due Date: 10/04/19

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 0.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/19 MR

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 29, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623694

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623694

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623694

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623694001	**FD-01**	Water	09/24/19 00:00	09/27/19 13:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623694

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623694001	**FD-01**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623694

Sample: FD-01 **Lab ID: 2623694001** Collected: 09/24/19 00:00 Received: 09/27/19 13:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.670 ± 0.371 (0.441) C:64% T:NA**	pCi/L	10/16/19 07:52	13982-63-3	
Radium-228	EPA 9320	**0.152 ± 0.397 (0.887) C:67% T:82%**	pCi/L	10/22/19 15:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.822 ± 0.768 (1.33)**	pCi/L	10/24/19 12:46	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623694

QC Batch: 365382 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623694001

METHOD BLANK: 1772187 Matrix: Water
Associated Lab Samples: 2623694001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.573 ± 0.379 (0.723) C:78% T:84%	pCi/L	10/22/19 15:57	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623694

QC Batch: 365379
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623694001

METHOD BLANK: 1772184
Matrix: Water
Associated Lab Samples: 2623694001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.298 ± 0.261 (0.477) C:93% T:NA	pCi/L	10/16/19 08:22	

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Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623694

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623694

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623694001	**FD-01**	EPA 9315	365379		
2623694001	**FD-01**	EPA 9320	365382		
2623694001	**FD-01**	Total Radium Calculation	367752		

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GAW6581	Pace Profile #:	327 (AP)

GA

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228		Residual Chlorine (Y/N)
1	FD-01	WT	G	9/24/19	—	9/24/19	—	2	4	1		3						N	Y	Y	Y	Y	Y	Y	Y			N
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

AJM 09/24/19

WO# : 2623694

2623694

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
COC for field duplicate from 9/24/19	Noelia Muskus/Georgia	9/24/19	2010	J Muller/Pace	9/27/19	1147	
				M Zalman	09/27/19	1330	

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Noelia Muskus		0.3	Y	Y	Y
SIGNATURE of SAMPLER:	Noelia Muskus	DATE Signed: 9/24/19				

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO# : 2623694

PM: BM Due Date: 10/25/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/19 MR

Temp should be above freezing to 6°C Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 13, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623712

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
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SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623712001	**HGWC-13**	Water	09/26/19 13:50	09/27/19 13:15
2623712002	**MW-24D**	Water	09/26/19 16:50	09/27/19 13:15
2623712003	**MW-27D**	Water	09/26/19 10:11	09/27/19 13:15
2623712004	**MW-6**	Water	09/26/19 12:29	09/27/19 13:15
2623712005	**MW-7**	Water	09/26/19 15:22	09/27/19 13:15
2623712006	**MW-28D**	Water	09/26/19 14:50	09/27/19 13:15
2623712007	**MW-28D (Filtered)**	Water	09/26/19 14:50	09/27/19 13:15
2623712008	**MW-26D**	Water	09/26/19 19:19	09/27/19 13:15

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SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623712001	**HGWC-13**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712002	**MW-24D**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712003	**MW-27D**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712004	**MW-6**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712005	**MW-7**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712006	**MW-28D**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712007	**MW-28D (Filtered)**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623712008	**MW-26D**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

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ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: HGWC-13 **Lab ID: 2623712001** Collected: 09/26/19 13:50 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 20:56	7440-36-0	
Arsenic	**0.44**	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 20:56	7440-38-2	
Barium	**0.11**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 20:56	7440-39-3	
Beryllium	**0.00011J**	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 20:56	7440-41-7	
Boron	**1.7**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 20:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 20:56	7440-43-9	
Calcium	**195**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 21:02	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 20:56	7440-47-3	
Cobalt	**0.0042J**	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 20:56	7440-48-4	
Lithium	**0.035**	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 20:56	7439-93-2	
Molybdenum	**0.026**	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 20:56	7782-49-2	
Thallium	**0.00039J**	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 20:56	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1010**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**109**	mg/L	10.0	0.24	10		10/02/19 22:10	16887-00-6	
Fluoride	**0.64**	mg/L	0.30	0.029	1		10/02/19 13:25	16984-48-8	
Sulfate	**444**	mg/L	10.0	0.17	10		10/02/19 22:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-24D **Lab ID: 2623712002** Collected: 09/26/19 16:50 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 21:19	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 21:19	7440-38-2	
Barium	**0.12**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 21:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 21:19	7440-41-7	
Boron	**0.49**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 21:19	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 21:19	7440-43-9	
Calcium	**83.1**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 21:24	7440-70-2	
Chromium	**0.00042J**	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 21:19	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 21:19	7440-48-4	
Lithium	**0.0030J**	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 21:19	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 21:19	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 21:19	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 21:19	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**360**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**39.7**	mg/L	1.0	0.024	1		10/02/19 13:47	16887-00-6	
Fluoride	**0.18J**	mg/L	0.30	0.029	1		10/02/19 13:47	16984-48-8	
Sulfate	**91.0**	mg/L	10.0	0.17	10		10/02/19 22:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-27D **Lab ID: 2623712003** Collected: 09/26/19 10:11 Received: 09/27/19 13:15 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	**0.00030J**	mg/L	0.0030	0.00027	1	10/01/19 12:00	10/03/19 21:30	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 21:30	7440-38-2	
Barium	**0.95**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 21:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 21:30	7440-41-7	
Boron	**0.14**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 21:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 21:30	7440-43-9	
Calcium	**32.1**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 21:36	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 21:30	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 21:30	7440-48-4	
Lithium	**0.0055J**	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 21:30	7439-93-2	
Molybdenum	**0.0042J**	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 21:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 21:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 21:30	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**265**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**31.8**	mg/L	1.0	0.024	1		10/02/19 14:31	16887-00-6	
Fluoride	**0.42**	mg/L	0.30	0.029	1		10/02/19 14:31	16984-48-8	
Sulfate	**15.6**	mg/L	1.0	0.017	1		10/02/19 14:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-6 **Lab ID: 2623712004** Collected: 09/26/19 12:29 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 21:42	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 21:42	7440-38-2	
Barium	**0.089**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 21:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 21:42	7440-41-7	
Boron	**0.93**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 21:42	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 21:42	7440-43-9	
Calcium	**189**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 21:47	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 21:42	7440-47-3	
Cobalt	**0.00036J**	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 21:42	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 21:42	7439-93-2	
Molybdenum	**0.0026J**	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 21:42	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 21:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 21:42	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**735**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**64.9**	mg/L	10.0	0.24	10		10/02/19 23:17	16887-00-6	
Fluoride	**0.19J**	mg/L	0.30	0.029	1		10/02/19 14:52	16984-48-8	
Sulfate	**225**	mg/L	10.0	0.17	10		10/02/19 23:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-7 **Lab ID: 2623712005** Collected: 09/26/19 15:22 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 21:53	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 21:53	7440-38-2	
Barium	**0.066**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 21:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 21:53	7440-41-7	
Boron	**0.26**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 21:53	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 21:53	7440-43-9	
Calcium	**83.9**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 21:59	7440-70-2	
Chromium	**0.0013J**	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 21:53	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 21:53	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 21:53	7439-93-2	
Molybdenum	**0.0033J**	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 21:53	7439-98-7	
Selenium	**0.0014J**	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 21:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 21:53	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**383**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**15.6**	mg/L	1.0	0.024	1		10/02/19 15:14	16887-00-6	
Fluoride	**0.17J**	mg/L	0.30	0.029	1		10/02/19 15:14	16984-48-8	
Sulfate	**129**	mg/L	10.0	0.17	10		10/02/19 23:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-28D **Lab ID: 2623712006** Collected: 09/26/19 14:50 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 22:05	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 22:05	7440-38-2	
Barium	**0.15**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 22:05	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 22:05	7440-41-7	
Boron	**0.60**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 22:05	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 22:05	7440-43-9	
Calcium	**84.0**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 22:10	7440-70-2	
Chromium	**0.00081J**	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 22:05	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 22:05	7440-48-4	
Lithium	**0.0055J**	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 22:05	7439-93-2	
Molybdenum	**0.017**	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 22:05	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 22:05	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 22:05	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**418**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**43.5**	mg/L	1.0	0.024	1		10/02/19 15:36	16887-00-6	
Fluoride	**0.22J**	mg/L	0.30	0.029	1		10/02/19 15:36	16984-48-8	
Sulfate	**96.2**	mg/L	10.0	0.17	10		10/03/19 01:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-28D (Filtered) **Lab ID: 2623712007** Collected: 09/26/19 14:50 Received: 09/27/19 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony, Dissolved	ND	mg/L	0.0030	0.00027	1	10/03/19 17:15	10/04/19 16:20	7440-36-0	
Arsenic, Dissolved	ND	mg/L	0.0050	0.00035	1	10/03/19 17:15	10/04/19 16:20	7440-38-2	
Barium, Dissolved	**0.15**	mg/L	0.010	0.00049	1	10/03/19 17:15	10/04/19 16:20	7440-39-3	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	10/03/19 17:15	10/04/19 16:20	7440-41-7	
Boron, Dissolved	**0.56**	mg/L	0.040	0.0049	1	10/03/19 17:15	10/04/19 16:20	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	10/03/19 17:15	10/04/19 16:20	7440-43-9	
Calcium, Dissolved	**80.6**	mg/L	5.0	0.55	50	10/03/19 17:15	10/04/19 16:25	7440-70-2	M6
Chromium, Dissolved	**0.00048J**	mg/L	0.010	0.00039	1	10/03/19 17:15	10/04/19 16:20	7440-47-3	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	10/03/19 17:15	10/04/19 16:20	7440-48-4	
Lithium, Dissolved	**0.0047J**	mg/L	0.030	0.00078	1	10/03/19 17:15	10/04/19 16:20	7439-93-2	
Molybdenum, Dissolved	**0.016**	mg/L	0.010	0.00095	1	10/03/19 17:15	10/04/19 16:20	7439-98-7	
Selenium, Dissolved	ND	mg/L	0.010	0.0013	1	10/03/19 17:15	10/04/19 16:20	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.000052	1	10/03/19 17:15	10/04/19 16:20	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**414**	mg/L	10.0	10.0	1		10/03/19 16:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**43.2**	mg/L	1.0	0.024	1		10/02/19 15:58	16887-00-6	
Fluoride	**0.23J**	mg/L	0.30	0.029	1		10/02/19 15:58	16984-48-8	
Sulfate	**97.3**	mg/L	10.0	0.17	10		10/03/19 01:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Sample: MW-26D **Lab ID: 2623712008** Collected: 09/26/19 19:19 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 22:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 22:27	7440-38-2	
Barium	**0.12**	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 22:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 22:27	7440-41-7	
Boron	**2.0**	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 22:27	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 22:27	7440-43-9	
Calcium	**158**	mg/L	5.0	0.55	50	10/01/19 12:00	10/03/19 22:33	7440-70-2	
Chromium	**0.00076J**	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 22:27	7440-47-3	
Cobalt	**0.00053J**	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 22:27	7440-48-4	
Lithium	**0.0041J**	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 22:27	7439-93-2	
Molybdenum	**0.017**	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 22:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 22:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 22:27	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**643**	mg/L	10.0	10.0	1		10/03/19 16:48		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**118**	mg/L	10.0	0.24	10		10/03/19 02:17	16887-00-6	
Fluoride	**0.19J**	mg/L	0.30	0.029	1		10/02/19 16:20	16984-48-8	
Sulfate	**189**	mg/L	10.0	0.17	10		10/03/19 02:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623712

QC Batch: 36236 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623712001, 2623712002, 2623712003, 2623712004, 2623712005, 2623712006, 2623712008

METHOD BLANK: 163651 Matrix: Water
Associated Lab Samples: 2623712001, 2623712002, 2623712003, 2623712004, 2623712005, 2623712006, 2623712008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/03/19 19:06	
Arsenic	mg/L	ND	0.0050	0.00035	10/03/19 19:06	
Barium	mg/L	ND	0.010	0.00049	10/03/19 19:06	
Beryllium	mg/L	ND	0.0030	0.000074	10/03/19 19:06	
Boron	mg/L	ND	0.040	0.0049	10/03/19 19:06	
Cadmium	mg/L	ND	0.0025	0.00011	10/03/19 19:06	
Calcium	mg/L	ND	0.10	0.011	10/03/19 19:06	
Chromium	mg/L	ND	0.010	0.00039	10/03/19 19:06	
Cobalt	mg/L	ND	0.0050	0.00030	10/03/19 19:06	
Lithium	mg/L	ND	0.030	0.00078	10/03/19 19:06	
Molybdenum	mg/L	ND	0.010	0.00095	10/03/19 19:06	
Selenium	mg/L	ND	0.010	0.0013	10/03/19 19:06	
Thallium	mg/L	ND	0.0010	0.000052	10/03/19 19:06	

LABORATORY CONTROL SAMPLE: 163652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.10	103	80-120	
Barium	mg/L	0.1	0.11	107	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.11	105	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	104	80-120	
Thallium	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163653 163654

Parameter	Units	2623702001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00029J	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.018	0.1	0.1	0.13	0.13	107	108	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623712

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163653 163654

Parameter	Units	2623702001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	0.000077J	0.1	0.1	0.11	0.10	108	102	75-125	6	20	
Boron	mg/L	0.58	1	1	1.6	1.6	106	100	75-125	4	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.11	104	107	75-125	3	20	
Calcium	mg/L	3.7	1	1	4.9	5.0	118	130	75-125	2	20	M1
Chromium	mg/L	0.00073J	0.1	0.1	0.10	0.11	103	107	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.11	104	107	75-125	3	20	
Lithium	mg/L	0.0017J	0.1	0.1	0.11	0.10	108	103	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	107	109	75-125	2	20	
Selenium	mg/L	0.018	0.1	0.1	0.12	0.12	100	103	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	104	104	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623712

QC Batch: 36449
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2623712007

METHOD BLANK: 164644
Matrix: Water
Associated Lab Samples: 2623712007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	ND	0.0030	0.00027	10/04/19 16:08	
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	10/04/19 16:08	
Barium, Dissolved	mg/L	ND	0.010	0.00049	10/04/19 16:08	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000074	10/04/19 16:08	
Boron, Dissolved	mg/L	ND	0.040	0.0049	10/04/19 16:08	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00011	10/04/19 16:08	
Calcium, Dissolved	mg/L	ND	0.10	0.011	10/04/19 16:08	
Chromium, Dissolved	mg/L	ND	0.010	0.00039	10/04/19 16:08	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	10/04/19 16:08	
Lithium, Dissolved	mg/L	ND	0.030	0.00078	10/04/19 16:08	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00095	10/04/19 16:08	
Selenium, Dissolved	mg/L	ND	0.010	0.0013	10/04/19 16:08	
Thallium, Dissolved	mg/L	ND	0.0010	0.000052	10/04/19 16:08	

LABORATORY CONTROL SAMPLE: 164645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.10	102	80-120	
Arsenic, Dissolved	mg/L	0.1	0.099	99	80-120	
Barium, Dissolved	mg/L	0.1	0.10	101	80-120	
Beryllium, Dissolved	mg/L	0.1	0.099	99	80-120	
Boron, Dissolved	mg/L	1	0.98	98	80-120	
Cadmium, Dissolved	mg/L	0.1	0.10	100	80-120	
Calcium, Dissolved	mg/L	1	0.97	97	80-120	
Chromium, Dissolved	mg/L	0.1	0.098	98	80-120	
Cobalt, Dissolved	mg/L	0.1	0.097	97	80-120	
Lithium, Dissolved	mg/L	0.1	0.098	98	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.10	101	80-120	
Selenium, Dissolved	mg/L	0.1	0.10	100	80-120	
Thallium, Dissolved	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164646 164647

Parameter	Units	2623712007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony, Dissolved	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	2	20	
Arsenic, Dissolved	mg/L	ND	0.1	0.1	0.099	0.096	99	96	75-125	3	20	
Barium, Dissolved	mg/L	0.15	0.1	0.1	0.25	0.25	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623712

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164646 164647

Parameter	Units	2623712007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium, Dissolved	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20	
Boron, Dissolved	mg/L	0.56	1	1	1.6	1.5	100	97	75-125	2	20	
Cadmium, Dissolved	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	1	20	
Calcium, Dissolved	mg/L	80.6	1	1	83.6	81.4	293	74	75-125	3	20	M6
Chromium, Dissolved	mg/L	0.00048J	0.1	0.1	0.099	0.096	98	96	75-125	2	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	3	20	
Lithium, Dissolved	mg/L	0.0047J	0.1	0.1	0.099	0.098	94	94	75-125	1	20	
Molybdenum, Dissolved	mg/L	0.016	0.1	0.1	0.11	0.12	98	100	75-125	1	20	
Selenium, Dissolved	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20	
Thallium, Dissolved	mg/L	ND	0.1	0.1	0.095	0.092	95	92	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623712

QC Batch: 36437 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623712001, 2623712002, 2623712003, 2623712004, 2623712005, 2623712006, 2623712007, 2623712008

LABORATORY CONTROL SAMPLE: 164569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 164570

Parameter	Units	2623700006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	225	219	3	10	

SAMPLE DUPLICATE: 164571

Parameter	Units	2623710002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1450	1330	9	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623712

QC Batch: 36286 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623712001, 2623712002, 2623712003, 2623712004, 2623712005, 2623712006, 2623712007, 2623712008

METHOD BLANK: 163856 Matrix: Water
Associated Lab Samples: 2623712001, 2623712002, 2623712003, 2623712004, 2623712005, 2623712006, 2623712007, 2623712008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.031J	1.0	0.024	10/02/19 07:36	
Fluoride	mg/L	ND	0.30	0.029	10/02/19 07:36	
Sulfate	mg/L	0.053J	1.0	0.017	10/02/19 07:36	

LABORATORY CONTROL SAMPLE: 163857

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.7	107	90-110	
Fluoride	mg/L	10	10.9	109	90-110	
Sulfate	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163858 163859

Parameter	Units	2623702001 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	11.0	11.7	93	100	90-110	6	15	
Fluoride	mg/L	0.12J	10	10	9.5	10.3	94	102	90-110	8	15	
Sulfate	mg/L	30.3	10	10	36.7	37.2	64	69	90-110	1	15	M1

MATRIX SPIKE SAMPLE: 163860

Parameter	Units	2623702002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	6.5	10	16.5	100	90-110	
Fluoride	mg/L	0.098J	10	10.7	106	90-110	
Sulfate	mg/L	0.23J	10	10.7	104	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623712

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623712

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623712001	**HGWC-13**	EPA 3005A	36236	EPA 6020B	36255
2623712002	**MW-24D**	EPA 3005A	36236	EPA 6020B	36255
2623712003	**MW-27D**	EPA 3005A	36236	EPA 6020B	36255
2623712004	**MW-6**	EPA 3005A	36236	EPA 6020B	36255
2623712005	**MW-7**	EPA 3005A	36236	EPA 6020B	36255
2623712006	**MW-28D**	EPA 3005A	36236	EPA 6020B	36255
2623712008	**MW-26D**	EPA 3005A	36236	EPA 6020B	36255
2623712007	**MW-28D (Filtered)**	EPA 3005A	36449	EPA 6020B	36458
2623712001	**HGWC-13**	SM 2540C	36437		
2623712002	**MW-24D**	SM 2540C	36437		
2623712003	**MW-27D**	SM 2540C	36437		
2623712004	**MW-6**	SM 2540C	36437		
2623712005	**MW-7**	SM 2540C	36437		
2623712006	**MW-28D**	SM 2540C	36437		
2623712007	**MW-28D (Filtered)**	SM 2540C	36437		
2623712008	**MW-26D**	SM 2540C	36437		
2623712001	**HGWC-13**	EPA 300.0	36286		
2623712002	**MW-24D**	EPA 300.0	36286		
2623712003	**MW-27D**	EPA 300.0	36286		
2623712004	**MW-6**	EPA 300.0	36286		
2623712005	**MW-7**	EPA 300.0	36286		
2623712006	**MW-28D**	EPA 300.0	36286		
2623712007	**MW-28D (Filtered)**	EPA 300.0	36286		
2623712008	**MW-26D**	EPA 300.0	36286		

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test	Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
		MATRIX: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N	N	N	N	N	
1	HGWC-13	WT	G	9/26/19	13:26	9/26/19	13:50	21.7	4	1		3							Y	Y	Y	Y	Y	Y	Y	2
2	MW-24D	WT	G	9/26/19	16:15	9/26/19	16:50	21.9	4	1		3							Y	Y	Y	Y	Y	Y	Y	2
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

09-26-2019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Dan Gibbs / Geosyntec	9/26/19	1900	Nadia Mynbaeva	9/26/19	1900				
	Nadia Mynbaeva / Geosyntec	9/26/19	2055	J Mullen / Pace	9/27/19	1142				
				Charles Hunter	9/27/19	1315	5.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Gibbs

SIGNATURE of SAMPLER: [signature]

DATE Signed: 09-25-2019

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO# : 2623712

2623712

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW65B1	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
																		N	N	N	N	N	N	N		
1	MW-27D	WT	G	9/26/19	0930	9/26/19	1011	21	4	1		3						Y	Y	Y	Y	Y	Y	Y		N
2	MW-6	WT	G	9/26/19	1205	9/26/19	1229	22	4	1		3						Y	Y	Y	Y	Y	Y	Y		N
3	MW-7	WT	G	9/26/19	1445	9/26/19	1522	21	4	1		3						Y	Y	Y	Y	Y	Y	Y		N
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

NM 09/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/26/19	2055	[illegible] / Pace	9/27/19	1142	

WO#: 2623712

PM: BM Due Date: 10/04/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/26/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	CWG581	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Y/N — N N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-28D	WT	G	9/26/19	1330	9/26/19	1450	23	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
2	MW-28D (FILTERED)	WT	G	9/26/19	1330	9/26/19	1450	23	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
3	MW-26D	WT	G	9/26/19	1835	9/26/19	1919	22	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

BRW 9/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9/26/19	1925	Nadia Murbus / Geosyntec	9/26/19	1925	
	Nadia Murbus / Geosyntec	9/26/19	2055	J Muller / Pace	9/27/19	1142	

WO#: 2623712

PM: BM Due Date: 10/04/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/26/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

WO#: 2623712

Due Date: 10/04/19

PM: BM

CLIENT: GAPower-CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Oth

Tracking #: _____

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 214

Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.0 °C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/19 CW

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623713

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623713

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623713001	**HGWC-13**	Water	09/26/19 13:50	09/27/19 13:15
2623713002	**MW-24D**	Water	09/26/19 16:50	09/27/19 13:15
2623713003	**MW-27D**	Water	09/26/19 10:11	09/27/19 13:15
2623713004	**MW-6**	Water	09/26/19 12:29	09/27/19 13:15
2623713005	**MW-7**	Water	09/26/19 15:22	09/27/19 13:15
2623713006	**MW-28D**	Water	09/26/19 14:50	09/27/19 13:15
2623713007	**MW-28D (Filtered)**	Water	09/26/19 14:50	09/27/19 13:15
2623713008	**MW-26D**	Water	09/26/19 19:19	09/27/19 13:15

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Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623713001	**HGWC-13**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713002	**MW-24D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713003	**MW-27D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713004	**MW-6**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713005	**MW-7**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713006	**MW-28D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713007	**MW-28D (Filtered)**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623713008	**MW-26D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: HGWC-13 **Lab ID: 2623713001** Collected: 09/26/19 13:50 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.939 ± 0.260 (0.229) C:100% T:NA**	pCi/L	10/14/19 18:02	13982-63-3	
Radium-228	EPA 9320	**-0.196 ± 0.384 (0.912) C:77% T:98%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.939 ± 0.644 (1.14)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-24D **Lab ID: 2623713002** Collected: 09/26/19 16:50 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.531 ± 0.279 (0.384) C:104% T:NA**	pCi/L	10/15/19 08:25	13982-63-3	
Radium-228	EPA 9320	**0.347 ± 0.472 (1.01) C:73% T:82%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.878 ± 0.751 (1.39)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-27D **Lab ID: 2623713003** Collected: 09/26/19 10:11 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.759 ± 0.235 (0.260) C:97% T:NA**	pCi/L	10/14/19 18:03	13982-63-3	
Radium-228	EPA 9320	**0.215 ± 0.413 (0.907) C:76% T:78%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.974 ± 0.648 (1.17)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-6 **Lab ID: 2623713004** Collected: 09/26/19 12:29 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.354 ± 0.207 (0.356) C:90% T:NA**	pCi/L	10/14/19 18:01	13982-63-3	
Radium-228	EPA 9320	**0.391 ± 0.418 (0.872) C:64% T:94%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.745 ± 0.625 (1.23)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-7 **Lab ID: 2623713005** Collected: 09/26/19 15:22 Received: 09/27/19 13:15 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 ± 0.286 (0.422) C:92% T:NA**	pCi/L	10/15/19 08:25	13982-63-3	
Radium-228	EPA 9320	**0.462 ± 0.415 (0.846) C:73% T:85%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.947 ± 0.701 (1.27)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-28D **Lab ID: 2623713006** Collected: 09/26/19 14:50 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.474 ± 0.185 (0.224) C:96% T:NA**	pCi/L	10/14/19 18:02	13982-63-3	
Radium-228	EPA 9320	**0.523 ± 0.429 (0.860) C:77% T:80%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.997 ± 0.614 (1.08)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-28D (Filtered) **Lab ID: 2623713007** Collected: 09/26/19 14:50 Received: 09/27/19 13:15 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 ± 0.193 (0.316) C:91% T:NA**	pCi/L	10/14/19 18:15	13982-63-3	
Radium-228	EPA 9320	**0.353 ± 0.402 (0.845) C:75% T:86%**	pCi/L	10/16/19 13:58	15262-20-1	
Total Radium	Total Radium Calculation	**0.727 ± 0.595 (1.16)**	pCi/L	10/18/19 11:04	7440-14-4	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Sample: MW-26D **Lab ID: 2623713008** Collected: 09/26/19 19:19 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.535 ± 0.335 (0.555) C:96% T:NA**	pCi/L	10/15/19 08:26	13982-63-3	
Radium-228	EPA 9320	**0.377 ± 0.502 (1.07) C:78% T:73%**	pCi/L	10/16/19 13:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.912 ± 0.837 (1.63)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

QC Batch: 365001 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623713001, 2623713002, 2623713003, 2623713004, 2623713005, 2623713006, 2623713007, 2623713008

METHOD BLANK: 1770530 Matrix: Water
Associated Lab Samples: 2623713001, 2623713002, 2623713003, 2623713004, 2623713005, 2623713006, 2623713007, 2623713008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.564 ± 0.187 (0.181) C:94% T:NA	pCi/L	10/14/19 19:10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623713

QC Batch: 365002 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623713001, 2623713002, 2623713003, 2623713004, 2623713005, 2623713006, 2623713007, 2623713008

METHOD BLANK: 1770531 Matrix: Water
Associated Lab Samples: 2623713001, 2623713002, 2623713003, 2623713004, 2623713005, 2623713006, 2623713007, 2623713008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.538 ± 0.357 (0.676) C:80% T:85%	pCi/L	10/16/19 11:11	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623713

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623713

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623713001	**HGWC-13**	EPA 9315	365001		
2623713002	**MW-24D**	EPA 9315	365001		
2623713003	**MW-27D**	EPA 9315	365001		
2623713004	**MW-6**	EPA 9315	365001		
2623713005	**MW-7**	EPA 9315	365001		
2623713006	**MW-28D**	EPA 9315	365001		
2623713007	**MW-28D (Filtered)**	EPA 9315	365001		
2623713008	**MW-26D**	EPA 9315	365001		
2623713001	**HGWC-13**	EPA 9320	365002		
2623713002	**MW-24D**	EPA 9320	365002		
2623713003	**MW-27D**	EPA 9320	365002		
2623713004	**MW-6**	EPA 9320	365002		
2623713005	**MW-7**	EPA 9320	365002		
2623713006	**MW-28D**	EPA 9320	365002		
2623713007	**MW-28D (Filtered)**	EPA 9320	365002		
2623713008	**MW-26D**	EPA 9320	365002		
2623713001	**HGWC-13**	Total Radium Calculation	366904		
2623713002	**MW-24D**	Total Radium Calculation	366904		
2623713003	**MW-27D**	Total Radium Calculation	366903		
2623713004	**MW-6**	Total Radium Calculation	366904		
2623713005	**MW-7**	Total Radium Calculation	366904		
2623713006	**MW-28D**	Total Radium Calculation	366904		
2623713007	**MW-28D (Filtered)**	Total Radium Calculation	366904		
2623713008	**MW-26D**	Total Radium Calculation	366904		

PaceAnalytical

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 Fax:
Requested Due Date:	Standard TAT

Section B
Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C
Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency	
State / Location	GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N): Antimony, Arsenic, Barium N; Beryllium, Boron, Calcium N; Cadmium, Chromium, Cobalt N; Lithium, Molybdenum N; Selenium, Thallium N; TDS, Cl, F, SO4 N; Radium 226/228 N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-13	WT	G	9/26/19	13:26	9/26/19	13:50	22.71	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
2	MW-24D	WT	G	9/26/19	16:15	9/26/19	16:50	22.90	4	1		3							Y	Y	Y	Y	Y	Y	Y	N
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

DG 09-26-2019

ADDITIONAL COMMENTS	RELINQUISHED 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)
	Dan / Geosyntec	9/26/19	1900	Madia Munn	9/26/19	1900				
	Madia Munn / Geosyntec	9/26/19	2055	J Muller / Pace	9/27/19	1142				
				Charles Hawley	9/27/19	1315	5.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Dan Gibbs
SIGNATURE of SAMPLER: [signature]
DATE Signed: 09-25-2019

WO# : 2623713

2623713

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Y/N	Analyses Test: Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228			Residual Chlorine (Y/N)
																		N	N	N	N	N	N	N				
1	MW-27D	WT	G	9/26/19	0930	9/26/19	1011	21	4	1		3						Y	Y	Y	Y	Y	Y	Y				N
2	MW-6	WT	G	9/26/19	1205	9/26/19	1229	22	4	1		3						Y	Y	Y	Y	Y	Y	Y				N
3	MW-7	WT	G	9/26/19	1445	9/26/19	1522	21	4	1		3						Y	Y	Y	Y	Y	Y	Y				N
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

NM 09/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/26/19	2055	[illegible] / Pace	9/27/19	1142	
				Charles Hunter	9/27/19	1315	5.0

WO#: 2623713

PM: BM Due Date: 10/25/19

CLIENT: GAPower-CCR

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Noelia Muskus		
SIGNATURE of SAMPLER:	Noelia Muskus	DATE Signed:	9/26/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
5.0	X	X	X

Page 1 of 2

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency: [ ]

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test (Y/N)	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	MW-28D	WT	G	9/26/19	1330	9/26/19	1450	23	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
2	MW-28D (FILTERED)	WT	G	9/26/19	1330	9/26/19	1450	23	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
3	MW-26D	WT	G	9/26/19	1855	9/26/19	1919	22	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

BRW 9/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9/26/19	1925	Marlia Murburn / Geosyntec	9/26/19	1925	
	Marlia Murburn / Geosyntec	9/26/19	2055	J Muller / Pace	9/27/19	1142	
				Charles Hawkins	9/27/19	1315	5.0 Y Y N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/26/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
5.0	Y	Y	N

Page 2

WO# : 2623713

PM: BM Due Date: 10/25/19

CLIENT: GAPower-CCR

Pace Analytical

Sample Condition Upon Receipt

WO# : 2623713

PM: BM **Due Date: 10/25/19**

CLIENT: GAPower-CCR

Client Name: GA Power

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

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

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 214 **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.0°C **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 9/27/19 CM

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 13, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623714

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kevin Herring 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623714

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623714

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623714001	**EB-02**	Water	09/26/19 17:50	09/27/19 13:15
2623714002	**FB-02**	Water	09/26/19 18:25	09/27/19 13:15

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623714

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623714001	**EB-02**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623714002	**FB-02**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623714

Sample: EB-02 **Lab ID: 2623714001** Collected: 09/26/19 17:50 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 22:45	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 22:45	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 22:45	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 22:45	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 22:45	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 22:45	7440-43-9	
Calcium	ND	mg/L	0.10	0.011	1	10/01/19 12:00	10/03/19 22:45	7440-70-2	
Chromium	**0.0063J**	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 22:45	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 22:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/01/19 12:00	10/03/19 22:45	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 22:45	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 22:45	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 22:45	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 22:45	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**13.0**	mg/L	10.0	10.0	1		10/03/19 16:48		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.035J**	mg/L	1.0	0.024	1		10/04/19 14:51	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/04/19 14:51	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/04/19 14:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond GW6581
Pace Project No.: 2623714

Sample: FB-02 **Lab ID: 2623714002** Collected: 09/26/19 18:25 Received: 09/27/19 13:15 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	0.00027	1	10/01/19 12:00	10/03/19 22:50	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/01/19 12:00	10/03/19 22:50	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/01/19 12:00	10/03/19 22:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/01/19 12:00	10/03/19 22:50	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/01/19 12:00	10/03/19 22:50	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/01/19 12:00	10/03/19 22:50	7440-43-9	
Calcium	ND	mg/L	0.10	0.011	1	10/01/19 12:00	10/03/19 22:50	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/01/19 12:00	10/03/19 22:50	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/01/19 12:00	10/03/19 22:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/01/19 12:00	10/03/19 22:50	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/01/19 12:00	10/03/19 22:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/01/19 12:00	10/03/19 22:50	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/01/19 12:00	10/03/19 22:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/01/19 12:00	10/03/19 22:50	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**13.0**	mg/L	10.0	10.0	1		10/03/19 20:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.028J**	mg/L	1.0	0.024	1		10/04/19 15:55	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/04/19 15:55	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/04/19 15:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623714

QC Batch: 36236 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623714001, 2623714002

METHOD BLANK: 163651 Matrix: Water
Associated Lab Samples: 2623714001, 2623714002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/03/19 19:06	
Arsenic	mg/L	ND	0.0050	0.00035	10/03/19 19:06	
Barium	mg/L	ND	0.010	0.00049	10/03/19 19:06	
Beryllium	mg/L	ND	0.0030	0.000074	10/03/19 19:06	
Boron	mg/L	ND	0.040	0.0049	10/03/19 19:06	
Cadmium	mg/L	ND	0.0025	0.00011	10/03/19 19:06	
Calcium	mg/L	ND	0.10	0.011	10/03/19 19:06	
Chromium	mg/L	ND	0.010	0.00039	10/03/19 19:06	
Cobalt	mg/L	ND	0.0050	0.00030	10/03/19 19:06	
Lead	mg/L	ND	0.0050	0.000046	10/03/19 19:06	
Lithium	mg/L	ND	0.030	0.00078	10/03/19 19:06	
Molybdenum	mg/L	ND	0.010	0.00095	10/03/19 19:06	
Selenium	mg/L	ND	0.010	0.0013	10/03/19 19:06	
Thallium	mg/L	ND	0.0010	0.000052	10/03/19 19:06	

LABORATORY CONTROL SAMPLE: 163652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.10	103	80-120	
Barium	mg/L	0.1	0.11	107	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.11	105	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	104	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	104	80-120	
Thallium	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163653 163654

Parameter	Units	2623702001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00029J	0.1	0.1	0.11	0.11	105	106	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623714

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 163653 163654

Parameter	Units	2623702001 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	0.1	0.1	0.10	0.10	103	105	75-125	2	20	
Barium	mg/L	0.018	0.1	0.1	0.13	0.13	107	108	75-125	1	20	
Beryllium	mg/L	0.000077J	0.1	0.1	0.11	0.10	108	102	75-125	6	20	
Boron	mg/L	0.58	1	1	1.6	1.6	106	100	75-125	4	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.11	104	107	75-125	3	20	
Calcium	mg/L	3.7	1	1	4.9	5.0	118	130	75-125	2	20	M1
Chromium	mg/L	0.00073J	0.1	0.1	0.10	0.11	103	107	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.11	104	107	75-125	3	20	
Lead	mg/L	0.00013J	0.1	0.1	0.10	0.10	103	103	75-125	0	20	
Lithium	mg/L	0.0017J	0.1	0.1	0.11	0.10	108	103	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	107	109	75-125	2	20	
Selenium	mg/L	0.018	0.1	0.1	0.12	0.12	100	103	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	104	104	75-125	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623714

QC Batch: 36437
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623714001

LABORATORY CONTROL SAMPLE: 164569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 164570

Parameter	Units	2623700006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	225	219	3	10	

SAMPLE DUPLICATE: 164571

Parameter	Units	2623710002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1450	1330	9	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623714

QC Batch: 36464
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623714002

LABORATORY CONTROL SAMPLE: 164734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 164735

Parameter	Units	2623714002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	13.0	ND		10	

SAMPLE DUPLICATE: 164763

Parameter	Units	2623696005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	275	262	5	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond GW6581
Pace Project No.: 2623714

QC Batch: 36494 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623714001, 2623714002

METHOD BLANK: 164898 Matrix: Water
Associated Lab Samples: 2623714001, 2623714002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.026J	1.0	0.024	10/04/19 14:09	
Fluoride	mg/L	ND	0.30	0.029	10/04/19 14:09	
Sulfate	mg/L	ND	1.0	0.017	10/04/19 14:09	

LABORATORY CONTROL SAMPLE: 164899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164900 164901

Parameter	Units	2623714001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.035J	10	10	10.1	10	101	100	90-110	1	15	
Fluoride	mg/L	ND	10	10	10.2	10.1	102	100	90-110	1	15	
Sulfate	mg/L	ND	10	10	9.8	9.8	98	98	90-110	1	15	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond GW6581
Pace Project No.: 2623714

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623714

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623714001	**EB-02**	EPA 3005A	36236	EPA 6020B	36255
2623714002	**FB-02**	EPA 3005A	36236	EPA 6020B	36255
2623714001	**EB-02**	SM 2540C	36437		
2623714002	**FB-02**	SM 2540C	36464		
2623714001	**EB-02**	EPA 300.0	36494		
2623714002	**FB-02**	EPA 300.0	36494		

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test: Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	EB-02	WT	G	9/26/19	1735	9/26/19	1750	25	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
2	FB-02	WT	G	9/26/19	1800	9/26/19	1825	25	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

AJM 09/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/26/19	2055	J Mueller / Pace	9/27/19	1142	
				Chandra Hunter	9/27/19	1315	5.0 Y Y Y

WO#: 2623714

2623714

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/26/19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
5.0	Y	Y	Y

Pace Analytical

Sample Condition Upon Rece

WO#: 2623714

Client Name: GA Power

PM: BM Due Date: 10/04/19

CLIENT: GAPower-CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Commercial ☑ Pace Other _____

Optional
Proj. Due Date:
Proj. Name:

Tracking #: _____

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 214 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.0°C. Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/27/19 dw

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 25, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond GW6581
Pace Project No.: 2623715

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Betsy McDaniel
betsy.mcdaniel@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond GW6581
Pace Project No.: 2623715

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

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SAMPLE SUMMARY

Project: Plant Hammond GW6581
Pace Project No.: 2623715

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623715001	**EB-02**	Water	09/26/19 17:50	09/27/19 13:15
2623715002	**FB-02**	Water	09/26/19 18:25	09/27/19 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond GW6581
Pace Project No.: 2623715

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623715001	**EB-02**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623715002	**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 GW6581
Pace Project No.: 2623715

Sample: EB-02 **Lab ID: 2623715001** Collected: 09/26/19 17:50 Received: 09/27/19 13:15 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	**0.364 ± 0.165 (0.229) C:87% T:NA**	pCi/L	10/14/19 19:10	13982-63-3	
Radium-228	EPA 9320	**0.788 ± 0.417 (0.747) C:82% T:82%**	pCi/L	10/16/19 11:09	15262-20-1	
Total Radium	Total Radium Calculation	**1.15 ± 0.582 (0.976)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623715

Sample: FB-02 **Lab ID: 2623715002** Collected: 09/26/19 18:25 Received: 09/27/19 13:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.248 ± 0.139 (0.219) C:96% T:NA**	pCi/L	10/14/19 19:10	13982-63-3	
Radium-228	EPA 9320	**0.681 ± 0.393 (0.720) C:77% T:88%**	pCi/L	10/16/19 11:10	15262-20-1	
Total Radium	Total Radium Calculation	**0.929 ± 0.532 (0.939)**	pCi/L	10/18/19 11:04	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond GW6581
Pace Project No.: 2623715

QC Batch: 365001 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623715001, 2623715002

METHOD BLANK: 1770530 Matrix: Water
Associated Lab Samples: 2623715001, 2623715002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.564 ± 0.187 (0.181) C:94% T:NA	pCi/L	10/14/19 19:10	

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 GW6581
Pace Project No.: 2623715

QC Batch: 365002 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623715001, 2623715002

METHOD BLANK: 1770531 Matrix: Water
Associated Lab Samples: 2623715001, 2623715002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.538 ± 0.357 (0.676) C:80% T:85%	pCi/L	10/16/19 11:11	

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 GW6581
Pace Project No.: 2623715

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

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581
Pace Project No.: 2623715

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623715001	**EB-02**	EPA 9315	365001		
2623715002	**FB-02**	EPA 9315	365001		
2623715001	**EB-02**	EPA 9320	365002		
2623715002	**FB-02**	EPA 9320	365002		
2623715001	**EB-02**	Total Radium Calculation	366904		
2623715002	**FB-02**	Total Radium Calculation	366904		

Pace Analytical

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	Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	EB-02	WT	G	9/26/19	1735	9/26/19	1750	25	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
2	FB-02	WT	G	9/26/19	1800	9/26/19	1825	25	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MM 09/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Noelia Muskus/Geosyntec	9/26/19	2055	J Mueller/Pace	9/27/19	1142				
				Charles Hinds	9/27/19	1315	5.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/26/19

WO# : 2623715

2623715

Sample Condition Upon Rec

WO#: 2623715

Pace Analytical

Client Name: GA Power

PM: BM **Due Date: 10/25/19**

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

Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 214

Cooler Temperature 5.0 °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: 9/27/19 CH

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

December 13, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623748

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 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,

Kevin Herring 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

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623748

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623748

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623748001	**HGWC-9**	Water	09/27/19 13:20	09/30/19 12:39
2623748002	**HGWC-10**	Water	09/27/19 10:39	09/30/19 12:39
2623748003	**MW-19**	Water	09/27/19 13:30	09/30/19 12:39
2623748004	**MW-25d**	Water	09/27/19 10:00	09/30/19 12:39
2623748005	**HGWC-12**	Water	09/27/19 11:20	09/30/19 12:39
2623748006	**HGWC-11**	Water	09/27/19 12:48	09/30/19 12:39

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SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623748

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623748001	**HGWC-9**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623748002	**HGWC-10**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623748003	**MW-19**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623748004	**MW-25d**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623748005	**HGWC-12**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623748006	**HGWC-11**	EPA 6020B	CSW	13
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623748

Sample: HGWC-9 **Lab ID: 2623748001** Collected: 09/27/19 13:20 Received: 09/30/19 12:39 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	0.00027	1	10/03/19 17:28	10/05/19 15:31	7440-36-0	
Arsenic	**0.00037J**	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 15:31	7440-38-2	
Barium	**0.11**	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 15:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 15:31	7440-41-7	
Boron	**2.9**	mg/L	2.0	0.25	50	10/03/19 17:28	10/05/19 15:37	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 15:31	7440-43-9	
Calcium	**175**	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 15:37	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 15:31	7440-47-3	
Cobalt	**0.00057J**	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 15:31	7440-48-4	
Lithium	**0.0044J**	mg/L	0.030	0.00078	1	10/03/19 17:28	10/05/19 15:31	7439-93-2	
Molybdenum	**0.033**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 15:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 15:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 15:31	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**730**	mg/L	10.0	10.0	1		10/03/19 20:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**126**	mg/L	10.0	0.24	10		10/07/19 20:19	16887-00-6	
Fluoride	**0.26J**	mg/L	0.30	0.029	1		10/07/19 15:43	16984-48-8	
Sulfate	**214**	mg/L	10.0	0.17	10		10/07/19 20:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623748

Sample: HGWC-10 **Lab ID: 2623748002** Collected: 09/27/19 10:39 Received: 09/30/19 12:39 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	0.00027	1	10/03/19 17:28	10/05/19 15:42	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 15:42	7440-38-2	
Barium	**0.078**	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 15:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 15:42	7440-41-7	
Boron	**1.0**	mg/L	0.040	0.0049	1	10/03/19 17:28	10/05/19 15:42	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 15:42	7440-43-9	
Calcium	**157**	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 15:48	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 15:42	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 15:42	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	10/03/19 17:28	10/05/19 15:42	7439-93-2	
Molybdenum	**0.0014J**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 15:42	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 15:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 15:42	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**624**	mg/L	10.0	10.0	1		10/03/19 20:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**49.9**	mg/L	1.0	0.024	1		10/07/19 16:03	16887-00-6	
Fluoride	**0.17J**	mg/L	0.30	0.029	1		10/07/19 16:03	16984-48-8	
Sulfate	**181**	mg/L	10.0	0.17	10		10/07/19 20:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623748

Sample: MW-19 **Lab ID: 2623748003** Collected: 09/27/19 13:30 Received: 09/30/19 12:39 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	0.00027	1	10/03/19 17:28	10/05/19 16:05	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 16:05	7440-38-2	
Barium	**0.068**	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 16:05	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 16:05	7440-41-7	
Boron	**0.58**	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:36	7440-42-8	
Cadmium	**0.00013J**	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 16:05	7440-43-9	
Calcium	**90.0**	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 16:11	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 16:05	7440-47-3	
Cobalt	**0.033**	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 16:05	7440-48-4	
Lithium	**0.013J**	mg/L	0.030	0.00078	1	10/03/19 17:28	10/05/19 16:05	7439-93-2	
Molybdenum	**0.063**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 16:05	7439-98-7	
Selenium	**0.0013J**	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 16:05	7782-49-2	
Thallium	**0.00027J**	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 16:05	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**442**	mg/L	10.0	10.0	1		10/04/19 20:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**46.2**	mg/L	1.0	0.024	1		10/07/19 16:24	16887-00-6	
Fluoride	**0.53**	mg/L	0.30	0.029	1		10/07/19 16:24	16984-48-8	
Sulfate	**170**	mg/L	10.0	0.17	10		10/07/19 21:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623748

Sample: MW-25d **Lab ID: 2623748004** Collected: 09/27/19 10:00 Received: 09/30/19 12:39 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	0.00027	1	10/03/19 17:28	10/05/19 16:17	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 16:17	7440-38-2	
Barium	**0.39**	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 16:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 16:17	7440-41-7	
Boron	**0.36**	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:42	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 16:17	7440-43-9	
Calcium	**26.4**	mg/L	0.50	0.055	5	10/03/19 17:28	10/07/19 14:42	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 16:17	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 16:17	7440-48-4	
Lithium	**0.047**	mg/L	0.030	0.00078	1	10/03/19 17:28	10/05/19 16:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 16:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 16:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 16:17	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**409**	mg/L	10.0	10.0	1		10/04/19 20:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**36.2**	mg/L	1.0	0.024	1		10/07/19 16:45	16887-00-6	
Fluoride	**1.5**	mg/L	0.30	0.029	1		10/07/19 16:45	16984-48-8	
Sulfate	**48.0**	mg/L	1.0	0.017	1		10/07/19 16:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623748

Sample: HGWC-12 **Lab ID: 2623748005** Collected: 09/27/19 11:20 Received: 09/30/19 12:39 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	0.00027	1	10/03/19 17:28	10/05/19 16:28	7440-36-0	
Arsenic	**0.0061**	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 16:28	7440-38-2	
Barium	**0.096**	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 16:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 16:28	7440-41-7	
Boron	**2.1**	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:48	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 16:28	7440-43-9	
Calcium	**153**	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 16:34	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 16:28	7440-47-3	
Cobalt	**0.0012J**	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 16:28	7440-48-4	
Lithium	**0.011J**	mg/L	0.030	0.00078	1	10/03/19 17:28	10/05/19 16:28	7439-93-2	
Molybdenum	**0.052**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 16:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 16:28	7782-49-2	
Thallium	**0.000088J**	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 16:28	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**653**	mg/L	10.0	10.0	1		10/04/19 20:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**81.0**	mg/L	10.0	0.24	10		10/07/19 21:41	16887-00-6	
Fluoride	**0.26J**	mg/L	0.30	0.029	1		10/07/19 18:55	16984-48-8	
Sulfate	**198**	mg/L	10.0	0.17	10		10/07/19 21:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2623748

Sample: HGWC-11 **Lab ID: 2623748006** Collected: 09/27/19 12:48 Received: 09/30/19 12:39 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	0.00027	1	10/03/19 17:28	10/05/19 16:40	7440-36-0	
Arsenic	**0.0018J**	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 16:40	7440-38-2	
Barium	**0.033**	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 16:40	7440-39-3	
Beryllium	**0.000086J**	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 16:40	7440-41-7	
Boron	**0.53**	mg/L	0.20	0.025	5	10/03/19 17:28	10/07/19 14:53	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 16:40	7440-43-9	
Calcium	**113**	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 16:45	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 16:40	7440-47-3	
Cobalt	**0.00071J**	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 16:40	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	10/03/19 17:28	10/05/19 16:40	7439-93-2	
Molybdenum	**0.016**	mg/L	0.010	0.00095	1	10/03/19 17:28	10/05/19 16:40	7439-98-7	
Selenium	**0.013**	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 16:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 16:40	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**528**	mg/L	10.0	10.0	1		10/04/19 20:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**27.9**	mg/L	1.0	0.024	1		10/07/19 19:16	16887-00-6	
Fluoride	**0.42**	mg/L	0.30	0.029	1		10/07/19 19:16	16984-48-8	
Sulfate	ND	mg/L	10.0	0.17	10		10/07/19 22:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623748

QC Batch: 36434 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2623748001, 2623748002, 2623748003, 2623748004, 2623748005, 2623748006

METHOD BLANK: 164547 Matrix: Water
Associated Lab Samples: 2623748001, 2623748002, 2623748003, 2623748004, 2623748005, 2623748006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/05/19 14:53	
Arsenic	mg/L	ND	0.0050	0.00035	10/05/19 14:53	
Barium	mg/L	ND	0.010	0.00049	10/05/19 14:53	
Beryllium	mg/L	ND	0.0030	0.000074	10/05/19 14:53	
Boron	mg/L	ND	0.040	0.0049	10/05/19 14:53	
Cadmium	mg/L	ND	0.0025	0.00011	10/05/19 14:53	
Calcium	mg/L	ND	0.10	0.011	10/05/19 14:53	
Chromium	mg/L	ND	0.010	0.00039	10/05/19 14:53	
Cobalt	mg/L	ND	0.0050	0.00030	10/05/19 14:53	
Lithium	mg/L	ND	0.030	0.00078	10/05/19 14:53	
Molybdenum	mg/L	ND	0.010	0.00095	10/05/19 14:53	
Selenium	mg/L	ND	0.010	0.0013	10/05/19 14:53	
Thallium	mg/L	ND	0.0010	0.000052	10/05/19 14:53	

LABORATORY CONTROL SAMPLE: 164548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Calcium	mg/L	1	0.99	99	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164549 164550

Parameter	Units	2623793002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Barium	mg/L	0.042	0.1	0.1	0.14	0.14	103	99	75-125	3	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

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623748

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 164549 164550

Parameter	Units	2623793002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.10	0.099	103	99	75-125	4	20	
Boron	mg/L	0.025J	1	1	1.1	1.0	103	100	75-125	4	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Calcium	mg/L	17.6	1	1	19.5	20.2	188	260	75-125	4	20	M6
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	106	101	75-125	5	20	
Cobalt	mg/L	0.00042J	0.1	0.1	0.10	0.097	102	96	75-125	6	20	
Lithium	mg/L	0.011	0.1	0.1	0.12	0.11	108	102	75-125	5	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	106	103	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	4	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623748

QC Batch: 36464
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623748001, 2623748002

LABORATORY CONTROL SAMPLE: 164734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 164735

Parameter	Units	2623714002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	13.0	ND		10	

SAMPLE DUPLICATE: 164763

Parameter	Units	2623696005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	275	262	5	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

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623748

QC Batch: 36519 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2623748003, 2623748004, 2623748005, 2623748006

LABORATORY CONTROL SAMPLE: 165036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	409	102	84-108	

SAMPLE DUPLICATE: 165037

Parameter	Units	2623748003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	442	458	4	10	

SAMPLE DUPLICATE: 165038

Parameter	Units	2623793003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	475	497	5	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2623748

QC Batch: 36548 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2623748001, 2623748002, 2623748003, 2623748004, 2623748005, 2623748006

METHOD BLANK: 165133 Matrix: Water
Associated Lab Samples: 2623748001, 2623748002, 2623748003, 2623748004, 2623748005, 2623748006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.033J	1.0	0.024	10/07/19 12:57	
Fluoride	mg/L	ND	0.30	0.029	10/07/19 12:57	
Sulfate	mg/L	ND	1.0	0.017	10/07/19 12:57	

LABORATORY CONTROL SAMPLE: 165134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.6	106	90-110	
Fluoride	mg/L	10	10.5	105	90-110	
Sulfate	mg/L	10	10.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 165135 165136

Parameter	Units	2623738001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	138	200	200	338	335	100	98	90-110	1	15	
Fluoride	mg/L	2.0	200	200	207	205	102	101	90-110	1	15	
Sulfate	mg/L	ND	200	200	250	248	102	101	90-110	1	15	

MATRIX SPIKE SAMPLE: 165137

Parameter	Units	2623745001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	110	200	316	103	90-110	
Fluoride	mg/L	2.0J	200	211	104	90-110	
Sulfate	mg/L	557	200	717	80	90-110	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623748

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623748

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623748001	**HGWC-9**	EPA 3005A	36434	EPA 6020B	36455
2623748002	**HGWC-10**	EPA 3005A	36434	EPA 6020B	36455
2623748003	**MW-19**	EPA 3005A	36434	EPA 6020B	36455
2623748004	**MW-25d**	EPA 3005A	36434	EPA 6020B	36455
2623748005	**HGWC-12**	EPA 3005A	36434	EPA 6020B	36455
2623748006	**HGWC-11**	EPA 3005A	36434	EPA 6020B	36455
2623748001	**HGWC-9**	SM 2540C	36464		
2623748002	**HGWC-10**	SM 2540C	36464		
2623748003	**MW-19**	SM 2540C	36519		
2623748004	**MW-25d**	SM 2540C	36519		
2623748005	**HGWC-12**	SM 2540C	36519		
2623748006	**HGWC-11**	SM 2540C	36519		
2623748001	**HGWC-9**	EPA 300.0	36548		
2623748002	**HGWC-10**	EPA 300.0	36548		
2623748003	**MW-19**	EPA 300.0	36548		
2623748004	**MW-25d**	EPA 300.0	36548		
2623748005	**HGWC-12**	EPA 300.0	36548		
2623748006	**HGWC-11**	EPA 300.0	36548		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW65B1	Pace Profile #:	327 (AP)

Regulatory Agency:

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
																		N	N	N	N	N	N	N		
1	HGWC-9	WT	G	9/27/19	1258	9/27/19	1320	21	4	1		3						Y	Y	Y	Y	Y	Y	Y		N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

NM 09/27/19

WO# : 2623748

2623748

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Muskus / Geosyntec	9/29/19	2130	Pace	9.30.19	1034	
	Pace	9.30.19	1239	MZalman	9/30/19	1239	
							2.9
							Y
							Y
							Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Noelia Muskus

SIGNATURE of SAMPLER: Noelia Muskus DATE Signed: 9/27/19

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GNG581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228				Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	N	N	N	N	N	N	N	N				
1	HGWC-10	WT	G	9/22/19	0930	9/22/19	1039	21	4	1		3						Y	Y	Y	Y	Y	Y	Y					N
2	MW-19	WT	G	9/22/19	1225	9/22/19	1330	22	4	1		3						Y	Y	Y	Y	Y	Y	Y					N
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

BJRW 9/26/19

WO#: 2623748

PM: BM Due Date: 10/07/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann / Geosyntec	9-27-19	1655	Nadia Mankani / Geosyntec	9/27/19	1655	
	Nadia Mankani / Geosyntec	9/29/19	2130	Pace	9.30.19	1234	
	Pace	9.30.19	1239	M Zalman	9/30/19	1239	

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben W

DATE Signed: 9-29-19

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 Fax:
Requested Due Date:	Standard TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	SCS10382775
Project Name:	Plant Hammond
Project #:	GW 6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic , Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	N	N	N	N	N	N	N	
1	MW-25d	WT	G	9/27/19	9:18	9/27/19	10:00	20.4	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
2	HGWC-12	WT	G	9/27/19	10:53	9/27/19	11:20	20.8	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
3	HGWC-11	WT	G	9/27/19	12:16	9/27/19	12:48	22.7	4	1		3						Y	Y	Y	Y	Y	Y	Y	N
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

DC: 09-27-2019

WO#: 2623748

PM: BM Due Date: 10/07/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dan Gibbs / Geosyntec	9/27/19	16:55	Marlia Mumba / Geosyntec	9/27/19	1655	
	Marlia Mumba / Geosyntec	9/28/19	2130	Pace	9.30.19	1034	
	Pace	9.30.19	1239	M Dalman	9/30/19	1239	

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature] DATE Signed: 9-27-2019

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project #

WO# : 2623748

PM: BM Due Date: 10/07/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.9 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9/30/19 MR

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:**

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 29, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond
Pace Project No.: 2623749

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond
Pace Project No.: 2623749

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond
Pace Project No.: 2623749

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623749001	**HGWC-9**	Water	09/27/19 13:20	09/30/19 12:39
2623749002	**HGWC-10**	Water	09/27/19 10:39	09/30/19 12:39
2623749003	**MW-19**	Water	09/27/19 13:30	09/30/19 12:39
2623749004	**MW-25d**	Water	09/27/19 10:00	09/30/19 12:39
2623749005	**HGWC-12**	Water	09/27/19 11:20	09/30/19 12:39
2623749006	**HGWC-11**	Water	09/27/19 12:48	09/30/19 12:39

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(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond
Pace Project No.: 2623749

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623749001	**HGWC-9**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623749002	**HGWC-10**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623749003	**MW-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623749004	**MW-25d**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623749005	**HGWC-12**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623749006	**HGWC-11**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

Sample: HGWC-9 **Lab ID: 2623749001** Collected: 09/27/19 13:20 Received: 09/30/19 12:39 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.428 ± 0.283 (0.449) C:88% T:NA**	pCi/L	10/18/19 08:27	13982-63-3	
Radium-228	EPA 9320	**-0.0293 ± 0.588 (1.35) C:53% T:93%**	pCi/L	10/22/19 12:28	15262-20-1	
Total Radium	Total Radium Calculation	**0.428 ± 0.871 (1.80)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

Sample: HGWC-10 **Lab ID: 2623749002** Collected: 09/27/19 10:39 Received: 09/30/19 12:39 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 ± 0.238 (0.411) C:87% T:NA**	pCi/L	10/18/19 08:27	13982-63-3	
Radium-228	EPA 9320	**0.872 ± 0.573 (1.12) C:67% T:87%**	pCi/L	10/22/19 12:28	15262-20-1	
Total Radium	Total Radium Calculation	**1.16 ± 0.811 (1.53)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

Sample: MW-19 **Lab ID: 2623749003** Collected: 09/27/19 13:30 Received: 09/30/19 12:39 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.534 ± 0.324 (0.518) C:86% T:NA**	pCi/L	10/18/19 08:27	13982-63-3	
Radium-228	EPA 9320	**-0.185 ± 0.593 (1.42) C:60% T:83%**	pCi/L	10/22/19 15:19	15262-20-1	
Total Radium	Total Radium Calculation	**0.534 ± 0.917 (1.94)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

Sample: MW-25d **Lab ID: 2623749004** Collected: 09/27/19 10:00 Received: 09/30/19 12:39 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.676 ± 0.331 (0.394) C:85% T:NA**	pCi/L	10/18/19 08:27	13982-63-3	
Radium-228	EPA 9320	**0.269 ± 0.342 (0.722) C:60% T:87%**	pCi/L	10/22/19 12:20	15262-20-1	
Total Radium	Total Radium Calculation	**0.945 ± 0.673 (1.12)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

Sample: HGWC-12 **Lab ID: 2623749005** Collected: 09/27/19 11:20 Received: 09/30/19 12:39 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.806 ± 0.369 (0.452) C:89% T:NA**	pCi/L	10/18/19 08:27	13982-63-3	
Radium-228	EPA 9320	**0.152 ± 0.527 (1.18) C:60% T:82%**	pCi/L	10/22/19 12:28	15262-20-1	
Total Radium	Total Radium Calculation	**0.958 ± 0.896 (1.63)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

Sample: HGWC-11 **Lab ID: 2623749006** Collected: 09/27/19 12:48 Received: 09/30/19 12:39 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.444 ± 0.261 (0.345) C:91% T:NA**	pCi/L	10/18/19 08:27	13982-63-3	
Radium-228	EPA 9320	**1.34 ± 0.688 (1.25) C:63% T:78%**	pCi/L	10/22/19 12:28	15262-20-1	
Total Radium	Total Radium Calculation	**1.78 ± 0.949 (1.60)**	pCi/L	10/23/19 10:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

QC Batch: 365770 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623749001, 2623749002, 2623749003, 2623749004, 2623749005, 2623749006

METHOD BLANK: 1774264 Matrix: Water
Associated Lab Samples: 2623749001, 2623749002, 2623749003, 2623749004, 2623749005, 2623749006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.444 ± 0.254 (0.311) C:92% T:NA	pCi/L	10/18/19 08:27	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond
Pace Project No.: 2623749

QC Batch: 365771 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623749001, 2623749002, 2623749003, 2623749004, 2623749005, 2623749006

METHOD BLANK: 1774265 Matrix: Water
Associated Lab Samples: 2623749001, 2623749002, 2623749003, 2623749004, 2623749005, 2623749006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.497 ± 0.426 (0.854) C:61% T:84%	pCi/L	10/22/19 12:20	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond
Pace Project No.: 2623749

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond
Pace Project No.: 2623749

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623749001	**HGWC-9**	EPA 9315	365770		
2623749002	**HGWC-10**	EPA 9315	365770		
2623749003	**MW-19**	EPA 9315	365770		
2623749004	**MW-25d**	EPA 9315	365770		
2623749005	**HGWC-12**	EPA 9315	365770		
2623749006	**HGWC-11**	EPA 9315	365770		
2623749001	**HGWC-9**	EPA 9320	365771		
2623749002	**HGWC-10**	EPA 9320	365771		
2623749003	**MW-19**	EPA 9320	365771		
2623749004	**MW-25d**	EPA 9320	365771		
2623749005	**HGWC-12**	EPA 9320	365771		
2623749006	**HGWC-11**	EPA 9320	365771		
2623749001	**HGWC-9**	Total Radium Calculation	367489		
2623749002	**HGWC-10**	Total Radium Calculation	367488		
2623749003	**MW-19**	Total Radium Calculation	367489		
2623749004	**MW-25d**	Total Radium Calculation	367488		
2623749005	**HGWC-12**	Total Radium Calculation	367488		
2623749006	**HGWC-11**	Total Radium Calculation	367489		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW605B1	Pace Profile #:	327 (AP)

Regulatory Agency: State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
		MATRIX: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																N	N	N	N	N	N	N	N	
1	HGWC-9	WT	G	9/26/19	1258	9/26/19	1320	21	4	1		3						Y	Y	Y	Y	Y	Y	Y	Y	N
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MM 09/27/19

WO# : 2623749

2623749

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Naelia Muskus / Geosyntec	9/29/19	2130	Pace	9.30.19	1034
	Pace	9.30.19	1239	MDahlman	9/30/19	1239

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooker (Y/N)	Samples Intact (Y/N)
2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Naelia Muskus

SIGNATURE of SAMPLER: Naelia Muskus DATE Signed: 9/27/19

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
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Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GNC581	Pace Profile #:	327 (AP)

Regulatory Agency: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
1	HGWC-10	WT	G	9/22/19	0930	9/22/19	1039	21	4	1		3						Y	Y	Y	Y	Y	Y	Y	Y	N
2	MW-19	WT	G	9/22/19	1225	9/22/19	1330	22	4	1		3						Y	Y	Y	Y	Y	Y	Y	Y	N
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

TSRW 9/26/19

WO#: 2623749

PM: BM Due Date: 10/28/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ben Weinmann/Geosyntec	9-27-19	1655	Nadia Mufleh/Geosyntec	9/27/19	1655	
	Nadia Mufleh/Geosyntec	9/29/19	2130	Pace	9.30.19	1234	
	Pace	9.30.19	1239	MCalhman	9/30/19	1239	

SAMPLE CONDITIONS	
TEMP in C	2.9
Received on Ice (Y/N)	Y
Custody Sealed Cooler (Y/N)	Y
Samples Intact (Y/N)	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Weinmann

SIGNATURE of SAMPLER: Ben W

DATE Signed: 9-29-19

CHAIN-OF-CUSTODY / Analytical Request Document

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Page : 3 Of 3

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
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Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA 30339			Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW 6581	Pace Profile #:	327 (AP)

Regulatory Agency: GA

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test: Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)
																		N	N	N	N	N	N	N		
1	MW-25d	WT	G	9/27/19	9:18	9/27/19	10:00	20.2	4	1		3						Y	Y	Y	Y	Y	Y	Y	N	
2	HGWC-12	WT	G	9/27/19	10:53	9/27/19	11:20	20.0	4	1		3						Y	Y	Y	Y	Y	Y	Y	N	
3	HGWC-11	WT	G	9/27/19	12:16	9/27/19	12:48	23.7	4	1		3						Y	Y	Y	Y	Y	Y	Y	N	
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

DOC: 09-27-2019

WO#: 2623749

PM: BM Due Date: 10/28/19

CLIENT: GAPower-CCR

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dan Gibbs / Geosyntec	9/27/19	16:55	Malia Mumba / Geosyntec	9/27/19	1655	
	Malia Mumba / Geosyntec	9/29/19	2130	Pace	9.30.19	1234	
	Pace	9.30.19	1239	M Dalman	9/30/19	1239	

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [signature] DATE Signed: 9-27-2019

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

Project # _____

WO# : 2623749

PM: BM Due Date: 10/28/19

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 ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.9 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/30/19 MP

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

October 31, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 01, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623794001	**HGWA-1**	Water	09/30/19 09:52	10/01/19 12:05
2623794002	**HGWA-2**	Water	09/30/19 11:17	10/01/19 12:05
2623794003	**HGWA-3**	Water	09/30/19 11:35	10/01/19 12:05

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623794001	**HGWA-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623794002	**HGWA-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2623794003	**HGWA-3**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Sample: HGWA-1 **Lab ID: 2623794001** Collected: 09/30/19 09:52 Received: 10/01/19 12:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.306 ± 0.242 (0.390) C:88% T:NA**	pCi/L	10/25/19 08:33	13982-63-3	
Radium-228	EPA 9320	**-0.0906 ± 0.261 (0.644) C:71% T:85%**	pCi/L	10/29/19 12:24	15262-20-1	
Total Radium	Total Radium Calculation	**0.306 ± 0.503 (1.03)**	pCi/L	10/30/19 10:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Sample: HGWA-2 **Lab ID: 2623794002** Collected: 09/30/19 11:17 Received: 10/01/19 12:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.585 ± 0.304 (0.356) C:91% T:NA**	pCi/L	10/25/19 08:33	13982-63-3	
Radium-228	EPA 9320	**0.454 ± 0.438 (0.899) C:76% T:76%**	pCi/L	10/29/19 15:27	15262-20-1	
Total Radium	Total Radium Calculation	**1.04 ± 0.742 (1.26)**	pCi/L	10/30/19 10:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Sample: HGWA-3 **Lab ID: 2623794003** Collected: 09/30/19 11:35 Received: 10/01/19 12:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.384 ± 0.276 (0.453) C:87% T:NA**	pCi/L	10/25/19 08:39	13982-63-3	
Radium-228	EPA 9320	**-0.00390 ± 0.427 (0.986) C:74% T:82%**	pCi/L	10/29/19 15:28	15262-20-1	
Total Radium	Total Radium Calculation	**0.384 ± 0.703 (1.44)**	pCi/L	10/30/19 10:55	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

QC Batch: 366498 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2623794001, 2623794002, 2623794003

METHOD BLANK: 1777737 Matrix: Water
Associated Lab Samples: 2623794001, 2623794002, 2623794003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.599 ± 0.309 (0.395) C:98% T:NA	pCi/L	10/25/19 09:42	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

QC Batch: 366499 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2623794001, 2623794002, 2623794003

METHOD BLANK: 1777739 Matrix: Water
Associated Lab Samples: 2623794001, 2623794002, 2623794003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.720 ± 0.387 (0.688) C:72% T:87%	pCi/L	10/29/19 12:24	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581
Pace Project No.: 2623794

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623794001	**HGWA-1**	EPA 9315	366498		
2623794002	**HGWA-2**	EPA 9315	366498		
2623794003	**HGWA-3**	EPA 9315	366498		
2623794001	**HGWA-1**	EPA 9320	366499		
2623794002	**HGWA-2**	EPA 9320	366499		
2623794003	**HGWA-3**	EPA 9320	366499		
2623794001	**HGWA-1**	Total Radium Calculation	368512		
2623794002	**HGWA-2**	Total Radium Calculation	368512		
2623794003	**HGWA-3**	Total Radium Calculation	368512		

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	Standard TAT	Project #:	GW6581	Pace Profile #:	327 (AP)

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
		MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																									
1	HGWA-1	WT	G	9-30-19	9:39	9-30-19	9:52	18.8	2			2													Y	N	1
2	HGWA-2	WT	G	9/30/19	11:04	9-30-19	11:17	21.3	2			2													Y	N	2
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

09-30-2019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dan Gibbs / Geosyntec	09-30-19	1725	Chad Russo geo	9/30	1725	
	Chad Russo	9/30	1900	PASUAL SAMMONS PACE	10/1/19	10:30	
				Charles Hunt	10/1/19	1205	5.1 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER:

DATE Signed: 09-30-2019

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

WO#: 2623794

2623794

Pace Analytical

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	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10382775	Pace Quote:	
Phone: (404)506-7239	Fax:	Project Name:	Plant Hammond	Pace Project Manager:	betsy.mcdaniel@pacelabs.com,
Requested Due Date:	standard TAT	Project #:	GWG581	Pace Profile #:	327 (AP)

Regulatory Agency: —

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test Y/N	Antimony, Arsenic, Barium	Beryllium, Boron, Calcium	Cadmium, Chromium, Cobalt	Lead, Lithium, Molybdenum	Selenium, Thallium	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																										
1	HGWA-3	GW	G	9/30	1059	9/30	1135	21	2			2													Y	N	3
2																											
3																											
4																											
5																											
6																											
7										(CR)																	
8												9/30/19															
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Chad Russo geo	9/30	1900	PASCAL RAYMOND PACE	10/1/19	10:30				
				Charlie Hanks	10/1/19	1205	5.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo

DATE Signed: 9/30/19

WO#: 2623794

PM: BM Due Date: ~~10/29/19~~

CLIENT: GAPower-CCR

Pace Analytical

Sample Condition Upon Receipt

WO#: 2623794

Client Name: GAPower CCR

PM: BM Due Date: 10/29/19

CLIENT: GAPower-CCR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other _____

Tracking #: _____

Optional: 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 214 **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.1°C **Biological Tissue is Frozen:** Yes No Date and Initials of person examining contents: 10/11 CDH

Temp should be above freezing to 6°C **Comments:**

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT HAMMOND
Pace Project No.: 2626152

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on November 26, 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,

Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT HAMMOND
Pace Project No.: 2626152

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT HAMMOND
Pace Project No.: 2626152

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2626152001	**MW-26D**	Water	11/25/19 15:12	11/26/19 09:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND
Pace Project No.: 2626152

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2626152001	**MW-26D**	EPA 6020B	CSW	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2626152

Sample: MW-26D **Lab ID: 2626152001** Collected: 11/25/19 15:12 Received: 11/26/19 09:00 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								
Molybdenum	**0.020**	mg/L	0.010	0.00095	1	12/02/19 13:42	12/04/19 21:29	7439-98-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2626152

QC Batch: 39751
QC Batch Method: EPA 3005A
Associated Lab Samples: 2626152001

Analysis Method: EPA 6020B
Analysis Description: 6020B MET

METHOD BLANK: 180656
Associated Lab Samples: 2626152001

Matrix: Water

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	mg/L	ND	0.010	0.00095	12/04/19 18:55	

LABORATORY CONTROL SAMPLE: 180657

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 180658 180659

Parameter	Units	2625931031 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT HAMMOND
Pace Project No.: 2626152

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND
Pace Project No.: 2626152

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2626152001	**MW-26D**	EPA 3005A	39751	EPA 6020B	39777

Pace Analytical

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:		Section B – Required Project Information:		Section C – Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham	Attention:	scsinvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339				Address:	
Email:	jabraham@southernco.com	Purchase Order #:		Pace Quote:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond	Pace Project Manager:	kevin.herring@pacelabs.com,
Requested Due Date:	5 day TAT	Project #:	GWCSBI	Pace Profile #:	

Regulatory Agency

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test: Y/N	Fluoride	Lithium	Molybdenum	Residual Chlorine (Y/N)
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																	Analyses Test	N (19)		N	
1	MW-26D	WT	G	11/25	1510	11/25	1512	19	1			1									Y	N
2	~~MW-30D~~	WT	G	11/25	1109	(02)													Y	Y	Y	#
3																						
4																						
5																						
6						(CR)																
7																						
8																						
9																						
10																						
11																						
12																						

11/25/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Chad Russo / geo	11/25/19	2130	Noelia Morton / geo	11/25/19	21:30				
	Noelia Morton / Geo	11/26/19	0900	[illegible] / Pace	11/26/19	9:00				
				K. WELLINGTON / PACE	11/26	1215	0.5	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed: 11/25/19

Page 9 of 10

IO#: 2626152

2626152

Sample Condition Upon Receipt

Pace Analytical

Client Name: _____

WO#: 2626153

PM: KH Due Date: 12/05/19

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 THR083 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:

Date and Initials of person examining contents: _____

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

3000 W20

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

F-ALL-Q-020rev.07, 15September2006

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT HAMMOND
Pace Project No.: 2626196

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on November 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT HAMMOND
Pace Project No.: 2626196

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT HAMMOND
Pace Project No.: 2626196

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2626196001	**MW-30D**	Water	11/26/19 14:51	11/27/19 09:48
2626196002	**MW-30D FILTERED**	Water	11/26/19 14:55	11/27/19 09:48

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND
Pace Project No.: 2626196

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2626196001	**MW-30D**	EPA 6020B	CSW	2
		EPA 300.0	MWB	1
2626196002	**MW-30D FILTERED**	EPA 6020B	CSW	2
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2626196

Sample: MW-30D **Lab ID: 2626196001** Collected: 11/26/19 14:51 Received: 11/27/19 09:48 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								
Lithium	**0.23**	mg/L	0.030	0.00078	1	12/04/19 19:40	12/06/19 11:20	7439-93-2	
Molybdenum	**0.041**	mg/L	0.010	0.00095	1	12/04/19 19:40	12/06/19 11:20	7439-98-7	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**10.3**	mg/L	0.30	0.029	1		12/05/19 06:17	16984-48-8	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2626196

Sample: MW-30D FILTERED **Lab ID: 2626196002** Collected: 11/26/19 14:55 Received: 11/27/19 09:48 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								
Lithium	**0.23**	mg/L	0.030	0.00078	1	12/04/19 19:40	12/06/19 11:43	7439-93-2	
Molybdenum	**0.041**	mg/L	0.010	0.00095	1	12/04/19 19:40	12/06/19 11:43	7439-98-7	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**10.3**	mg/L	0.30	0.029	1		12/05/19 07:23	16984-48-8	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2626196

QC Batch: 39976 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2626196001, 2626196002

METHOD BLANK: 181646 Matrix: Water
Associated Lab Samples: 2626196001, 2626196002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lithium	mg/L	ND	0.030	0.00078	12/06/19 11:09	
Molybdenum	mg/L	ND	0.010	0.00095	12/06/19 11:09	

LABORATORY CONTROL SAMPLE: 181647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 181648 181649

Parameter	Units	2626196001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	0.23	0.1	0.1	0.32	0.33	89	101	75-125	4	20	
Molybdenum	mg/L	0.041	0.1	0.1	0.15	0.15	105	105	75-125	0	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2626196

QC Batch: 39953 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2626196001, 2626196002

METHOD BLANK: 181511 Matrix: Water
Associated Lab Samples: 2626196001, 2626196002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	12/05/19 05:10	

LABORATORY CONTROL SAMPLE: 181512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 181513 181514

Parameter	Units	2626196001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	10.3	10	10	18.3	18.0	80	77	90-110	2	15	M1

MATRIX SPIKE SAMPLE: 181515

Parameter	Units	2626196002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10.3	10	14.0	37	90-110	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT HAMMOND
Pace Project No.: 2626196

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.

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND
Pace Project No.: 2626196

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2626196001	**MW-30D**	EPA 3005A	39976	EPA 6020B	40001
2626196002	**MW-30D FILTERED**	EPA 3005A	39976	EPA 6020B	40001
2626196001	**MW-30D**	EPA 300.0	39953		
2626196002	**MW-30D FILTERED**	EPA 300.0	39953		

Pace Analytical

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 Fax
Requested Due Date:	5day TAT

Section B — Required Project Information:

Report To:	Joju Abraham
Copy To:	Lauren Petty, Geosyntec
Purchase Order #:	
Project Name:	Plant Hammond
Project #:	GW6581

Section C — Invoice Information:

Attention:	scsinvoices@southernco.com
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	kevin.herring@pacelabs.com,
Pace Profile #:	

Regulatory Agency:

State / Location: GA

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Fluoride	Lithium	Molybdenum	Residual Chlorine (Y/N)
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																		N	N	N	
1	MW-30D	WT	G	11/26	1448	11/26	1451	19	2	1		1							Y	Y	Y	N
2	MW-30D FILTERED	WT	G	11/26	1452	11/26	1455	19	2	1		1							Y	Y	Y	N
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

CR 11/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Chad Russo/Geo	11/26/19	2040	Mallia Mullum/Geo	11/26/19	2040	
	Mallia Mullum/Geo	11/27/19	0945	Romero Hicks / Pace	11/26/19	9:48	
				K. WELLINGTON / PACE	11/27	1230	48 Y N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed: 11/26/19

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: _____ 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 THR083 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.8 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: _____

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

3000 W28

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

December 11, 2019

Joju Abraham
Georgia Power - Coal Combustion Residuals
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT HAMMOND
Pace Project No.: 2626197

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on November 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT HAMMOND
Pace Project No.: 2626197

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT HAMMOND
Pace Project No.: 2626197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2626197001	**FB-01**	Water	11/26/19 18:38	11/27/19 09:48
2626197002	**EB-01**	Water	11/26/19 18:38	11/27/19 09:48

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND
Pace Project No.: 2626197

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2626197001	**FB-01**	EPA 6020B	CSW	4
		SM 2540C	ALW	1
		EPA 300.0	MWB	1
2626197002	**EB-01**	EPA 6020B	CSW	4
		SM 2540C	ALW	1
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2626197

Sample: FB-01 **Lab ID: 2626197001** Collected: 11/26/19 18:38 Received: 11/27/19 09:48 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	**0.034J**	mg/L	0.10	0.011	1	12/04/19 19:40	12/06/19 11:49	7440-70-2	B
Cobalt	ND	mg/L	0.0050	0.00030	1	12/04/19 19:40	12/06/19 11:49	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	12/04/19 19:40	12/06/19 11:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	12/04/19 19:40	12/06/19 11:49	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**17.0**	mg/L	10.0	10.0	1		12/02/19 12:36		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		12/05/19 07:46	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT HAMMOND
Pace Project No.: 2626197

Sample: EB-01 **Lab ID: 2626197002** Collected: 11/26/19 18:38 Received: 11/27/19 09:48 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	**0.035J**	mg/L	0.10	0.011	1	12/04/19 19:40	12/06/19 11:55	7440-70-2	B
Cobalt	ND	mg/L	0.0050	0.00030	1	12/04/19 19:40	12/06/19 11:55	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	12/04/19 19:40	12/06/19 11:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	12/04/19 19:40	12/06/19 11:55	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		12/02/19 12:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		12/05/19 08:08	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2626197

QC Batch: 39976 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2626197001, 2626197002

METHOD BLANK: 181646 Matrix: Water
Associated Lab Samples: 2626197001, 2626197002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	0.031J	0.10	0.011	12/06/19 11:09	
Cobalt	mg/L	ND	0.0050	0.00030	12/06/19 11:09	
Lithium	mg/L	ND	0.030	0.00078	12/06/19 11:09	
Molybdenum	mg/L	ND	0.010	0.00095	12/06/19 11:09	

LABORATORY CONTROL SAMPLE: 181647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	100	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 181648 181649

Parameter	Units	2626196001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	23.1	1	1	24.3	24.9	115	182	75-125	3	20	
Cobalt	mg/L	ND	0.1	0.1	0.098	0.098	97	98	75-125	1	20	
Lithium	mg/L	0.23	0.1	0.1	0.32	0.33	89	101	75-125	4	20	
Molybdenum	mg/L	0.041	0.1	0.1	0.15	0.15	105	105	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2626197

QC Batch: 39749
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2626197001, 2626197002

LABORATORY CONTROL SAMPLE: 180643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	395	99	84-108	

SAMPLE DUPLICATE: 180644

Parameter	Units	2626099001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	278	269	3	10	

SAMPLE DUPLICATE: 180645

Parameter	Units	2626164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2330	2250	3	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT HAMMOND
Pace Project No.: 2626197

QC Batch: 39953 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2626197001, 2626197002

METHOD BLANK: 181511 Matrix: Water
Associated Lab Samples: 2626197001, 2626197002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	12/05/19 05:10	

LABORATORY CONTROL SAMPLE: 181512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 181513 181514

Parameter	Units	2626196001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	10.3	10	10	18.3	18.0	80	77	90-110	2	15	M1

MATRIX SPIKE SAMPLE: 181515

Parameter	Units	2626196002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10.3	10	14.0	37	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT HAMMOND
Pace Project No.: 2626197

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND
Pace Project No.: 2626197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2626197001	**FB-01**	EPA 3005A	39976	EPA 6020B	40001
2626197002	**EB-01**	EPA 3005A	39976	EPA 6020B	40001
2626197001	**FB-01**	SM 2540C	39749		
2626197002	**EB-01**	SM 2540C	39749		
2626197001	**FB-01**	EPA 300.0	39953		
2626197002	**EB-01**	EPA 300.0	39953		

Pace Analytical

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:	Section B Required Project Information:	Section C Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com	Regulatory Agency:
Address: 2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:	
Atlanta, GA 30339		Address:	
Email: jabraham@southernco.com	Purchase Order #:	Pace Quote:	State / Location: GA
Phone: (404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: kevin.herring@pacelabs.com,	
Requested Due Date: Standard TAT 5-day	Project #: GW2581	Pace Profile #:	

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Calcium	Cobalt	Fluoride	Lithium	Molybdenum	TDS	Residual Chlorine (Y/N)
																		Requested Analysis Filtered (Y/N)	N	N	N	N	N	N	
1	~~EB-01~~ FB-01	WT	G	11/26	1836	11/26	1838		3	2		1							Y	Y	Y	Y	Y	Y	N
2	~~FB-01~~ EB-01	WT	G	11/26	1835	11/26	1838		3	2		1							Y	Y	Y	Y	Y	Y	N
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

(CR) 11/26/19

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Chad Russo / GCO	11/26/19	2040	Malia Mustain / GCO	11/26/19	2040				
	Malia Mustain / GCO	11/27/19	0945	Pace	11/26/19	9:48				
				K. WELLINGTON / PACE	11/27	1250	4.8	Y	N	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: Chad Russo DATE Signed: 11/26/19

Sample Condition Upon Receipt

Pace Analytical

Client Name: _____ 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 THE083 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.8 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments:

Date and Initials of person examining contents: _____

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

3000 W28

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
(Pending 2019 2nd semester)

Geosyntec consultants

180A Market Place Boulevard
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date: June 5, 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 2616036, 2616037, 2616039, 2616040, 2616042, 2616043, 2616120, 2616121, 2616161, 2616162, 2616168, 2616170, 2616228, 2616229, 2616230 and 2616231**

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of thirty-two aqueous samples, two field duplicate samples, one equipment blank and two field blanks, collected 12-15 March 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 by Environmental Protection Agency (EPA) Methods 3005A/6020B
- Mercury by EPA Method 7470A
- Anions by EPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and 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);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- 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
2616036001	HGWA-1
2616036002	HGWA-2
2616036003	HGWA-3
2616036004	FB-01
2616036005	EB-01
2616037001	HGWA-1
2616037002	HGWA-2
2616037003	HGWA-3
2616037004	FB-01
2616037005	EB-01
2616039001	HGWA-4
2616039002	HGWA-5
2616039003	HGWA-6
2616040001	HGWA-4
2616040002	HGWA-5
2616040003	HGWA-6
2616042001	MW-28D
2616042002	HGWC-8
2616042003	MW-29
2616043001	MW-28D
2616043002	HGWC-8
2616043003	MW-29
2616120001	MW-7

Laboratory ID	Client ID
2616120002	MW-26D
2616120003	HGWC-9
2616120004	MW-27D
2616120005	MW-6
2616120006	HGWC-10
2616120007	MW-24D
2616120008	HGWC-13
2616120009	FD-1
2616120010	MW-20
2616120011	MW-5
2616120012	HGWC-7
2616120013	HGWC-11
2616121001	MW-7
2616121002	MW-26D
2616121003	HGWC-9
2616121004	MW-27D
2616121005	MW-6
2616121006	HGWC-10
2616121007	MW-24D
2616121008	HGWC-13
2616121009	FD-1
2616121010	MW-20
2616121011	MW-5

Laboratory ID	Client ID
2616121012	HGWC-7
2616121013	HGWC-11
2616161001	HGWC-12
2616161002	MW-25D
2616161003	MW-19
2616162001	HGWC-15
2616162002	FD-2
2616162003	HGWC-18
2616162004	MW-23D
2616162005	HGWC-14
2616168001	HGWC-12
2616168002	MW-25D
2616168003	MW-19
2616170001	HGWC-15
2616170002	FD-2

Laboratory ID	Client ID
2616170003	HGWC-18
2616170004	MW-23D
2616170005	HGWC-14
2616228001	MW-22
2616228002	HGWC-16
2616228003	MW-21D
2616228004	HGWC-17
2616229001	MW-22
2616229002	HGWC-16
2616229003	MW-21D
2616229004	HGWC-17
2616230001	FB-02
2616231001	FB-02

The samples were received within 0-6 degrees Celsius (^{o}C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- The relinquishing signature, date and time were missing for the final sample transfer on the COCs.
- 2616120, 2616121, 2616162 and 2616170: There were no times of collection listed on the COCs for the field duplicates, FD-01 and FD-02. The laboratory assigned collection times of 00:00.
- 2616042, 2616043, 2616120, 26166121, 2616162 and 2616170: The years were missing from the start and end collection times.
- 2616228: The collection start and end times were not listed on the COC for sample HGWC-17. The sample was logged in per the information on the sample container.
- 2616036, 2616037, 2616039, 2616040, 2616042 and 2616043: There were time discrepancies between the *relinquished by* times and *received by* times. The *relinquished by* times were documented as March 13, 2019 0943 and the *received by* times were documented as March 13, 2019 0944.

1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury evaluated separately in Section 2.0, below).

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). Six method blanks were reported (batches 24312, 24384, 24489, 24594, 24597 and 24707). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

2616036, 2616039 and 2616042: Arsenic was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 24384. Therefore, the arsenic concentrations in the associated samples less than five times the method blank concentration were U* qualified as not detected at the reported concentrations.

2616120: Antimony was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 24489. Therefore, the antimony concentrations in the associated samples less than five times the method blank concentration 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**
MW-7	Antimony	0.00086	J	0.00086	U*	BL
FD-1	Antimony	0.00088	J	0.00088	U*	BL
HGWA-2	Arsenic	0.00069	J	0.00069	U*	BL
HGWA-3	Arsenic	0.00063	J	0.00063	U*	BL

mg/L- milligram per liter
J- estimated concentration greater than the MDL and less than the RL
* 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

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 HGWA-6 and HGWC-13. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria.

Four batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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). Six 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

Two field blanks were collected with the sample sets, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs, with the following exception.

Boron was detected at an estimated concentration greater than the MDL and less than the RL in FB-02. Since boron was not reported for the associated samples, no qualifications were applied to the data.

1.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision (RPD ≤ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect 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 flags D3, M6 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the 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 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

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

2.1 Overall Assessment

The mercury 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%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 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). Five method blanks were reported (batches 24380, 24399, 24464, 24639 and 24983). Mercury was not detected in the method blanks above the MDL.

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). Three sample set specific MS/MSD pairs were reported using samples MW-28D, MW-7 and MW-22. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

Two batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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). Five LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

2.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Mercury was not detected in the equipment blank above the MDL.

2.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Mercury was not detected in the field blanks above the MDL.

2.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

2.9 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

2.10 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. There were several laboratory report specific EDDs that 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.

3.0 ANIONS

The samples were analyzed for fluoride by EPA method 300.0.

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
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

3.1 Overall Assessment

The fluoride 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%.

3.2 Holding Times

The holding time for the fluoride analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 24402, 24522, 24743 and 24985). Fluoride was not detected in the method blanks above the MDL.

3.4 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). Two sample set specific MS/MSD pairs were reported, using samples HGWA-6 and HGWA-4 and two sample set specific MSs were reported using samples HGWA-5 and MW-22. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

Two batch MSs and three batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

3.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Fluoride was not detected in the equipment blank above the MDL.

3.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Fluoride was not detected in the field blanks above the MDL.

3.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

3.9 Sensitivity

The samples were reported to the MDL. No elevated nondetect results were reported.

3.10 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 flags D6, M1 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the 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.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

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
✓ Tracers and Carriers

- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 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%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the radium-228 data (batches 334688, 334703, 334699 and 334690). Three method blanks were reported for the radium-226 data (batches 334698, 334701 and 334689). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

2616037: Radium-226 was detected above the MDC in the method blank in batch 334698. Therefore, the radium-226 concentration in the associated sample less than the method blank concentration was U* qualified as not detected at the reported concentration.

2616037 and 2616043: Radium-228 was detected above the MDC in the method blank in batch 334688. Therefore, the radium-228 concentration in the associated sample greater than the method blank concentration with a normalized absolute difference (NAD) < 2.58 was U* qualified as not detected at the reported concentration.

2616040, 2616170, 2616229 and 2616231: Radium-226 was detected above the MDC in the method blank in batch 334701. Therefore, the radium-226 concentration in the associated sample less than the method blank concentration and the radium-226 concentrations in the associated samples greater than the method blank concentration with a NAD < 2.58 were U* qualified as not detected at the reported concentrations.

2616168 and 2616170: Radium-228 was detected above the MDC in the method blank in batch 334690. Since radium-228 was not detected above the MDC in the associated samples, no qualifications were applied to the data.

In addition, the combined radium-226 + 228 concentrations were qualified as following:

- Combined radium-226 + 228 concentrations with either radium-226 or radium-228 less than the MDC and the second component with a concentration that was U* qualified as not detected at the reported concentration were also U* qualified as not detected at the reported concentration.

- Combined radium-226 + 228 concentration with a radium-226 concentration that was U* qualified as not detected at the reported concentration and a radium-228 concentration greater than the MDC was J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
MW-29	Radium-228	1.18	NA	1.18	U*	BL
MW-29	Combined Radium 226 + 228	1.37	NA	1.37	U*	BL
HGWA-4	Radium-226	0.244	NA	0.244	U*	BL
HGWA-3	Radium-226	0.387	NA	0.387	U*	BL
MW-22	Radium-226	0.335	NA	0.335	U*	BL
MW-22	Combined Radium 226 + 228	0.977	NA	0.977	U*	BL
MW-23D	Radium-226	0.328	NA	0.328	U*	BL
HGWC-14	Radium-226	0.759	NA	0.759	U*	BL
HGWC-14	Combined Radium 226 + 228	1.50	NA	1.50	J	BL

pCi/L- picocuries per liter
NA-not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs and one LCS/LCS duplicate (LCSD) pair were reported for radium-226. Four LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory and SOP specified acceptance criteria.

4.6 Laboratory Duplicate

Three sample set specific laboratory duplicates were reported for radium-226 using samples MW-29, HGWC-17 and MW-21D. The RER (2σ) results were within the laboratory and SOP specified acceptance criteria.

One batch laboratory duplicate was also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

4.8 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Radium-226 and Radium-228 were not detected in the equipment blank above the MDCs.

4.9 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Radium-226 and Radium-228 were not detected in the field blanks above the MDCs.

4.10 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-01 and FD-02. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicates and the original samples HGWC-13 and HGWC-15, respectively.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 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. No 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
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.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

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Memorandum

Date: June 6, 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 2616885, 2616886, 2616925, 2616926, 2616927, 2616928, 2616933, 2616935, 2616997, 2616998, 2617067, 2617068, 2617069, 2617072, 2617073, 2617146, 2617147, 2617148, 2617149, 2617150, 2617152, 2617205, 2617206, 2617207 and 2617208**

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of thirty-five aqueous samples, one field duplicate sample, one equipment blank and two field blanks, collected 1-8 April 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 by Environmental Protection Agency (EPA) Methods 3005A/6020B
- Mercury by EPA Method 7470A
- Anions (Fluoride, Chloride, and Sulfate) by EPA Method 300.0
- Total Dissolved Solid (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and 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);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- 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
2616885001	HGWA-3
2616886001	HGWA-3
2616925001	HGWA-1
2616925002	HGWA-2
2616926001	HGWA-1
2616926002	HGWA-2
2616927001	HGWA-4
2616927002	HGWA-5
2616927003	HGWA-6
2616928001	HGWA-4
2616928002	HGWA-5
2616928003	HGWA-6
2616933001	MW-29
2616933002	MW-20
2616933003	MW-28D
2616933004	HGWC-7
2616935001	MW-29
2616935002	MW-20
2616935003	MW-28D
2616935004	HGWC-7
2616997001	HGWC-9
2616997002	MW-26D
2616997003	MW-19

Laboratory ID	Client ID
2616997004	MW-5
2616997005	HGWC-8
2616997006	HGWC-10
2616997007	MW-6
2616997008	MW-7
2616997009	HGWC-11
2616997010	HGWC-12
2616997011	MW-25D
2616998001	HGWC-9
2616998002	MW-26D
2616998003	MW-19
2616998004	MW-5
2616998005	HGWC-8
2616998006	HGWC-10
2616998007	MW-6
2616998008	MW-7
2616998009	HGWC-11
2616998010	HGWC-12
2616998011	MW-25D
2617067001	MW-27D
2617068001	MW-27D
2617069001	HGWC-103
2617069002	FD-01

Laboratory ID	Client ID
2617069003	HGWC-105
2617069004	HGWC-101
2617072001	HGWC-15
2617072002	HGWC-16
2617072003	MW-21D
2617073001	HGWC-15
2617073002	HGWC-16
2617073003	MW-21D
2617146001	HGWC-13
2617147001	HGWC-13
2617148001	FB-01
2617149001	FB-01
2617150001	MW-22
2617150002	MW-23D
2617150003	HGWC-14

Laboratory ID	Client ID
2617150004	HGWC-17
2617150005	HGWC-18
2617152001	MW-22
2617152002	MW-23D
2617152003	HGWC-14
2617152004	HGWC-17
2617152005	HGWC-18
2617205001	MW-24D
2617206001	MW-24D
2617207001	FB-02
2617207002	EB-01
2617208001	FB-02
2617208002	EB-01

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- The relinquishing signature, date and time were missing for the final sample transfer on the COCs.
- 2617069: There was no time of collection listed on the COC for the field duplicate, FD-01. The laboratory assigned collection time of 00:00.
- 2616933, 2616935, 2616997, 2616998, 2617072, 2617073, 2617150 and 2617152: The years were missing from the start and end collection times from one or more pages of the COCs.
- 2616997 and 2616998: The *relinquished by* times were missing for the third sample transfer on pages one and three of the COC and the second sample transfer on page two of the COC.

Laboratory report 2617067 was revised on April 12, 2019 to correct the units and analyte list for the metals data.

Laboratory report 2617069 was revised on April 13, 2019 to correct the units and analyte list for the metals data.

Laboratory reports 2617146 and 2617150 were revised on April 15, 2019 to correct the units for the metals data.

Laboratory reports 2617148, 2617205 and 2617207 were revised on April 16, 2019 to correct the units for the metals data.

1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury evaluated separately in Section 2.0, below).

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). Seven method blanks were reported (batches 25905, 25906, 25997, 468126, 468622, 469500 and 468616). 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). Four sample set specific MS/MSD pairs were reported using samples HGWC-7, MW-6, HGWC-15 and FB-01. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of calcium were high and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample HGWC-7. Since the calcium concentration in sample HGWC-7 was greater than four times the spiked concentration, no qualifications were applied to the data, based on professional and technical judgment.

The recoveries of calcium were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample MW-6. Since the calcium concentration in sample MW-6 was greater than four times the spiked concentration, no qualifications were applied to the data, based on professional and technical judgment.

The recoveries of boron and calcium were high and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample HGWC-15. Since the boron and calcium concentrations in sample HGWC-15 were greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

Batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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). Seven 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 set, EB-01. Metals were not detected in the equipment blank above the MDLs.

1.7 Field Blank

Two field blanks were collected with the sample set, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs, with the following exceptions.

Aluminum, barium, calcium, copper, manganese and potassium were detected at estimated concentrations greater than the MDLs and less than the reporting limits (RLs) and zinc (0.017 mg/L) was detected at a concentration greater than the RL in FB-01. Since aluminum, copper, manganese, potassium and zinc were not reported for the associated samples and barium and calcium were detected in the associated samples at concentrations greater than five times the field blank concentrations, no qualifications were applied to the data.

1.8 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample HGWC-103.

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 flags D3, BC, C0 and M6 used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the 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 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

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

2.1 Overall Assessment

The mercury 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%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 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 (batch 468895). Mercury was not detected in the method blank above the MDL.

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 batch MS/MSD pair was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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). One LCS was reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

2.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Mercury was not detected in the equipment blank above the MDL.

2.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Mercury was not detected in the field blanks above the MDL.

2.8 Field Duplicate

One field duplicate was collected with the sample set but was not analyzed for mercury.

2.9 Sensitivity

The samples were reported to the MDL. No elevated non-detect results were reported.

2.10 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. There were several laboratory report specific EDDs that 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.

3.0 WET CHEMISTRY

The samples were analyzed for anions (fluoride, chloride 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

3.1 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%.

3.2 Holding Times

The holding time for the anions (fluoride, chloride and sulfate) analysis of a water sample is 28 days from sample collection to analysis. The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Seven method blanks were reported for the anions (batches 25881, 25882, 25883, 25956, 26061, 26064 and 26135). The anions were not detected in the method blanks above the MDLs, with the following exceptions.

2616885 and 2616925: Chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 25881. Since chloride and sulfate were detected in the associated samples at concentrations greater than five times the method blank concentrations, no qualifications were applied to the data.

2616927 and 2616933: Chloride was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 25882. Since chloride was detected in the associated samples at concentration greater than five times the method blank concentrations, no qualifications were applied to the data.

2616997: Chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 25883. Since chloride and sulfate were detected in the associated samples at concentrations greater than five times the method blank concentrations, no qualifications were applied to the data.

2617067: Chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 25956. Since chloride and sulfate were detected in the associated sample at concentrations greater than five times the method blank concentrations, no qualifications were applied to the data.

2617069 and 2617072: Chloride was detected at a concentration greater than the RL in the method blank in batch 26061. Since chloride was detected in the associated samples at concentrations greater than five times the method blank concentration, no qualifications were applied to the data.

2617148, 2617150, 2617205 and 2617207: Chloride was detected at a concentration greater than the RL in the method blank in batch 26135. Therefore, the chloride concentrations in the associated samples less than five times the method blank concentration 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**
FB-01	Chloride	0.11	J	0.11	U*	BL
FB-02	Chloride	0.25	J	0.25	U*	BL
EB-01	Chloride	0.22	J	0.22	U*	BL

mg/L- milligram per liter
J- estimated concentration greater than the MDL and less than the RL
* 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

3.4 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). Four sample set specific MS/MSD pairs were reported, using samples HGWA-3, HGWA-4, HGWC-9 and HGWC-103 and four sample set specific MSs were reported using samples HGWA-5, MW-26D, FD-01 and MW-22. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of chloride and sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS using sample HGWA-3. Since the sulfate concentration in sample HGWA-3 was greater than four times the spiked concentration, no qualifications were applied to the sulfate data, based on professional and technical judgment. However, the chloride concentration in the associated sample was J qualified as estimated.

The recovery of sulfate was low and outside the laboratory and SOP specified acceptance criteria in the MS using sample HGWA-5. Therefore, the sulfate concentrations in the associated samples were J qualified as estimated.

The recoveries of chloride and sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample HGWC-9. Since the chloride and sulfate

concentrations in sample HGWC-9 were greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

The recoveries of chloride and sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS using sample MW-26D. Since the chloride and sulfate concentrations in sample MW-26D were greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

The recoveries of sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample HGWC-103. Since the sulfate concentration in sample HGWC-103 was greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

The recovery of sulfate was low and outside the laboratory and SOP specified acceptance criteria in the MS using sample FD-01. Since the sulfate concentration in sample FD-01 was greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

The recoveries of chloride and sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS using sample MW-22. Since the chloride and sulfate concentrations in sample MW-22 were greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

Batch MSs and MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-3	Chloride	6.5	NA	6.5	J	M-
HGWA-4	Sulfate	4.9	NA	4.9	J	M-
HGWA-5	Sulfate	23.8	NA	23.8	J	M-
HGWA-6	Sulfate	35.5	NA	35.5	J	M-

mg/L- milligram per liter
NA-not applicable

3.5 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 batch and analysis. The recovery results were within the laboratory and SOP specified acceptance criteria.

3.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for TDS, using samples HGWC-105 and HGWC-14. The RPD results were within the laboratory and SOP specified acceptance criteria.

Batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.7 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.

Chloride, sulfate and TDS were detected at estimated concentrations greater than the MDLs and less than the RLs in EB-01. Since the chloride concentration in EB-01 was U* qualified as not detected due to method blank contamination and sulfate was detected in the associated samples at concentrations greater than five times the equipment blank concentration, no additional qualifications were applied to the chloride and sulfate data, based on professional and technical judgment. However, the TDS concentration in the associated sample less than five times the equipment blank concentration was U* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
MW-25D	TDS	15	J	15	U*	BE

mg/L- milligram per liter
J- estimated concentration greater than the MDL and less than the RL

3.8 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. The wet chemistry parameters were not detected in the field blanks above the MDLs, with the following exceptions.

Chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-01. Since the chloride concentration in FB-01 was U* qualified as not detected due to method blank contamination and sulfate was detected in the associated samples at concentrations greater than five times the field blank concentration, no additional qualifications were applied to the data, based on professional and technical judgment.

Chloride, sulfate and TDS were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-02. Since the chloride concentration in FB-02 was U* qualified as not detected due to method blank contamination and sulfate was detected in the associated samples

at concentrations greater than five times the field blank concentration, no additional qualifications were applied to the chloride and sulfate data, based on professional and technical judgment. However, the TDS concentration in the associated sample less than five times the equipment blank concentration was U* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
MW-25D	TDS	15	J	15	U*	BF

mg/L- milligram per liter
J- estimated concentration greater than the MDL and less than the RL

3.9 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample HGWC-103.

3.10 Sensitivity

The samples were reported to the MDLs. No elevated non-detect results were reported.

3.11 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 flags M1 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the 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.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

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
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 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%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported for the radium-228 data (batches 337341, 337342, 338745, 337911 and 337915). Six method blanks were reported for the radium-226 data (batches 337391, 337392, 337393, 337917, 337923 and 338631). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

2617147 and 2617149: Radium-228 was detected at a concentration greater than the MDC in the method blank in batch 337915. Since radium-228 was not detected above the MDC in the associated samples, no qualifications were applied to the data.

2617206 and 2617208: Radium-226 was detected at a concentration greater than the MDC in the method blank in batch 338631. Therefore, the radium-226 concentration in the associated sample

that was greater than the method blank concentration and with a normalized absolute difference (NAD) less than 2.58 was U* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
FB-02	Radium-226	0.170	NA	0.170	U*	BL

pCi/L- picocuries per liter
NA-not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs and four LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Five LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory and SOP specified acceptance criteria, with the following exception.

2616998: The recovery of radium-226 was high and outside the laboratory and SOP specified acceptance criteria in the LCS in batch 337393. Therefore, the radium-226 concentrations greater than the MDC in the associated samples were J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
MW-5	Radium-226	0.607	NA	0.607	J	L+
HGWC-10	Radium-226	1.80	NA	1.8	J	L+
MW-6	Radium-226	0.789	NA	0.789	J	L+

pCi/L- picocuries per liter
U-not detected at or above the MDC
NA-not applicable

4.6 Laboratory Duplicate

Three sample set specific laboratory duplicates were reported for radium-226 using samples HGWC-7, MW-5 and HGWC-11. The RER (2σ) results were within the laboratory and SOP specified acceptance criteria.

Three batch laboratory duplicates were also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

4.8 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Radium-226 and Radium-228 were not detected in the equipment blank above the MDCs.

4.9 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Radium-226 and Radium-228 were not detected in the field blanks above the MDCs, with the following exception.

Radium-226 was detected at a concentration greater than the MDC in FB-02. Since the radium-226 concentration in FB-02 was U* qualified due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

4.10 Field Duplicate

One field duplicate was collected but was not reported for the radiochemistry parameters.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated non-detect results were reported.

4.12 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. No discrepancies were identified between the level II reports and the EDDs.

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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.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

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Memorandum

Date: 17 January 2020

To: Whitney Law

From: Kristoffer Henderson

CC: J. Caprio

Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2623500, 2623553, 2623555, 2623559, 2623560, 2623567, 2623571, 2623636, 2623637, 2623639, 2623640, 2623693, 2623694, 2623710, 2623711, 2623712, 2623713, 2623714, 2623715, 2623746, 2623747, 2623748, 2623749 and 2623794**

SITE: Plant Hammond AP1/AP2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of thirty-seven aqueous samples, two field duplicate samples, two equipment blanks and two field blanks, collected 23-30 September 2019, as part of the Plant Hammond AP1/AP2 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Total and Dissolved Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Total and Dissolved Chloride, Fluoride and Sulfate by USEPA Method 300.0

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by USEPA Method 9315
- Radium-228 by USEPA Method 9320
- Total Radium by Calculation

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data as qualified are usable for meeting project objectives. 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); and,
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2623500001	HGWA-1
2623500002	HGWA-2
2623500003	HGWA-3
2623553001	FB-01
2623553002	EB-01
2623555001	FB-01
2623555002	EB-01
2623559001	HGWA-5
2623559002	HGWA-6
2623559003	HGWA-4
2623559004	HGWC-14
2623559005	HGWC-15
2623560001	HGWA-5
2623560002	HGWA-6
2623560003	HGWA-4
2623560004	HGWC-14
2623560005	HGWC-15
2623567001	HGWC-8
2623567002	MW-30d
2623567003	MW-29
2623571001	HGWC-8
2623571002	MW-30d
2623571003	MW-29
2623636001	HGWC-16
2623636002	HGWC-17
2623636003	HGWC-18
2623636004	MW-21d
2623637001	HGWC-16
2623637002	HGWC-17
2623637003	HGWC-18
2623637004	MW-21d
2623639001	HGWC-7

Laboratory ID	Client ID
2623639002	MW-20
2623639003	MW-5
2623640001	HGWC-7
2623640002	MW-20
2623640003	MW-5
2623693001	FD-01
2623694001	FD-01
2623710001	MW-23d
2623710002	FD-02
2623711001	MW-23d
2623711002	FD-02
2623712001	HGWC-13
2623712002	MW-24D
2623712003	MW-27D
2623712004	MW-6
2623712005	MW-7
2623712006	MW-28D
2623712007	MW-28D (Filtered)
2623712008	MW-26D
2623713001	HGWC-13
2623713002	MW-24D
2623713003	MW-27D
2623713004	MW-6
2623713005	MW-7
2623713006	MW-28D
2623713007	MW-28D (Filtered)
2623713008	MW-26D
2623714001	EB-02
2623714002	FB-02
2623715001	EB-02
2623715002	FB-02
2623746001	MW-22

Laboratory ID	Client ID
2623747001	MW-22
2623748001	HGWC-9
2623748002	HGWC-10
2623748003	MW-19
2623748004	MW-25d
2623748005	HGWC-12
2623748006	HGWC-11
2623749001	HGWC-9

Laboratory ID	Client ID
2623749002	HGWC-10
2623749003	MW-19
2623749004	MW-25d
2623749005	HGWC-12
2623749006	HGWC-11
2623794001	HGWA-1
2623794002	HGWA-2
2623794003	HGWA-3

The samples were received within 0-6ºC. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2623693, 2623694, 2623710 and 2623711: There were no times of collection listed for the field duplicates, FD-01 and FD-02. The laboratory assigned collection times of 00:00.
- 2623693, 2623694, 2623710, 2623711, 2623712, 2623713, 2623714, 2623715 and 2623794: The relinquished by date and time were not documented for the final sample transfer.
- 2623553 and 2623555: There was a time discrepancy for the sample transfer. For the first sample transfer on page 1 of the COC and the second sample transfer on pages 2 and 3 of the COC, the relinquished by times were documented as 9/23/19 2010 and the received by times were documented as 9/23/19 1117.
- 2623567 and 2623571: The laboratory noted that sample MW-29 was labeled HGWC-7. The client was notified, and the laboratory was instructed to log the sample in as MW-29.

Laboratory report 2623500 was revised on October 1, 2019 to remove compounds not requested on the COC.

1.0 METALS

The samples were analyzed for metals by USEPA 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
✓ Assessment of Total Metals vs. Dissolved Metals
✓ 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 the 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). Seven method blanks were reported (batches 36079, 36136, 36170, 36173, 36236, 36449 and 36434). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

2623500 and 2623553: Arsenic was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 36079. Therefore, the arsenic concentrations in the associated samples less than five times the method 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**
HGWA-1	Arsenic	0.00046	J B	0.00046	U*	BL
HGWA-2	Arsenic	0.00067	J B	0.00067	U*	BL
HGWA-3	Arsenic	0.0011	J B	0.0011	U*	BL
FB-01	Arsenic	0.0006	J B	0.0006	U*	BL
EB-01	Arsenic	0.00046	J B	0.00046	U*	BL
HGWA-1	Arsenic	0.00046	J B	0.00046	U*	BL
HGWA-5	Arsenic	0.00055	J B	0.00055	U*	BL

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWC-14	Arsenic	0.0039	J B	0.0039	U*	BL
HGWC-15	Arsenic	0.00037	J B	0.00037	U*	BL

mg/L- milligram per liter
J- estimated concentration greater than the MDL and less than the RL
B-laboratory flag indicating analyte was detected in the associated method blank
* 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

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). Three sample set specific MS/MSD pairs were reported using samples HGWA-1, HGWC-8 and MW-28D (Filtered). The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The MS recovery was low, and the MSD recovery was high for calcium, both outside the laboratory specified acceptance criteria in the MS/MSD pair using sample HGWA-1. Since the calcium concentration in sample HGWA-1 was greater than four times the spiked concentration, no qualifications were applied to the data.

The recovery of calcium in the MS using sample HGWC-8 was low and outside the laboratory specified acceptance criteria. Since the calcium concentration in sample HGWC-8 was greater than four times the spiked concentration, no qualifications were applied to the data.

The MS recovery was high, and the MSD recovery was low for dissolved calcium, both outside the laboratory specified acceptance criteria in the MS/MSD pair using sample MW-28D (Filtered). Since the dissolved calcium concentration in sample MW-28D (Filtered) was greater than four times the spiked concentration, no qualifications were applied to the data.

Four batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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). Seven LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

1.6 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs, with the following exceptions.

Arsenic (0.00046 mg/L) and calcium (0.064 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in EB-01. Since the arsenic concentration in EB-01 was U* qualified due to method blank contamination and the calcium concentration in the associated samples were greater than five times the equipment blank concentration, no additional qualifications were applied to the arsenic data.

Chromium (0.0063 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in EB-02. Therefore, the chromium concentrations less than five times the equipment blank concentration 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-15	Chromium	0.00041	J	0.00041	U*	BE
MW-30d	Chromium	0.00041	J	0.00041	U*	BE
MW-5	Chromium	0.0052	J	0.0052	U*	BE
FD-01	Chromium	0.0027	J	0.0027	U*	BE
FD-02	Chromium	0.0012	J	0.0012	U*	BE
MW-24D	Chromium	0.00042	J	0.00042	U*	BE
MW-7	Chromium	0.0013	J	0.0013	U*	BE
MW-28D	Chromium	0.00081	J	0.00081	U*	BE
MW-28D (Filtered)	Chromium, Dissolved	0.00048	J	0.00048	U*	BE
MW-26D	Chromium	0.00076	J	0.00076	U*	BE
MW-22	Chromium	0.0004	J	0.0004	U*	BE

mg/L- milligram per liter
J-estimated concentration greater than the MDL and less than the RL

1.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs.

Arsenic (0.00060 mg/L) and calcium (0.028 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-01. Since the arsenic concentration in FB-01 was U* qualified due to method blank contamination and the calcium concentration in the associated samples were greater than five times the field blank concentration, no additional qualifications were applied to the data.

1.8 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-1 and FD-2. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples HGWC-8 and MW-23D, respectively.

1.9 Assessment of Total Metals vs. Dissolved Metals

Sample MW-28D was collected as both a filtered (dissolved) and an unfiltered sample (total) due to high turbidity in the sample. The concentrations of the unfiltered sample were greater than or equal to the concentrations of the filtered sample.

1.10 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.11 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 flags B, M1 and M6 used in the level II reports were not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 2540C and chloride, fluoride and sulfate by USEPA method 300.0.

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
✓ Assessment of Total vs. Dissolved

✓ 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 this analysis, for the dataset is 100%.

2.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Chloride, Fluoride and Sulfate	28 days from collection to analysis

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). Seven method blanks were reported for the anions (batches 500244, 500861, 36185, 500864, 36286, 36494 and 36548). The anions were not detected in the method blanks above the MDLs, with the following exceptions.

2623567 and 2623693: Chloride (0.033 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 36185. Since the chloride concentrations in the associated samples were greater than five times the method blank concentration, no qualifications were applied to the data.

2623710 and 2623712: Chloride (0.031 mg/L) and sulfate (0.053 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 36185. Since the chloride and sulfate concentrations in the associated samples were greater than five times the method blank concentrations, no qualifications were applied to the data.

2623714: Chloride (0.026 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 36494. Since the chloride concentrations in the associated samples were greater than five times the method blank concentration, no qualifications were applied to the data.

2623746 and 2623748: Chloride (0.033 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 36548. Since the chloride concentrations in the associated samples were greater than five times the method blank concentration, no qualifications were applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
EB-02	Chloride	0.035	J B	0.035	U*	BL
FB-02	Chloride	0.028	J B	0.028	U*	BL

mg/L- milligram per liter
J- estimated concentration greater than the MDL and less than the RL
B-laboratory flag indicating analyte was detected in the associated method blank

2.4 Matrix Spike/Matrix Spike Duplicate

One sample set specific MS/MSD pair was reported using sample HGWA-5 and two sample set specific MSs were reported using samples MW-29 and EB-02 for the anions. The RPD and recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

The recovery of sulfate in the MS using sample MW-29 was low and outside the laboratory specified acceptance criteria. Since the sulfate concentration in sample MW-29 was greater than four times the spiked concentration, no qualifications were applied to the data.

Batch MSs and MS/MSD pairs were also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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 as appropriate. The recovery results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Six sample set specific laboratory duplicates were reported for TDS using samples FB-01, HGWA-5, HGWC-7, FD-02, FB-02 and MW-19. The RPD results were within the laboratory specified acceptance criteria.

Batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.7 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. The wet chemistry parameters were not detected in the equipment blanks above the MDLs, with the following exceptions.

TDS (13.0 mg/L) was detected at a concentration greater than the RL and chloride (0.035 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in EB-02. Since the chloride concentration in EB-02 was U* qualified due to method blank contamination and TDS was detected at concentrations greater than five times the equipment blank concentration, no qualifications were applied to the data.

2.8 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. The wet chemistry parameters were not detected in the field blanks above the MDLs, with the following exceptions.

TDS (13.0 mg/L) was detected at a concentration greater than the RL and chloride (0.028 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in FB-02. Since the chloride concentration in FB-02 was U* qualified due to method blank contamination

and TDS was detected at concentrations greater than five times the field blank concentration, no qualifications were applied to the data.

2.9 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-1 and FD-2. Acceptable precision (RPD $\leq$ 20% or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples HGWC-8 and MW-23D, respectively.

2.10 Assessment of Total vs. Dissolved

Sample MW-28D was collected as both a filtered (dissolved) and an unfiltered sample (total) due to high turbidity in the sample. The concentrations of the unfiltered sample were greater than or equal to the concentrations of the filtered sample.

2.11 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

2.12 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 flags M6 and B used in the level II reports were not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

3.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

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
✓ Tracers and Carriers

⊗ Equipment Blank
✓ Field Blank
✓ Field Duplicate
✓ Assessment of Total vs. Dissolved
✓ Sensitivity
✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The radium-226 and radium-228 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%.

3.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Six method blanks were reported for the radium-228 data (batches 365380, 365381, 365002, 365382, 365559, 365771 and 366499). Seven method blanks were reported for the radium-226 data (batches 365376, 365377, 365001, 365379, 365558, 365770 and 366498). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

2623555, 2623560, 2623571, 2623711, 2623713, 2623747, 2623749 and 2623794: Radium-226 was detected at concentrations greater than the MDCs in the method blanks in batches 365376, 365377, 365001, 365558, 365770 and 366498. Therefore, the radium-226 concentrations in the associated samples less than five times the method blank concentrations were U* qualified as not detected at the reported concentrations. In addition, the total radium concentrations with both a U* qualified result for radium-226 and radium-228 concentration less than the MDCs were U* qualified as not detected and the total radium concentrations with both a U* qualified result for radium-226 and radium-228 concentration greater than the MDC was J qualified as estimated.

2623794: Radium-228 was detected at a concentration greater than the MDC in the method blank in batch 366499. Since radium-228 was not detected in the associated samples at concentrations greater than the MDCs, no qualifications were applied to the data.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-6	Radium-226	0.412	NA	0.412	U*	BL
HGWA-6	Combined Radium 226 + 228	0.874	U	0.874	U*	BL
HGWA-4	Radium-226	0.422	NA	0.422	U*	BL
HGWA-4	Combined Radium 226 + 228	0.455	U	0.455	U*	BL
HGWC-14	Radium-226	0.609	NA	0.609	U*	BL
HGWC-14	Combined Radium 226 + 228	1.17	NA	1.17	U*	BL
HGWC-15	Radium-226	0.464	NA	0.464	U*	BL
HGWC-15	Combined Radium 226 + 228	0.582	U	0.582	U*	BL
HGWC-8	Radium-226	0.652	NA	0.652	U*	BL
HGWC-8	Combined Radium 226 + 228	1.30	NA	1.30	U*	BL
MW-30d	Radium-226	0.416	NA	0.416	U*	BL
MW-30d	Combined Radium 226 + 228	1.16	NA	1.16	U*	BL
MW-29	Radium-226	0.451	NA	0.451	U*	BL

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
MW-29	Combined Radium 226 + 228	0.675	U	0.675	U*	BL
MW-23d	Radium-226	0.512	NA	0.512	U*	BL
MW-23d	Combined Radium 226 + 228	1.25	NA	1.25	U*	BL
FD-02	Radium-226	0.331	NA	0.331	U*	BL
FD-02	Combined Radium 226 + 228	0.545	U	0.545	U*	BL
HGWC-13	Radium-226	0.939	NA	0.939	U*	BL
HGWC-13	Combined Radium 226 + 228	0.939	U	0.939	U*	BL
MW-24D	Radium-226	0.531	NA	0.531	U*	BL
MW-24D	Combined Radium 226 + 228	0.878	U	0.878	U*	BL
MW-27D	Radium-226	0.759	NA	0.759	U*	BL
MW-7	Radium-226	0.485	NA	0.485	U*	BL
MW-7	Combined Radium 226 + 228	0.947	U	0.947	U*	BL
MW-28D	Radium-226	0.474	NA	0.474	U*	BL
MW-28D	Combined Radium 226 + 228	0.997	U	0.997	U*	BL
MW-28D (Filtered)	Radium-226	0.374	NA	0.374	U*	BL
MW-28D (Filtered)	Combined Radium 226 + 228	0.727	U	0.727	U*	BL
MW-22	Radium-226	0.493	NA	0.493	U*	BL
MW-22	Combined Radium 226 + 228	1.44	U	1.44	U*	BL
MW-19	Radium-226	0.534	NA	0.534	U*	BL
MW-19	Combined Radium 226 + 228	0.534	U	0.534	U*	BL
MW-25d	Radium-226	0.676	NA	0.676	U*	BL
MW-25d	Combined Radium 226 + 228	0.945	U	0.945	U*	BL
HGWC-12	Radium-226	0.806	NA	0.806	U*	BL
HGWC-12	Combined Radium 226 + 228	0.958	U	0.958	U*	BL
HGWC-11	Radium-226	0.444	NA	0.444	U*	BL
HGWC-11	Combined Radium 226 + 228	1.78	NA	1.78	J	BL
HGWA-2	Radium-226	0.585	NA	0.585	U*	BL
HGWA-2	Combined Radium 226 + 228	1.04	U	1.04	U*	BL

pCi/L-picocuries per liter
NA-not applicable

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS and five LCS/LCS duplicate (LCSD) pairs were reported for radium-226. One LCS and four LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2σ)] results were within the laboratory specified acceptance criteria, with the following exception.

2623555: The recovery of radium-228 was high in the LCS in batch 365380. Since radium-228 was not detected in the associated samples above the MDCs, no qualifications were applied to the data.

3.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for radium-226 using samples. The RER (2σ) result was within the laboratory specified acceptance criteria.

Six batch laboratory duplicates were also reported for radium-226 and two batch laboratory duplicates were reported for radium-228. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

3.8 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Radium-226 and radium-228 were not detected in the equipment blanks above the MDCs, with the following exceptions.

Radium-226 and radium-228 were detected at concentrations greater than the MDC in EB-02. Since the radium-226 concentration in EB-02 was U* qualified due to method blank contamination, no additional qualifications were applied to the radium-226 data, based on

professional and technical judgment. However, the radium-228 concentrations in the associated samples less than five times the method blank concentrations were U* qualified as not detected at the reported concentrations. In addition, the total radium concentration with both a U* qualified result for radium-228 and radium-226 concentration greater than the MDC was J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-11	Radium-228	1.34	NA	1.34	U*	BE
HGWC-18	Radium-228	1.68	NA	1.68	U*	BE
HGWC-18	Combined Radium 226 + 228	2.77	NA	2.77	J	BE

pCi/L-picocuries per liter
NA-not applicable

3.9 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Radium-226 and radium-228 were not detected in the field blanks above the MDCs, with the following exceptions.

Radium-226 was detected at a concentration greater than the MDC in FB-02. Since the radium-226 concentration in FB-02 was U* qualified due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

3.10 Field Duplicate

Two field duplicate samples were collected with the sample sets, FD-1 and FD-2. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicates and the original samples HGWC-8 and MW-23D, respectively.

3.11 Assessment of Total vs. Dissolved

Sample MW-28D was collected as both a filtered (dissolved) and an unfiltered sample (total) due to high turbidity in the sample. The concentrations of the unfiltered sample were greater than or equal to the concentrations of the filtered sample.

3.12 Sensitivity

The samples were reported to the MDCs. No elevated nondetect results were reported.

3.13 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. No discrepancies were identified between the level II reports and the EDDs.

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ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

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.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Reason Code	Explanation
13	Other
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."
H	Holding time exceedance.
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.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

Geosyntec consultants

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Memorandum

Date:	15 January 2020
To:	Whitney Law
From:	Kristoffer Henderson
CC:	J. Caprio
Subject:	**Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2626152, 2626196 and 2626197**

SITE: Plant Hammond AP1/AP2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of two aqueous samples, one field blank and one equipment blank collected 25-26 November 2019, as part of the Plant Hammond AP1/AP2 on-site sampling event.

The sample was analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Total and Dissolved Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Total and Dissolved Fluoride by USEPA Method 300.0

EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. 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); and
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001)

The following sample was analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2626152001	MW-26D
2626196001	MW-30D
2626196002	MW-30D FILTERED

Laboratory ID	Client ID
2626197001	FB-01
2626197002	EB-01

The sample was received within 0-6ºC. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2626152, 2626196 and 2626197: The year was not documented for the collection start and end times.
- 2626152, 2626196 and 2626197: The relinquishing signatures, dates and times were missing for the third sample transfers.

1.0 METALS

The sample was analyzed for metals by USEPA 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
✓ Laboratory Duplicate
✓ Equipment Blank
✓ Field Blank
✓ Field Duplicate
✓ Assessment of Total Metals vs. Dissolved Metals
✓ 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 the 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 39751 and 39976). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

Calcium was detected in the method blank in batch 39976 at an estimated concentration greater than the MDL and less than the reporting limit (RL). Therefore, the calcium concentrations less than five times the method blank concentration were U* qualified as not detected.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier	Reason Code
FB-01	Calcium	0.034	J B	0.034	U*	BL
EB-01	Calcium	0.035	J B	0.035	U*	BL

mg/L- milligram per liter
J-estimated concentration greater than the MDL and less than the RL
B-laboratory flag indicating analyte was detected in the associated method blank
* 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

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). One sample set MS/MSD pair was reported using sample MW-30D. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

One batch MS/MSD pair was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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 specified acceptance criteria.

1.6 Laboratory Duplicate

One batch laboratory duplicate was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.7 Equipment Blank

One equipment blank was collected with the sample set, EB-01. The metals were not detected in the equipment blank above the MDL.

Calcium was detected in EB-01 at an estimated concentration greater than the MDL and less than the RL. Since the calcium concentration in EB-01 was U* qualified due to method blank contamination, no additional qualifications were applied to the data.

1.8 Field Blank

One field blank was collected with the sample set, FB-01. The metals were not detected in the field blank above the MDL, with the following exception.

Calcium was detected in FB-01 at an estimated concentration greater than the MDL and less than the RL. Since the calcium concentration in FB-01 was U* qualified due to method blank contamination, no additional qualifications were applied to the data.

1.9 Field Duplicate

A field duplicate was not collected with the sample set.

1.10 Assessment of Total Metals vs. Dissolved Metals

Sample MW-30D was collected as both a filtered (dissolved) and unfiltered sample (total) due to high turbidity in the sample. The concentrations of unfiltered sample were greater than or equal to the concentrations of filtered sample.

1.11 Sensitivity

The sample was reported to the MDLs. Elevated nondetect results were not reported.

1.12 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flag B used in the level II report was not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

2.0 WET CHEMISTRY

The sample was analyzed for TDS by Standard Method 2540C and fluoride by USEPA method 300.0.

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
✓ Assessment of Total Fluoride vs. Dissolved Fluoride
✓ 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 this analysis, for the dataset is 100%.

2.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Fluoride	28 days from collection to analysis

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 fluoride (batch 39953). Fluoride was not detected in the method blank above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

One sample set MS/MSD pair was reported using sample MW-30D and one MS was reported using MW-30D FILTERED for fluoride. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of fluoride were low and outside the laboratory specified acceptance criteria in the MS/MSD pair using sample MW-30D and MS using sample MW-30D FILTERED. Therefore, the fluoride concentrations in samples MW-30D and MW-30D FILTERED were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier	Reason Code
MW-30D	Fluoride	10.3	M1	10.3	J	M-
MW-30D FILTERED	Fluoride	10.3	M1	10.3	J	M-

mg/L- milligram per liter
M1-laboratory flag indicating MS recovery exceeded the QC limits

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 as appropriate. The recovery results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Batch laboratory duplicates were reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.7 Equipment Blank

One equipment blank was collected with the sample set, EB-01. TDS and fluoride were not detected in the equipment blank above the MDL.

2.8 Field Blank

One field blank was collected with the sample set, FB-01. TDS and fluoride were not detected in the field blank above the MDL, with the following exception.

TDS (17.0 mg/L) was detected in FB-01 at a concentration greater than RL. Since TDS was not reported for the associated samples, no qualifications were applied to the data.

2.9 Field Duplicate

A field duplicate was not collected with the sample set.

2.10 Assessment of Total Fluoride vs. Dissolved Fluoride

Sample MW-30D was collected as both a filtered (dissolved) and unfiltered sample (total) due to high turbidity in the sample. The concentration of unfiltered sample was greater than or equal to the concentration of filtered sample.

2.11 Sensitivity

The sample was reported to the MDLs. No elevated nondetect results were reported.

2.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II report was not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

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ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

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.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Reason Code	Explanation
13	Other
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."
H	Holding time exceedance.
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.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

APPENDIX D2

Field Sampling Forms

Product Name: Low-Flow System

Date: 2019-03-12 14:41:33

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWA-1	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.86 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:44:55	599.95	16.93	6.98	968.33	3.90	7.35	1.65	74.36
Last 5	13:49:55	899.94	16.69	7.00	969.59	3.41	7.35	1.41	72.66
Last 5	13:54:55	1199.93	16.83	7.02	952.90	2.32	7.35	1.24	71.66
Last 5	13:59:55	1499.92	16.88	7.03	939.07	2.25	7.35	1.10	71.20
Last 5	14:04:55	1799.92	16.83	7.03	922.59	2.04	7.35	0.99	70.88
Variance 0			0.14	0.01	-16.69			-0.17	-1.01
Variance 1			0.05	0.01	-13.83			-0.15	-0.45
Variance 2			-0.05	0.01	-16.49			-0.11	-0.33

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 32.33 ft.

Grab Samples

HGWA-1

Grab

Product Name: Low-Flow System

Date: 2019-03-12 10:27:42

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWA-2	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.46 ft	Total Volume Pumped	22.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:02:18	2099.97	16.46	5.41	212.00	8.78	4.71	0.18	81.80
Last 5	10:07:18	2399.96	16.47	5.41	210.94	7.56	4.71	0.22	83.70
Last 5	10:12:18	2699.95	16.51	5.45	213.69	6.86	4.71	0.21	86.19
Last 5	10:17:18	2999.95	16.60	5.40	209.59	5.43	4.71	0.15	89.30
Last 5	10:22:18	3299.94	16.59	5.42	210.33	4.87	4.71	0.14	92.50
Variance 0			0.04	0.03	2.75			-0.01	2.49
Variance 1			0.08	-0.05	-4.11			-0.06	3.11
Variance 2			-0.01	0.02	0.75			-0.01	3.20

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 28.42 ft.

Grab Samples

HGWA-2

Grab

Product Name: Low-Flow System

Date: 2019-03-12 10:27:50

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWA-3	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.15 ft	Total Volume Pumped	28.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:32:56	309.11	16.38	7.24	465.78	1.08	4.16	0.15	26.29
Last 5	09:37:56	609.01	16.38	7.25	464.67	1.24	4.16	0.14	28.17
Last 5	09:42:56	909.01	16.47	7.27	463.57	1.09	4.16	0.15	15.14
Last 5	09:47:56	1209.00	16.55	7.28	462.80	0.68	4.16	0.14	11.62
Last 5	09:52:56	1509.00	16.47	7.29	463.79	0.78	4.16	0.15	7.59
Variance 0			0.09	0.02	-1.10			0.00	-13.03
Variance 1			0.08	0.01	-0.77			-0.01	-3.53
Variance 2			-0.07	0.01	0.99			0.00	-4.03

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 45.25 ft.

Grab Samples

HGWA-3

Grab

Product Name: Low-Flow System

Date: 2019-03-13 16:00:50

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-7	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.38 ft	Total Volume Pumped	17 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:17:10	2999.95	18.58	7.26	825.64	7.00	3.47	0.07	66.43
Last 5	15:22:10	3299.94	18.69	7.27	821.46	6.27	3.47	0.07	66.49
Last 5	15:27:10	3599.93	18.52	7.26	826.64	5.21	3.47	0.11	66.57
Last 5	15:32:09	3899.93	18.44	7.27	826.65	5.13	3.47	0.18	66.41
Last 5	15:37:09	4199.92	18.45	7.27	826.48	4.79	3.47	0.12	66.31
Variance 0			-0.17	-0.00	5.18			0.03	0.08
Variance 1			-0.09	0.01	0.01			0.08	-0.16
Variance 2			0.01	0.00	-0.16			-0.06	-0.10

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 30.48 ft.

Grab Samples

HGWC-7

Grab

Product Name: Low-Flow System

Date: 2019-03-12 15:53:16

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-8	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	1.66 ft	Total Volume Pumped	16.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:32:38	2099.97	18.62	6.92	921.61	8.67	1.67	1.12	120.06
Last 5	15:37:38	2399.96	18.54	6.92	917.54	5.93	1.67	0.83	119.91
Last 5	15:42:38	2699.96	18.48	6.91	920.89	5.32	1.67	1.04	115.86
Last 5	15:47:38	2999.94	18.53	6.91	926.43	3.84	1.67	0.98	114.24
Last 5	15:52:37	3299.92	18.52	6.91	853.94	--	--	0.85	113.23
Variance 0			-0.06	-0.00	3.35			0.21	-4.05
Variance 1			0.05	-0.00	5.54			-0.06	-1.62
Variance 2			-0.01	0.00	-72.49			-0.13	-1.00

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 25.04 ft.

Grab Samples

HGWC-8

Grab

Product Name: Low-Flow System

Date: 2019-03-13 12:12:22

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-9	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.80 ft	Total Volume Pumped	31 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:53:59	3599.98	17.51	7.08	1165.91	6.64	6.85	0.24	113.68
Last 5	10:58:59	3899.98	17.41	7.07	1167.08	6.07	6.85	0.23	114.31
Last 5	11:03:59	4199.97	17.30	7.08	1171.26	5.85	6.85	0.32	114.68
Last 5	11:08:58	4499.96	17.50	7.07	1169.87	5.08	6.85	0.25	115.34
Last 5	11:13:58	4799.96	17.42	7.06	1169.26	4.46	6.85	0.20	116.19
Variance 0			-0.12	0.00	4.18			0.09	0.38
Variance 1			0.20	-0.00	-1.39			-0.08	0.66
Variance 2			-0.08	-0.01	-0.61			-0.04	0.85

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 47.68 ft.

Grab Samples

HGWC-9

Grab

Product Name: Low-Flow System

Date: 2019-03-13 11:57:23

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	18 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1703416 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.73 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:43:48	300.04	16.23	6.75	453.31	3.64	5.78	3.29	71.30
Last 5	11:48:48	600.01	16.68	6.76	450.50	3.19	5.78	3.13	72.67
Last 5	11:53:48	900.00	16.78	6.77	450.26	2.57	5.78	3.05	74.59
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.45	0.01	-2.80			-0.16	1.37
Variance 2			0.10	0.01	-0.24			-0.07	1.92

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth =22.71 ft.

Grab Samples

HGWC-10

Grab

Product Name: Low-Flow System

Date: 2019-03-13 17:46:13

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-11	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	7.70 ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:48:08	300.06	17.09	5.87	808.38	4.45	7.82	3.77	57.84
Last 5	16:53:08	600.01	17.05	5.83	798.47	3.92	7.82	3.60	59.34
Last 5	16:58:08	900.00	17.09	5.86	763.26	2.49	7.82	3.49	60.49
Last 5	17:03:08	1199.99	17.20	5.91	754.29	2.17	7.82	3.30	62.16
Last 5	17:08:08	1499.98	17.24	5.92	735.18	1.74	7.82	3.22	63.38
Variance 0			0.04	0.02	-35.21			-0.10	1.15
Variance 1			0.11	0.05	-8.97			-0.20	1.67
Variance 2			0.04	0.01	-19.11			-0.08	1.23

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 25.98 ft.

Grab Samples

HGWC-11

Grab

Product Name: Low-Flow System

Date: 2019-03-14 09:58:38

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-12	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.01 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:22:29	300.10	17.73	7.08	814.18	5.66	8.02	0.14	124.40
Last 5	09:27:29	600.02	17.81	7.09	813.85	4.45	8.02	0.13	125.39
Last 5	09:32:29	900.00	17.86	7.09	813.34	3.64	8.02	0.14	127.52
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.08	0.01	-0.33			-0.01	0.99
Variance 2			0.05	0.00	-0.51			0.01	2.13

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 35.01 ft.

Grab Samples

HGWC-12

Grab

Product Name: Low-Flow System

Date: 2019-03-13 15:29:19

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-13	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.12 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:16:14	300.04	19.86	7.24	605.33	10.06	16.24	0.64	-13.08
Last 5	15:21:14	600.02	19.91	7.24	600.86	5.95	16.24	0.50	-16.50
Last 5	15:26:14	900.01	19.88	7.24	603.58	4.80	16.24	0.29	-19.16
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.04	0.00	-4.48			-0.14	-3.43
Variance 2			-0.02	-0.00	2.73			-0.21	-2.66

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 45.54 ft.

Grab Samples

HGWC-13

Grab

FD-1

HGWC-13 Dup Grab

Product Name: Low-Flow System

Date: 2019-03-13 12:39:45

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-5	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.83 ft	Total Volume Pumped	3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:57:34	300.05	17.54	6.21	690.85	1.03	9.00	1.50	49.10
Last 5	12:02:34	600.01	17.58	6.17	691.37	1.23	9.00	1.45	51.07
Last 5	12:07:34	900.00	17.59	6.16	691.06	1.02	8.99	1.42	53.01
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.04	-0.04	0.53			-0.05	1.97
Variance 2			0.01	-0.01	-0.32			-0.03	1.94

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 31.5 ft.

Grab Samples

MW-5

Grab

Product Name: Low-Flow System

Date: 2019-03-13 10:42:46

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	28 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-6	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2149758 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	9.14 ft	Total Volume Pumped	9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:24:24	300.04	18.50	6.85	991.16	7.98	9.18	1.22	25.80
Last 5	10:29:24	600.01	18.57	6.86	1062.01	6.28	9.18	1.23	25.71
Last 5	10:34:24	900.00	18.58	6.86	1064.96	5.07	9.18	1.11	24.74
Last 5	10:39:24	1199.99	18.79	6.86	1064.03	4.93	9.18	1.17	26.23
Last 5									
Variance 0			0.07	0.01	70.85			0.01	-0.09
Variance 1			0.01	0.00	2.95			-0.13	-0.97
Variance 2			0.21	0.00	-0.93			0.07	1.49

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 32.93 ft.

Grab Samples

MW-6

Grab

Product Name: Low-Flow System

Date: 2019-03-13 17:48:33

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-7	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.63 ft	Total Volume Pumped	31 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:02:13	8101.92	17.87	6.33	332.26	0.83	5.63	4.74	120.05
Last 5	17:07:13	8401.91	17.90	6.39	351.21	1.05	5.63	3.16	120.28
Last 5	17:12:13	8701.91	17.84	6.37	346.02	0.69	5.63	2.37	120.76
Last 5	17:17:13	9001.90	17.85	6.36	343.89	0.65	5.63	2.50	121.32
Last 5	17:22:13	9301.90	17.75	6.37	351.52	1.06	5.63	2.57	121.14
Variance 0			-0.06	-0.01	-5.19			-0.79	0.47
Variance 1			0.01	-0.01	-2.12			0.13	0.56
Variance 2			-0.10	0.01	7.63			0.07	-0.18

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 16.73 ft.

Grab Samples

MW-7

Grab

Product Name: Low-Flow System

Date: 2019-03-14 14:30:23

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.99 ft	Total Volume Pumped	16.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:38:51	3600.99	18.33	6.47	506.67	8.09	6.61	0.32	53.74
Last 5	13:43:51	3900.99	18.61	6.48	504.62	7.03	6.61	0.30	55.62
Last 5	13:48:51	4200.98	18.66	6.48	504.06	5.46	6.61	0.26	56.93
Last 5	13:53:51	4500.98	18.61	6.47	505.36	4.96	6.61	0.24	58.39
Last 5	13:58:51	4800.98	18.61	6.48	499.80	4.67	6.61	0.21	59.92
Variance 0			0.04	0.00	-0.56			-0.04	1.31
Variance 1			-0.05	-0.02	1.30			-0.02	1.46
Variance 2			0.00	0.02	-5.56			-0.03	1.54

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 29.47 ft.

Grab Samples

MW-19

Grab

Product Name: Low-Flow System

Date: 2019-03-13 11:01:11

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.87 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:07:03	900.00	16.38	6.80	520.62	7.45	7.11	1.08	85.01
Last 5	10:12:03	1199.99	16.49	6.71	641.78	5.12	7.13	0.50	61.11
Last 5	10:17:03	1499.99	16.63	6.67	772.69	4.28	7.14	0.40	42.43
Last 5	10:22:03	1799.98	16.78	6.73	790.37	3.42	7.16	0.27	28.44
Last 5	10:27:03	2099.97	16.83	6.75	793.09	2.70	7.17	0.22	20.95
Variance 0			0.15	-0.04	130.90			-0.11	-18.68
Variance 1			0.15	0.05	17.68			-0.13	-14.00
Variance 2			0.05	0.02	2.72			-0.05	-7.49

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 34.37 ft.

Grab Samples

MW-20

Grab

Product Name: Low-Flow System

Date: 2019-03-13 14:22:40

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	65 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-24D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3801225 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	19.65 ft	Total Volume Pumped	11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:09:25	300.02	20.30	7.58	537.75	4.68	19.74	0.32	49.06
Last 5	14:14:25	600.01	20.44	7.58	537.10	4.45	19.74	0.47	51.32
Last 5	14:19:25	900.01	20.38	7.58	537.93	3.80	19.74	0.55	45.70
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.14	-0.01	-0.65			0.15	2.27
Variance 2			-0.06	-0.00	0.84			0.08	-5.62

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 72.81 ft.

Grab Samples

MW-24D

Grab

Product Name: Low-Flow System

Date: 2019-03-14 11:50:32

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-25D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	7.57 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:57:07	1500.01	18.03	7.67	802.13	5.46	12.70	0.21	26.12
Last 5	11:02:07	1800.01	18.13	7.67	800.42	5.05	12.85	0.22	17.33
Last 5	11:07:07	2100.00	18.08	7.68	799.53	5.01	12.90	0.23	9.17
Last 5	11:12:07	2400.00	18.10	7.66	799.15	4.87	12.93	0.19	1.22
Last 5	11:17:07	2700.00	18.17	7.67	799.77	4.64	12.96	0.16	-6.79
Variance 0			-0.05	0.00	-0.88			0.01	-8.15
Variance 1			0.02	-0.01	-0.38			-0.03	-7.95
Variance 2			0.06	0.01	0.62			-0.03	-8.01

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 63.15 ft.

Grab Samples

MW-25D

Grab

Product Name: Low-Flow System

Date: 2019-03-13 13:37:29

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-26D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.85 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:02:06	300.06	18.51	7.49	746.39	5.64	6.99	0.46	77.49
Last 5	13:07:06	600.02	18.63	7.43	745.27	4.70	6.99	0.61	77.32
Last 5	13:12:06	900.01	18.44	7.40	749.46	3.89	6.99	0.48	76.35
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.12	-0.07	-1.12			0.15	-0.17
Variance 2			-0.19	-0.02	4.19			-0.13	-0.97

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 77.97 ft.

Grab Samples

MW-26D

Grab

Product Name: Low-Flow System

Date: 2019-03-13 09:23:15

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	55 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-27D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3354883 L
Well Total Depth	63.04 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.37 ft	Total Volume Pumped	27 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:20:20	300.06	17.23	7.78	407.17	2.44	16.66	1.60	39.90
Last 5									
Last 5									
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.00	0.00			0.00	0.00
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

Prepurged 24h prior to sample. Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle w ith HNO3 for App. IV metals (EPA 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 63.04 ft.

Grab Samples

MW-27D

Grab

Product Name: Low-Flow System

Date: 2019-03-12 17:49:27

Project Information:		Pump Information:	
Operator Name	Benjamin Mejia-Tickner	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613179		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-28D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.75 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:07:33	300.02	18.61	7.46	539.64	2.30	3.60	0.22	3.91
Last 5	17:12:33	600.02	18.66	7.45	539.33	2.29	3.60	0.21	-6.24
Last 5	17:17:33	900.01	18.68	7.46	541.80	2.05	3.60	0.21	-17.88
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.05	-0.00	-0.31			-0.01	-10.15
Variance 2			0.02	0.01	2.47			-0.00	-11.64

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EP A 6020B/ 7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 58.2 ft.

Grab Samples

MW-28D

Grab

Product Name: Low-Flow System

Date: 2019-03-12 18:34:33

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-29	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.44 ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:44:38	321.06	16.38	7.22	1021.16	2.71	3.51	0.12	76.57
Last 5	17:49:38	621.01	16.52	7.21	1020.91	3.52	3.49	0.10	75.01
Last 5	17:54:38	921.00	16.56	7.20	1023.02	3.04	3.49	0.08	73.39
Last 5	17:59:38	1220.99	16.54	7.20	1021.29	3.05	3.49	0.08	72.02
Last 5									
Variance 0			0.13	-0.01	-0.25			-0.02	-1.56
Variance 1			0.04	-0.01	2.11			-0.01	-1.62
Variance 2			-0.02	0.00	-1.73			-0.01	-1.37

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A); and one 120-mL plastic bottle for fluoride (EPA 300.0). Total depth = 28.23 ft.

Grab Samples

MW-29

Grab

Product Name: Low-Flow System

Date: 2019-04-02 09:46:15

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	27.5 ft

Well Information:		Pumping Information:	
Well ID	HGWA-1	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	10.44 ft	Total Volume Pumped	10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:23:38	300.01	16.00	6.82	913.48	1.01	11.25	1.07	39.65
Last 5	09:28:38	599.95	16.03	6.83	890.15	1.23	11.22	0.79	33.74
Last 5	09:33:38	899.95	16.11	6.85	860.38	1.13	11.22	0.58	29.09
Last 5	09:38:38	1199.95	16.17	6.84	835.73	0.79	11.25	0.49	27.02
Last 5	09:43:38	1499.94	16.22	6.86	815.04	0.84	11.26	0.41	24.50
Variance 0			0.08	0.01	-29.77			-0.21	-4.65
Variance 1			0.06	-0.00	-24.65			-0.08	-2.07
Variance 2			0.05	0.01	-20.69			-0.08	-2.52

Notes

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 3 00.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 32.30 ft.

Grab Samples

HGWA-1

Grab

Product Name: Low-Flow System

Date: 2019-04-02 13:40:26

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWA-2	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.93 ft	Total Volume Pumped	11.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:41:30	1499.98	16.86	5.43	212.89	7.76	6.00	0.37	100.65
Last 5	12:46:30	1799.97	16.91	5.42	211.84	6.57	6.01	0.33	103.01
Last 5	12:51:30	2099.96	17.00	5.39	208.90	5.90	6.02	0.30	105.38
Last 5	12:56:30	2399.95	16.99	5.40	209.20	5.42	6.02	0.28	107.67
Last 5	13:01:30	2699.94	17.09	5.41	209.45	4.74	6.00	0.26	110.11
Variance 0			0.09	-0.02	-2.95			-0.03	2.37
Variance 1			-0.00	0.00	0.30			-0.02	2.29
Variance 2			0.09	0.01	0.25			-0.02	2.45

Notes

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 =28.45

Grab Samples

HGWA-2

Grab

Product Name: Low-Flow System

Date: 2019-04-01 17:24:36

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWA-3	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.30 ft	Total Volume Pumped	8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:41:28	300.10	16.60	7.16	457.46	0.71	5.32	0.18	-89.12
Last 5	16:46:28	600.02	16.59	7.15	456.97	0.48	5.32	0.16	-90.85
Last 5	16:51:29	900.64	16.61	7.16	456.67	0.39	5.32	0.16	-92.91
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.01	-0.01	-0.49			-0.03	-1.73
Variance 2			0.02	0.01	-0.30			0.01	-2.06

Notes

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 = 45.25 ft.

Grab Samples

HGWA-3

Grab

Product Name: Low-Flow System

Date: 2019-04-02 17:16:00

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-7	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.13 ft	Total Volume Pumped	71.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:32:07	300.07	18.70	7.28	716.67	4.17	4.35	0.19	-18.20
Last 5	16:37:07	600.02	18.48	7.27	718.98	3.28	4.35	0.18	-20.55
Last 5	16:42:07	900.02	18.51	7.27	720.85	3.09	4.35	0.18	-21.92
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.22	-0.01	2.31			-0.01	-2.35
Variance 2			0.03	-0.00	1.86			-0.00	-1.37

Notes

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 = 33.5 ft.

Grab Samples

HGWC-7

Grab

Product Name: Low-Flow System

Date: 2019-04-03 11:27:57

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-8	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.38 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:31:20	1500.02	17.63	6.87	943.74	19.50	3.42	0.12	-0.41
Last 5	10:36:20	1800.02	17.72	6.87	944.50	12.40	3.42	0.11	-1.66
Last 5	10:41:20	2100.02	17.77	6.87	943.78	9.45	3.42	0.12	-2.47
Last 5	10:46:20	2400.02	17.83	6.87	943.97	7.03	3.42	0.13	-3.52
Last 5	10:51:21	2700.44	17.84	6.85	942.35	4.80	3.42	0.11	-1.82
Variance 0			0.04	-0.00	-0.71			0.00	-0.81
Variance 1			0.07	-0.00	0.19			0.01	-1.05
Variance 2			0.01	-0.02	-1.62			-0.01	1.70

Notes

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 = 24.9 ft.

Grab Samples

HGWC-8

Grab

Product Name: Low-Flow System

Date: 2019-04-03 09:38:33

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	41.98 ft

Well Information:		Pumping Information:	
Well ID	HGWC-9	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.55 ft	Total Volume Pumped	20.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:16:25	1500.01	17.98	6.88	1133.28	10.44	12.63	0.11	80.10
Last 5	09:21:25	1800.01	18.03	6.88	1133.92	7.11	12.64	0.11	79.78
Last 5	09:26:25	2100.01	18.07	6.88	1133.39	6.65	12.63	0.06	79.81
Last 5	09:31:25	2400.00	18.11	6.88	1131.77	5.92	12.64	0.09	79.47
Last 5	09:36:25	2700.00	18.15	6.88	1129.16	4.91	12.65	0.07	79.47
Variance 0			0.04	-0.00	-0.53			-0.05	0.03
Variance 1			0.03	-0.00	-1.63			0.03	-0.34
Variance 2			0.04	0.00	-2.61			-0.03	-0.01

Notes

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 = 47.64

Grab Samples

HGWC-9

Grab

Product Name: Low-Flow System

Date: 2019-04-03 13:48:29

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.5 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:59:09	300.08	18.19	6.57	867.75	1.10	12.53	0.22	-0.10
Last 5	13:04:09	600.02	18.52	6.56	870.88	0.11	12.54	0.18	-0.34
Last 5	13:09:09	900.02	18.50	6.56	873.62	0.47	12.54	0.14	-0.96
Last 5	13:14:09	1200.02	18.52	6.55	875.54	0.49	12.54	0.13	-1.69
Last 5									
Variance 0			0.33	-0.01	3.12			-0.04	-0.23
Variance 1			-0.02	-0.01	2.75			-0.03	-0.62
Variance 2			0.02	-0.01	1.92			-0.02	-0.73

Notes

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 = 22.55 ft.

Grab Samples

HGWC-10

Grab

Product Name: Low-Flow System

Date: 2019-04-03 12:41:24

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-11	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.06 ft	Total Volume Pumped	9.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:56:13	1199.99	17.53	5.45	799.73	8.20	14.19	3.76	107.43
Last 5	12:01:13	1499.98	17.48	5.51	788.45	5.57	14.20	3.72	106.40
Last 5	12:06:17	1803.97	17.51	5.60	756.53	4.46	14.20	3.65	104.86
Last 5	12:11:17	2103.96	17.54	5.66	741.70	3.65	14.20	3.56	104.29
Last 5	12:16:17	2403.95	17.54	5.69	727.31	3.23	14.20	3.84	103.46
Variance 0			0.03	0.09	-31.91			-0.07	-1.53
Variance 1			0.02	0.06	-14.84			-0.10	-0.58
Variance 2			0.01	0.03	-14.38			0.28	-0.82

Notes

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 =26.00

Grab Samples

HGWC-11

Grab

Product Name: Low-Flow System

Date: 2019-04-03 14:24:13

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-12	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.32 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:43:15	300.06	18.75	6.93	793.87	4.94	14.35	0.20	111.17
Last 5	13:48:15	600.01	18.82	6.94	795.52	3.67	14.35	0.16	109.97
Last 5	13:53:15	900.00	18.87	6.96	796.06	3.13	14.35	0.13	108.88
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.07	0.01	1.65			-0.04	-1.21
Variance 2			0.05	0.01	0.54			-0.02	-1.08

Notes

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 =35.02

Grab Samples

HGWC-12

Grab

Product Name: Low-Flow System

Date: 2019-04-05 16:30:57

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-13	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.43 ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:29:45	900.02	19.97	7.27	575.15	2.95	18.52	1.18	-61.92
Last 5	15:34:45	1200.02	20.22	7.25	578.57	2.04	18.52	0.97	-62.77
Last 5	15:39:45	1500.02	20.26	7.25	578.40	2.16	18.52	0.69	-64.59
Last 5	15:44:45	1800.02	20.65	7.24	575.91	1.48	18.52	0.50	-65.62
Last 5	15:49:45	2100.02	20.13	7.24	578.02	1.29	18.52	0.43	-66.23
Variance 0			0.04	-0.01	-0.17			-0.28	-1.82
Variance 1			0.39	-0.01	-2.49			-0.18	-1.02
Variance 2			-0.52	0.00	2.11			-0.07	-0.61

Notes

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 = 45.44 ft.

Grab Samples

HGWC-13

Grab

Product Name: Low-Flow System

Date: 2019-04-03 12:52:58

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	25 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-5	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2015856 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.67 ft	Total Volume Pumped	8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:36:16	300.04	19.11	6.00	566.45	1.22	15.88	2.16	53.37
Last 5	12:41:16	600.02	19.04	5.97	609.53	1.28	15.59	2.39	54.26
Last 5	12:46:16	900.02	19.20	5.95	609.35	0.57	15.89	2.49	55.53
Last 5	12:51:16	1200.02	19.09	5.96	611.09	0.33	15.89	2.39	55.95
Last 5									
Variance 0			-0.08	-0.03	43.08			0.23	0.89
Variance 1			0.16	-0.02	-0.19			0.10	1.28
Variance 2			-0.11	0.01	1.75			-0.10	0.42

Notes

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 = 31.50

Grab Samples

MW-5

Grab

Product Name: Low-Flow System

Date: 2019-04-03 15:21:45

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-6	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.09 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:31:34	300.07	20.26	6.79	1034.40	3.55	16.15	0.18	-20.45
Last 5	14:36:34	600.02	20.35	6.78	1029.77	3.82	16.15	0.15	-21.82
Last 5	14:41:34	900.51	20.31	6.77	1027.02	3.69	16.15	0.14	-21.42
Last 5	14:46:34	1200.51	20.26	6.77	1028.69	3.88	16.15	0.14	-22.81
Last 5									
Variance 0			0.09	-0.01	-4.63			-0.02	-1.37
Variance 1			-0.04	-0.00	-2.75			-0.01	0.40
Variance 2			-0.04	-0.00	1.67			-0.00	-1.39

Notes

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 = 32.81 ft.

Grab Samples

MW-6

Grab

Product Name: Low-Flow System

Date: 2019-04-03 10:19:15

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-7	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.68 ft	Total Volume Pumped	13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:51:49	1499.98	16.75	6.11	301.77	2.38	12.75	2.42	93.86
Last 5	09:56:49	1799.97	16.91	6.14	318.17	2.00	12.76	2.45	94.02
Last 5	10:01:54	2104.96	17.09	6.17	322.23	1.27	12.76	2.39	93.82
Last 5	10:07:11	2421.95	17.14	6.19	329.88	0.89	12.76	2.18	94.59
Last 5	10:12:14	2724.94	17.22	6.19	327.20	1.14	12.76	2.18	95.49
Variance 0			0.18	0.03	4.06			-0.06	-0.20
Variance 1			0.06	0.02	7.66			-0.21	0.77
Variance 2			0.07	-0.01	-2.68			-0.00	0.91

Notes

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 =26.70

Grab Samples

MW-7

Grab

Product Name: Low-Flow System

Date: 2019-04-03 14:24:35

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	21 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1837319 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	10.80 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:12:41	300.04	19.26	6.10	550.19	0.89	10.88	0.52	72.49
Last 5	14:17:40	600.02	19.18	6.11	551.56	1.16	10.89	0.56	73.38
Last 5	14:22:40	900.02	19.11	6.14	537.94	1.37	10.89	0.66	76.07
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.07	0.01	1.37			0.04	0.89
Variance 2			-0.08	0.03	-13.62			0.10	2.69

Notes

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 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 29.45

Grab Samples

MW-19

Grab

Product Name: Low-Flow System

Date: 2019-04-02 15:32:47

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	26 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.206049 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.23 ft	Total Volume Pumped	11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:11:27	1200.02	18.23	6.64	685.30	1.41	12.54	0.43	39.75
Last 5	15:16:27	1500.02	18.34	6.69	659.24	1.26	12.55	0.37	24.67
Last 5	15:21:27	1800.02	18.20	6.70	702.37	0.90	12.58	0.34	15.21
Last 5	15:26:27	2100.01	18.54	6.70	718.40	1.11	12.59	0.37	9.31
Last 5	15:31:27	2400.01	19.01	6.70	697.59	0.85	12.59	0.32	3.66
Variance 0			-0.13	0.02	43.14			-0.03	-9.46
Variance 1			0.34	-0.00	16.03			0.03	-5.89
Variance 2			0.47	0.00	-20.81			-0.05	-5.65

Notes

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 = 34.35

Grab Samples

MW-20

Grab

Product Name: Low-Flow System

Date: 2019-04-05 17:09:57

Project Information:		Pump Information:	
Operator Name	Aaron Reeder	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	68.0 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	67.0 ft

Well Information:		Pumping Information:	
Well ID	MW-24D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3935128 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	24.38 ft	Total Volume Pumped	19 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:40:26	4499.95	20.03	7.55	544.82	17.70	24.41	2.48	52.40
Last 5	16:45:26	4799.94	19.81	7.56	544.71	18.44	24.40	2.66	50.83
Last 5	16:50:26	5099.93	19.90	7.55	546.65	14.38	24.41	2.43	49.75
Last 5	16:55:26	5399.93	20.17	7.56	540.95	15.25	24.41	2.53	48.26
Last 5	17:00:26	5699.92	20.00	7.56	545.17	13.72	24.41	2.50	47.12
Variance 0			0.09	-0.01	1.95			-0.24	-1.08
Variance 1			0.26	0.01	-5.71			0.10	-1.49
Variance 2			-0.17	0.00	4.23			-0.02	-1.14

Notes

or 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 = 72.95. Stopped pumping due to Turbidity purged 1.5 HRS.

Grab Samples
MW-24D
Grab

Product Name: Low-Flow System

Date: 2019-04-08 11:13:25

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-24D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	24.16 ft	Total Volume Pumped	4.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:51:31	1500.07	19.09	7.49	552.93	7.39	24.18	0.57	5.29
Last 5	09:56:31	1800.03	19.15	7.49	553.65	6.21	24.18	0.61	3.98
Last 5	10:01:32	2100.62	19.20	7.49	553.86	5.34	24.18	0.54	2.95
Last 5	10:06:32	2400.62	19.41	7.47	554.01	4.34	24.18	0.56	2.62
Last 5	10:11:32	2700.62	19.47	7.47	553.72	3.42	24.18	0.56	2.98
Variance 0			0.05	0.00	0.21			-0.07	-1.04
Variance 1			0.22	-0.03	0.15			0.02	-0.33
Variance 2			0.06	0.01	-0.29			-0.00	0.35

Notes

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 = 72.83 ft.

Grab Samples

MW-24D

Grab

Product Name: Low-Flow System

Date: 2019-04-03 16:14:59

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-25D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.25 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:26:08	300.06	18.85	7.49	670.61	6.31	16.90	0.16	61.90
Last 5	15:31:08	600.01	18.87	7.53	646.72	5.39	17.77	0.16	56.77
Last 5	15:36:08	900.00	18.90	7.55	635.97	4.91	18.49	0.16	53.27
Last 5	15:41:09	1200.99	19.04	7.56	631.80	4.08	18.80	0.18	49.22
Last 5									
Variance 0			0.01	0.04	-23.89			0.01	-5.14
Variance 1			0.03	0.02	-10.75			-0.00	-3.50
Variance 2			0.15	0.02	-4.17			0.02	-4.05

Notes

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 = 63.15

Grab Samples

MW-25D

Grab

Product Name: Low-Flow System

Date: 2019-04-03 11:12:40

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	70 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-26D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.4024396 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.72 ft	Total Volume Pumped	11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:48:09	900.02	18.14	8.00	744.08	2.89	12.94	0.51	51.50
Last 5	10:53:09	1200.01	18.15	7.64	758.79	2.77	12.94	0.34	50.12
Last 5	10:58:09	1500.01	18.18	7.44	810.85	2.79	12.94	0.87	48.98
Last 5	11:03:09	1800.01	18.30	7.30	831.74	1.73	12.93	0.70	47.96
Last 5	11:08:09	2100.01	18.30	7.25	848.08	1.70	12.94	0.46	46.16
Variance 0			0.03	-0.20	52.07			0.54	-1.14
Variance 1			0.12	-0.14	20.89			-0.17	-1.02
Variance 2			-0.00	-0.06	16.33			-0.25	-1.80

Notes

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 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 77.80

Grab Samples

MW-26D

Grab

Product Name: Low-Flow System

Date: 2019-04-03 09:36:52

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-27D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.26 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:12:19	900.02	16.19	7.59	394.43	0.73	7.11	0.48	37.65
Last 5	09:17:19	1200.02	15.57	7.62	393.54	0.50	7.69	0.54	21.78
Last 5	09:22:19	1500.47	15.52	7.63	392.58	0.48	8.20	0.59	13.55
Last 5	09:27:19	1800.47	15.61	7.65	392.68	0.41	8.77	0.66	9.27
Last 5	09:32:19	2100.47	15.89	7.65	393.41	0.82	9.33	0.82	7.60
Variance 0			-0.05	0.01	-0.96			0.05	-8.22
Variance 1			0.09	0.01	0.10			0.07	-4.28
Variance 2			0.27	0.00	0.74			0.16	-1.67

Notes

Water level dropping too fast. Proceed to purge well dry and sample will be collected after 24h.

Product Name: Low-Flow System

Date: 2019-04-04 11:04:16

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-27D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.32 ft	Total Volume Pumped	1.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:24:26	300.14	17.54	7.63	419.94	0.22	6.48	1.53	80.73
Last 5									
Last 5									
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.00	0.00			0.00	0.00
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

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 = 63.11 ft.

Grab Samples

MW-27D

Grab

Product Name: Low-Flow System

Date: 2019-04-02 15:40:23

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-28D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.07 ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:24:28	300.05	18.78	7.36	562.93	2.39	4.38	0.15	40.84
Last 5	15:29:28	600.01	19.18	7.39	560.78	2.40	4.42	0.13	38.57
Last 5	15:34:28	900.00	18.47	7.40	569.16	2.36	4.43	0.13	31.27
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.40	0.03	-2.15			-0.02	-2.27
Variance 2			-0.71	0.01	8.38			0.01	-7.29

Notes

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 =58.20

Grab Samples

MW-28D

Grab

Product Name: Low-Flow System

Date: 2019-04-02 13:48:32

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	20 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-29	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1792685 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.26 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:36:30	300.04	17.28	6.87	898.83	2.81	5.37	0.51	53.90
Last 5	13:41:30	600.02	16.85	6.89	897.60	3.35	5.38	0.54	52.03
Last 5	13:46:30	900.02	16.79	6.91	899.57	3.27	5.38	0.19	51.14
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.42	0.03	-1.23			0.03	-1.87
Variance 2			-0.06	0.01	1.97			-0.35	-0.89

Notes

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 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 28.21

Grab Samples

MW-29

Grab

Product Name: Low-Flow System

Date: 2019-07-08 20:27:07

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-30D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	80.32 ft	Total Volume Pumped	19 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	19:19:04	4212.92	29.74	8.06	3139.53	7.22	80.40	1.20	169.78
Last 5	19:24:04	4512.91	29.20	8.07	3137.84	7.13	80.40	1.15	163.95
Last 5	19:29:20	4828.90	28.69	8.07	3136.99	7.09	80.41	1.13	156.69
Last 5	19:34:22	5130.90	28.12	8.07	3155.78	7.03	80.41	1.08	151.04
Last 5	19:39:22	5430.88	27.46	8.07	3126.10	7.14	80.42	1.03	145.99
Variance 0			-0.51	0.00	-0.85			-0.02	-7.26
Variance 1			-0.57	0.00	18.80			-0.05	-5.65
Variance 2			-0.67	-0.00	-29.68			-0.05	-5.05

Notes

Parameters to be analyzed: Molybdenum. Total depth = 107.2 ft

Grab Samples

MW-30D

Product Name: Low-Flow System

Date: 2019-09-23 15:33:40

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27.50 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	27.50 ft

Well Information:		Pumping Information:	
Well ID	HGWA-1	Final Pumping Rate	250 mL/min
Well diameter	2 in	Total System Volume	0.6077442 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	22.18 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:12:05	299.91	19.51	6.87	666.62	0.81	22.82	0.38	73.97
Last 5	15:17:05	599.88	19.41	6.97	683.54	4.73	22.90	0.39	68.82
Last 5	15:22:05	899.88	18.93	7.00	683.93	5.14	22.96	0.36	66.85
Last 5	15:27:05	1199.88	18.88	7.01	681.21	4.87	22.94	0.33	65.60
Last 5	15:32:05	1499.88	18.88	7.02	677.72	4.59	22.94	0.28	64.44
Variance 0			-0.48	0.04	0.39			-0.03	-1.97
Variance 1			-0.05	0.01	-2.72			-0.03	-1.26
Variance 2			-0.00	0.01	-3.49			-0.05	-1.16

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for Radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EP A 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 = 32.28'

Grab Samples

HGWA-1

Grab

Product Name: Low-Flow System

Date: 2019-09-30 09:52:13

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27.50 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	27.50 ft

Well Information:		Pumping Information:	
Well ID	HGWA-1	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6077442 L
Well Total Depth	32.28 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	22.35 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:14:08	1200.03	17.86	7.00	698.30	3.64	22.94	0.71	65.88
Last 5	09:19:08	1500.02	17.93	7.00	700.71	2.76	22.94	0.53	65.34
Last 5	09:24:08	1800.03	17.99	7.00	701.37	1.65	22.94	0.40	64.81
Last 5	09:29:08	2100.03	18.22	7.00	700.47	1.10	22.94	0.33	64.07
Last 5	09:34:08	2400.03	18.08	7.00	702.34	1.02	22.94	0.29	63.31
Variance 0			0.06	-0.00	0.66			-0.13	-0.53
Variance 1			0.23	0.00	-0.90			-0.07	-0.74
Variance 2			-0.14	0.00	1.87			-0.04	-0.76

Notes

Radium 2-1L plastic w/HNO3

Grab Samples

HGWA-1

Grab

Geosyntec consultants

GROUNDWATER SAMPLING LOG SHEET

Client:	SCS	Project No.:	GW6581	Sampling Date:	9/23/19
Site:	AP1 / AP2	Location:	Plant Hammond	Sampler's Name:	B. Weinmann
Well ID:	HGWA-2	Pump Type/Model:	Bladder / QED MP50	Sample Collection Time:	1615
Total Depth (ft):	28.43	Tubing Material:	Polyethylene	Sample Purge Rate (mL/min):	175
Depth to Water (ft):	12.46	Pump Intake Depth (ft):	~~1535~~ 22.95	Sample ID:	HGWA-2
Well Diameter (in):	2"	Start/Stop Purge Time:	~~3:35~~ / 1655	Laboratory Analyses:	App. III + IV
Well Volume (gal) = $0.041d^2h$:	~~[illegible]~~ 2.62	Purge Rate (mL/min):	175 ml		
Well Volume (L) = gal * 3.785:	9.91	Total Purge Volume (L):	8.25		

d = well diameter (inches); h = length of water column (feet)

Well Type: Flush / **(Stick Up)**

Well Lock: **(Yes)** / No

Well Cap Condition: **(Good)** / Replace

Well Tag Present: **(Yes)** / No

Purge Method: **(Low-Flow)** / Well Volume / Other: —

Sampling Method: **(Pump Discharge)** / Other: —

QA/QC Collected? No

QA/QC I.D. —

All sample containers requiring chemical preservation properly preserved prior to demob from well? **(Yes)** / No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
~~3:50~~ 1542	5.50	193.70	30.60	0.33	22.41	35.1	12.52	75	2	
1547	~~5.58~~ 5.49	~~19.70~~ 198.00	27.60	0.24	23.02	24.1	12.73	454	~~2.3~~ 4	
1552	5.41	180.00	26.90	0.18	20.43	15.1	12.55	25	5	
1557	5.40	178.00	25.10	0.18	21.64	11.5	12.57	175	5.5	
1602	5.36	174.60	23.80	0.15	21.41	8.11	12.55	175	6.5	
1607	5.35	173.20	22.80	0.16	21.60	5.43	12.54	175	~~4.25~~ 7.5	
1612	5.33	170.70	22.70	0.16	21.65	4.44	12.54	175	8.25	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L	

BEW 9/23/19

Product Name: Low-Flow System

Date: 2019-09-30 11:01:40

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	22.95 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	22.95 ft

Well Information:		Pumping Information:	
Well ID	HGWA-2	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.5874355 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.65 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:39:33	1200.02	21.89	5.51	213.01	16.90	12.68	0.27	77.83
Last 5	10:44:33	1500.02	21.07	5.48	208.16	13.10	12.68	0.39	79.57
Last 5	10:49:33	1800.03	20.91	5.42	202.42	9.87	12.68	0.28	81.65
Last 5	10:54:33	2100.03	20.94	5.38	198.16	4.65	12.68	0.23	83.62
Last 5	10:59:33	2400.03	21.03	5.35	195.88	4.77	12.68	0.21	85.59
Variance 0			-0.16	-0.05	-5.74			-0.11	2.08
Variance 1			0.03	-0.05	-4.26			-0.06	1.97
Variance 2			0.09	-0.03	-2.29			-0.02	1.98

Notes

Radium 2-1L plastic w/HNO3

Grab Samples

HGWA-2

Grab

Product Name: Low-Flow System

Date: 2019-09-23 17:21:39

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWA-3	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.31 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:47:39	599.94	21.11	7.28	420.89	11.30	12.32	0.62	30.66
Last 5	15:52:39	899.93	21.26	7.29	419.77	6.50	12.32	0.45	26.64
Last 5	15:57:39	1199.93	21.23	7.29	419.87	6.47	12.32	0.38	23.79
Last 5	16:02:39	1499.93	21.24	7.30	419.78	5.84	12.32	0.34	21.25
Last 5	16:07:39	1799.93	21.50	7.30	420.11	3.53	12.32	0.31	18.32
Variance 0			-0.02	-0.00	0.10			-0.07	-2.85
Variance 1			0.00	0.00	-0.09			-0.04	-2.54
Variance 2			0.26	0.00	0.33			-0.03	-2.93

Notes

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 = 45.36 ft.

Grab Samples

HGWA-3

Grab

Geosyntec consultants

GROUNDWATER SAMPLING LOG SHEET

Client: Geosyntec
Site: Plant Hammond
Well ID: HGWA-3
Total Depth (ft): 44.87
Depth to Water (ft): 12.46
Well Diameter (in): 2
Well Volume (gal) = $0.041d^2h$: 5.32
Well Volume (L) = gal * 3.785: 20.12
d = well diameter (inches); h = length of water column (feet)
Well Type: Flush / **Stick Up** (circled)
Well Lock: **Yes** (circled) / No
Well Cap Condition: **Good** (circled) / Replace
Well Tag Present: **Yes** (circled) / No

Project No.: GW6581
Location: AP-1/2
Pump Type/Model: bladder
Tubing Material: poly
Pump Intake Depth (ft): 39.87
Start/Stop Purge Time: 1030/ 1135
Purge Rate (mL/min): 220
Total Purge Volume (L): 6
Purge Method: **Low-Flow** (circled) / Well Volume / Other: —
Sampling Method: **Pump Discharge** (circled) / Other: —

Sampling Date: 9/30/19
Sampler's Name: Chad Russo
Sample Collection Time: 1059
Sample Purge Rate (mL/min): T020 [crossed out]
Sample ID: HGWA-3
Laboratory Analyses: Rad, vm
QA/QC Collected? N/A
QA/QC I.D. N/A

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1034	7.38	435.4	29.10	0.55	21.05	11.8	12.48	220	2.25	
1039	7.37	432.2	19.70	0.33	20.63	6.27	12.47	220	3	
1044	7.37	433.8	13.1	0.3	20.3	4.58	12.47	220	4	
1049	7.36	432	9.5	0.35	20.79	4.36	12.47	220	5	
1054	7.37	431.7	5.4	0.36	20.84	3.42	12.47	220	6	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L	

10/2/19 CR

Product Name: Low-Flow System

Date: 2019-09-25 11:34:06

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-7	Final Pumping Rate	225 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.88 ft	Total Volume Pumped	21.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:22:31	1807.02	20.93	7.11	723.39	13.30	6.93	0.11	31.85
Last 5	10:27:31	2107.02	21.05	7.11	723.84	9.90	6.95	0.11	31.48
Last 5	10:32:31	2407.02	21.15	7.11	723.17	7.74	6.92	0.11	31.16
Last 5	10:37:31	2707.02	21.24	7.11	724.14	6.66	6.91	0.10	30.60
Last 5	10:42:33	3009.02	21.43	7.11	723.47	4.90	6.93	0.10	30.17
Variance 0			0.10	0.00	-0.66			-0.00	-0.32
Variance 1			0.09	0.00	0.97			-0.00	-0.56
Variance 2			0.19	-0.00	-0.67			-0.00	-0.43

Notes

Four bottles: Two 1-L plastic bottles with NHO3 for Radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 3 00.0); and one 250-mL plastic bottle with HNO3 for App. III and IV Metals (EPA 6020B/7470A). Total depth = 30.49'

Grab Samples

HGWC-7

Grab

Product Name: Low-Flow System

Date: 2019-09-24 16:01:17

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-8	Final Pumping Rate	175 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.93 ft	Total Volume Pumped	10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:44:18	1500.01	21.62	6.96	739.34	10.62	6.94	0.09	64.65
Last 5	13:49:18	1800.01	22.09	6.96	737.32	8.80	6.94	0.08	66.71
Last 5	13:54:18	2100.01	21.47	6.95	741.05	5.78	6.94	0.09	69.35
Last 5	13:59:18	2400.00	21.37	6.96	742.72	4.46	6.94	0.10	70.74
Last 5	14:04:18	2700.00	22.22	6.95	742.77	2.98	6.94	0.08	71.32
Variance 0			-0.62	-0.00	3.73			0.01	2.64
Variance 1			-0.11	0.00	1.67			0.01	1.40
Variance 2			0.85	-0.01	0.05			-0.02	0.58

Notes

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 = 25.05'

Grab Samples

HGWC-8

Grab

FD-01

Grab

Product Name: Low-Flow System

Date: 2019-09-27 13:36:43

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-9	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.40 ft	Total Volume Pumped	14.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:34:22	3000.00	20.75	7.01	1148.40	9.54	15.43	0.07	-8.32
Last 5	12:39:22	3299.99	20.76	7.01	1146.30	7.81	15.43	0.06	-5.90
Last 5	12:44:22	3599.99	20.78	7.01	1144.85	6.92	15.43	0.07	-4.10
Last 5	12:49:22	3899.99	20.66	7.01	1143.65	5.56	15.43	0.08	-2.17
Last 5	12:54:22	4199.99	20.61	7.01	1144.51	4.65	15.43	0.07	-0.54
Variance 0			0.02	-0.00	-1.45			0.00	1.80
Variance 1			-0.13	0.00	-1.20			0.01	1.93
Variance 2			-0.05	0.00	0.86			-0.01	1.63

Notes

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 = 47.7 ft.

Grab Samples

HGWC-9

Grab

Product Name: Low-Flow System

Date: 2019-09-27 10:55:21

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	HGWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.41 ft	Total Volume Pumped	4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:17:42	300.07	20.79	6.61	960.08	2.82	15.45	0.42	65.01
Last 5	09:22:42	600.02	20.67	6.63	957.37	0.53	15.45	0.32	55.33
Last 5	09:27:42	900.02	20.70	6.64	948.71	--	--	0.27	50.57
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.12	0.02	-2.71			-0.11	-9.68
Variance 2			0.04	0.01	-8.66			-0.04	-4.76

Notes

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 = 22.70 ft.

Grab Samples

HGWC-10

Grab

Product Name: Low-Flow System

Date: 2019-09-27 12:49:22

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	22.78 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	20.78 ft

Well Information:		Pumping Information:	
Well ID	HGWC-11	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1916768 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.62 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:51:51	300.02	23.20	5.70	680.19	15.00	16.68	3.27	64.65
Last 5	11:56:51	600.02	23.53	5.65	676.23	29.60	16.68	3.19	66.16
Last 5	12:01:51	900.02	23.58	5.70	689.80	5.76	16.68	2.75	69.81
Last 5	12:06:51	1200.02	23.69	5.74	699.84	2.53	16.68	2.53	72.63
Last 5	12:11:51	1500.02	23.75	5.75	702.60	3.90	16.68	2.62	74.63
Variance 0			0.06	0.05	13.57			-0.44	3.64
Variance 1			0.11	0.04	10.04			-0.23	2.82
Variance 2			0.05	0.01	2.76			0.09	2.00

Notes

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 = 25.97'

Grab Samples

HGWC-11

Grab

Product Name: Low-Flow System

Date: 2019-09-27 11:22:22

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	30.68 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	30.68 ft

Well Information:		Pumping Information:	
Well ID	HGWC-12	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6219378 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.71 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:28:47	600.02	21.07	7.10	906.62	6.51	16.71	0.45	83.81
Last 5	10:33:48	900.05	21.00	7.09	908.82	6.57	16.71	0.32	85.49
Last 5	10:38:48	1200.03	21.11	7.08	910.80	4.91	16.71	0.25	86.80
Last 5	10:43:47	1500.02	21.11	7.07	911.28	4.60	16.71	0.22	88.17
Last 5	10:48:47	1800.02	20.80	7.07	906.42	3.58	16.71	0.21	89.77
Variance 0			0.10	-0.01	1.99			-0.07	1.32
Variance 1			-0.00	-0.00	0.48			-0.03	1.36
Variance 2			-0.30	0.00	-4.87			-0.01	1.60

Notes

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 = 34.96'

Grab Samples

HGWC-12

Grab

Product Name: Low-Flow System

Date: 2019-09-26 13:53:49

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	40.70 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	40.70 ft

Well Information:		Pumping Information:	
Well ID	HGWC-13	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6666613 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	23.20 ft	Total Volume Pumped	13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:01:27	2700.03	22.19	6.94	1267.66	4.97	23.26	0.13	82.07
Last 5	13:06:27	3000.03	22.56	6.94	1264.77	5.07	23.26	0.12	80.99
Last 5	13:11:27	3300.03	22.36	6.94	1269.20	4.92	23.26	0.12	79.97
Last 5	13:16:27	3600.03	22.78	6.94	1262.17	4.76	23.26	0.12	79.08
Last 5	13:21:27	3900.03	22.71	6.94	1261.67	4.94	23.26	0.13	78.33
Variance 0			-0.21	0.00	4.43			0.00	-1.02
Variance 1			0.42	0.00	-7.04			-0.00	-0.89
Variance 2			-0.06	0.00	-0.50			0.01	-0.75

Notes

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 = 45.38'

Grab Samples

HGWC-13

Grab

Product Name: Low-Flow System

Date: 2019-09-25 17:18:24

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-5	Final Pumping Rate	230 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.28 ft	Total Volume Pumped	8.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:55:15	300.02	20.43	6.35	706.69	3.04	18.46	0.66	37.84
Last 5	16:00:15	600.02	20.32	6.38	715.90	2.20	18.49	0.61	38.66
Last 5	16:05:15	900.01	20.28	6.37	707.83	1.72	18.49	0.67	39.40
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.11	0.03	9.21			-0.05	0.81
Variance 2			-0.04	-0.01	-8.07			0.06	0.74

Notes

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 = 31.05 ft.

Grab Samples

MW-5

Grab

Product Name: Low-Flow System

Date: 2019-09-26 13:03:59

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-6	Final Pumping Rate	215 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.50 ft	Total Volume Pumped	8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:42:17	1800.01	23.19	6.76	1087.67	18.80	18.52	0.27	27.51
Last 5	11:47:17	2100.00	22.80	6.76	1083.44	12.00	18.52	0.21	27.51
Last 5	11:52:17	2400.00	22.18	6.77	1083.36	8.26	18.52	0.16	27.72
Last 5	11:57:17	2700.00	22.26	6.77	1084.15	5.55	18.52	0.16	27.67
Last 5	12:02:17	3000.00	22.27	6.76	1083.30	4.83	18.52	0.17	27.80
Variance 0			-0.62	0.01	-0.08			-0.04	0.21
Variance 1			0.09	-0.00	0.79			0.00	-0.05
Variance 2			0.00	-0.01	-0.85			0.01	0.13

Notes

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 = 32.95 ft.

Grab Samples

MW-6

Grab

Product Name: Low-Flow System

Date: 2019-09-26 15:48:41

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-7	Final Pumping Rate	190 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.92 ft	Total Volume Pumped	8.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:21:44	1200.02	20.62	6.46	553.62	5.53	14.92	0.88	50.07
Last 5	14:26:44	1500.01	20.97	6.49	569.04	3.81	14.92	0.71	51.64
Last 5	14:31:46	1802.01	21.10	6.50	570.90	2.66	14.92	0.62	53.04
Last 5	14:36:48	2104.01	21.32	6.50	571.83	1.89	14.92	0.59	53.80
Last 5	14:41:48	2404.00	21.41	6.50	564.68	1.33	14.92	0.58	54.38
Variance 0			0.14	0.01	1.85			-0.08	1.40
Variance 1			0.22	-0.01	0.94			-0.04	0.76
Variance 2			0.09	0.00	-7.16			-0.01	0.58

Notes

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 = 26.62 ft.

Grab Samples

MW-7

Grab

Product Name: Low-Flow System

Date: 2019-09-27 13:35:45

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	ft	Total Volume Pumped	14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:04:49	600.02	22.23	6.33	679.39	10.75	14.73	0.22	44.46
Last 5	12:09:49	900.02	22.22	6.33	677.95	8.82	14.77	0.20	42.58
Last 5	12:14:49	1200.02	22.26	6.33	677.85	7.50	14.75	0.19	41.20
Last 5	12:19:49	1500.02	22.24	6.33	677.17	5.58	14.73	0.18	40.31
Last 5	12:24:49	1800.02	22.26	6.34	677.87	4.63	14.69	0.19	39.55
Variance 0			0.04	0.00	-0.10			-0.01	-1.38
Variance 1			-0.02	0.00	-0.68			-0.01	-0.90
Variance 2			0.03	0.00	0.70			0.01	-0.75

Notes

Four bottles: Two 1-L plastic bottles with NHO3 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 = 29.46'

Grab Samples

MW-19

Grab

Product Name: Low-Flow System

Date: 2019-09-25 12:24:00

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-20	Final Pumping Rate	160 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.87 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:09:15	2100.00	20.06	6.69	717.67	8.93	16.08	0.23	-9.21
Last 5	10:14:15	2400.00	20.17	6.72	717.88	7.56	16.09	0.23	-14.17
Last 5	10:19:15	2700.00	19.94	6.73	721.30	6.50	16.09	0.23	-17.99
Last 5	10:24:15	3000.00	19.94	6.74	720.86	5.80	16.09	0.23	-21.21
Last 5	10:29:15	3299.99	19.85	6.75	721.32	4.71	16.14	0.22	-24.31
Variance 0			-0.22	0.02	3.42			0.00	-3.81
Variance 1			0.00	0.01	-0.45			-0.00	-3.22
Variance 2			-0.10	0.01	0.46			-0.01	-3.11

Notes

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 = 34.38 ft.

Grab Samples

MW-20

Grab

Product Name: Low-Flow System

Date: 2019-09-26 16:48:41

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	65.0 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	65.0 ft

Well Information:		Pumping Information:	
Well ID	MW-24D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.7751225 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	28.31 ft	Total Volume Pumped	14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:50:04	5100.03	23.91	7.49	526.76	7.38	28.33	0.34	43.78
Last 5	15:55:04	5400.03	24.15	7.48	526.46	5.66	28.33	0.34	43.70
Last 5	16:00:04	5700.03	24.47	7.49	522.74	4.47	28.33	0.34	43.45
Last 5	16:05:04	6000.03	23.88	7.49	526.03	4.89	28.33	0.35	43.34
Last 5	16:10:04	6300.03	22.99	7.50	525.70	4.73	28.33	0.35	43.35
Variance 0			0.32	0.00	-3.72			-0.00	-0.24
Variance 1			-0.58	0.00	3.29			0.01	-0.11
Variance 2			-0.90	0.02	-0.33			0.00	0.01

Notes

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 = 73.38'

Grab Samples

MW-24D

Grab

Product Name: Low-Flow System

Date: 2019-09-27 10:01:25

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	58.03 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	58.03 ft

Well Information:		Pumping Information:	
Well ID	MW-25D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.7440125 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.71 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:52:49	900.02	20.40	7.49	699.89	2.20	19.15	0.67	64.72
Last 5	08:57:49	1200.02	20.57	7.54	694.21	2.44	19.21	0.53	62.13
Last 5	09:02:49	1500.02	20.68	7.56	690.06	2.14	19.24	0.43	60.06
Last 5	09:07:49	1800.02	20.49	7.57	687.20	1.95	19.26	0.37	57.49
Last 5	09:12:49	2100.02	20.40	7.57	680.96	1.93	19.29	0.34	55.36
Variance 0			0.11	0.02	-4.15			-0.10	-2.07
Variance 1			-0.19	0.01	-2.87			-0.05	-2.57
Variance 2			-0.09	0.00	-6.24			-0.04	-2.13

Notes

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 = 63.12'

Grab Samples

MW-25D

Grab

Product Name: Low-Flow System

Date: 2019-09-26 19:29:52

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-26D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.43 ft	Total Volume Pumped	30.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:34:35	4800.03	19.55	7.15	1059.59	7.40	15.68	0.15	-16.22
Last 5	18:39:35	5100.04	19.79	7.15	1064.01	7.08	15.71	0.15	-16.13
Last 5	18:44:35	5400.03	20.94	7.14	1070.01	6.88	15.72	0.19	-16.78
Last 5	18:49:35	5700.04	21.83	7.16	1040.02	7.04	15.53	0.19	-17.33
Last 5	18:54:35	6000.03	20.21	7.20	0.00	7.06	15.67	6.46	0.34
Variance 0			1.15	-0.01	6.00			0.03	-0.64
Variance 1			0.89	0.01	-29.99			0.01	-0.55
Variance 2			-1.62	0.04	-1040.02			6.27	17.67

Notes

Four bottles: Two 1-L plastic bottles with NHO3 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 = 22.92'

Grab Samples

MW-26D

Grab

Product Name: Low-Flow System

Date: 2019-09-25 12:51:18

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-27D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.87 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:30:34	300.05	22.86	7.54	540.82	1.53	9.01	0.23	35.13
Last 5	12:35:34	600.02	23.74	7.53	533.61	2.14	9.65	0.23	34.43
Last 5	12:40:34	900.01	23.95	7.56	520.46	0.61	10.33	0.24	31.34
Last 5	12:45:34	1200.01	22.21	7.58	449.35	--	--	0.16	30.75
Last 5									
Variance 0			0.88	-0.01	-7.21			0.01	-0.70
Variance 1			0.22	0.03	-13.15			0.00	-3.09
Variance 2			-1.75	0.02	-71.10			-0.08	-0.58

Notes

High drawdown at 100 mL/min. Purging well dry. Will sample 09/26/2019 (24h).

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-26 09:28:43

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-27D	Final Pumping Rate	190 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.9 ft	Total Volume Pumped	17.45 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:23:53	300.05	21.01	7.46	471.36	1.10	10.43	0.73	77.26
Last 5									
Last 5									
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.00	0.00			0.00	0.00
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

Sample taken 24h after dry purge on 09/25/19. 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 = 63.22 ft.

Grab Samples

MW-27D

Grab

Product Name: Low-Flow System

Date: 2019-09-25 18:02:22

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-28D	Final Pumping Rate	600 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.87 ft	Total Volume Pumped	24.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:38:38	1200.02	21.09	7.37	674.39	79.50	7.01	0.15	-46.40
Last 5	14:43:38	1500.02	22.23	7.36	682.66	78.40	6.95	0.19	-50.66
Last 5	14:48:38	1800.02	23.01	7.36	676.83	83.60	6.94	0.26	-53.61
Last 5	14:53:38	2100.02	23.30	7.37	674.30	67.70	6.93	0.32	-56.38
Last 5	14:58:38	2400.02	23.45	7.37	672.46	63.10	6.95	0.32	-58.18
Variance 0			0.79	0.01	-5.83			0.07	-2.95
Variance 1			0.29	0.00	-2.53			0.06	-2.77
Variance 2			0.15	0.00	-1.84			0.00	-1.80

Notes

* Turbidity did not drop. Started high speed purge. Will sample next day.

Product Name: Low-Flow System

Date: 2019-09-26 15:12:44

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-28D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.19 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.87 ft	Total Volume Pumped	21 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:28:45	5400.04	23.48	7.40	650.86	11.70	6.95	0.26	-61.16
Last 5	12:33:45	5700.03	23.44	7.40	650.88	13.80	6.94	0.26	-61.75
Last 5	12:38:45	6000.04	23.22	7.40	653.17	14.80	6.96	0.26	-60.64
Last 5	12:43:45	6300.04	23.11	7.40	653.60	14.50	6.89	0.26	-60.82
Last 5	12:48:45	6600.04	23.07	7.40	652.23	13.40	6.94	0.25	-61.49
Variance 0			-0.22	-0.00	2.29			0.01	1.11
Variance 1			-0.11	0.00	0.43			-0.01	-0.18
Variance 2			-0.04	-0.00	-1.37			-0.01	-0.67

Notes

Four bottles: Two 1-L plastic bottles with NHO3 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 = 58.22'.

Grab Samples

MW-28D

Grab

Product Name: Low-Flow System

Date: 2019-09-24 15:43:10

Project Information:		Pump Information:	
Operator Name	Ben Weinmann	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-29	Final Pumping Rate	175 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.95 ft	Total Volume Pumped	15.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:20:38	3300.03	21.86	6.86	898.57	10.12	9.04	0.23	18.91
Last 5	14:25:38	3600.02	21.94	6.86	898.25	8.20	9.03	0.21	18.31
Last 5	14:30:38	3900.03	21.95	6.86	896.55	7.02	9.04	0.19	18.05
Last 5	14:35:38	4200.02	21.97	6.86	894.88	5.78	9.02	0.17	18.09
Last 5	14:40:38	4500.03	22.09	6.86	899.53	4.22	9.04	0.17	17.90
Variance 0			0.01	0.00	-1.70			-0.03	-0.26
Variance 1			0.02	-0.00	-1.66			-0.02	0.04
Variance 2			0.11	-0.00	4.65			0.00	-0.19

Notes

Four bottles: Two 1-L plastic bottles with NHO3 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 = 28.26 ft

Grab Samples

MW-29

Grab

Product Name: Low-Flow System

Date: 2019-09-24 16:47:40

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	102.50 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	102.50 ft

Well Information:		Pumping Information:	
Well ID	MW-30D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.9425008 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	3.10 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:45:59	1800.03	23.79	7.85	2993.35	8.40	11.30	0.24	92.68
Last 5	15:50:59	2100.04	23.88	7.85	2967.33	6.12	12.20	0.17	87.56
Last 5	15:55:59	2400.04	23.84	7.85	2924.22	4.98	13.32	0.20	83.13
Last 5	16:00:59	2700.03	23.51	7.85	2977.78	4.67	13.41	0.18	78.67
Last 5	16:05:59	3000.04	23.68	7.85	2977.49	4.03	13.43	0.16	74.15
Variance 0			-0.04	-0.00	-43.12			0.03	-4.43
Variance 1			-0.33	0.00	53.56			-0.03	-4.45
Variance 2			0.18	-0.00	-0.29			-0.02	-4.52

Notes

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 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 107.03'

Grab Samples

MW-30D

Grab

Product Name: Low-Flow System

Date: 2019-11-25 15:07:20

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	72 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	72 ft

Well Information:		Pumping Information:	
Well ID	MW-26D	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.8063664 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.94 ft	Total Volume Pumped	35 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:45:19	9599.92	18.95	7.03	1055.49	5.63	16.04	0.24	28.99
Last 5	14:50:19	9899.92	18.93	7.03	1055.48	6.42	16.04	0.24	28.10
Last 5	14:55:19	10199.92	18.97	7.03	1056.70	5.67	16.04	0.23	27.29
Last 5	15:00:19	10499.92	18.97	7.03	1056.86	5.02	16.04	0.23	26.95
Last 5	15:05:19	10799.92	18.95	7.03	1057.30	4.73	16.04	0.23	26.05
Variance 0			0.04	-0.00	1.22			-0.01	-0.81
Variance 1			0.00	-0.00	0.17			-0.00	-0.34
Variance 2			-0.02	0.00	0.44			0.00	-0.90

Notes

One bottle: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B).

Grab Samples

MW-26D

Grab

Product Name: Low-Flow System

Date: 2019-11-26 15:11:19

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	QED MP50
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft

Well Information:		Pumping Information:	
Well ID	MW-30D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.485 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	60.3 ft	Total Volume Pumped	22 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:46:37	10800.37	19.20	8.13	2362.91	14.90	86.86	0.30	-99.82
Last 5	14:51:37	11100.37	20.24	8.13	2366.94	--	--	0.26	-100.59
Last 5	14:56:37	11400.37	21.11	8.12	2361.96	--	--	0.24	-100.44
Last 5	15:01:37	11700.37	21.57	8.12	2362.26	--	--	0.22	-99.73
Last 5	15:06:37	12000.37	22.63	8.10	30.52	--	--	6.23	-99.54
Variance 0			0.87	-0.01	-4.98			-0.03	0.16
Variance 1			0.46	-0.00	0.30			-0.02	0.70
Variance 2			1.06	-0.02	-2331.74			6.01	0.19

Notes

Two bottles: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B) and one 500-mL plastic bottle for TDS (EPA 300.0).

Grab Samples

MW-30D

Grab

MW-30D filtered

Grab

APPENDIX E

Statistical Analyses

Detection Monitoring Program Statistical Analysis Package
Plant Hammond Ash Pond 1 (AP-1)
April and September 2019 events
(AM 01 & AM 02)

Table E-1
Detection Monitoring Prediction Limit Comparison
Plant Hammond AP-1, Floyd County, Georgia

Parameter	Well ID	2019 AM 01			2019 AM 02		
		Upper PL	Lower PL	Apr 1-8, 2019	Upper PL	Lower PL	Sep 23-30, 2019
Boron (mg/L)	HGWC-7	0.061	-	0.99	0.060	-	1.1
Boron (mg/L)	HGWC-8	0.061	-	2.8	0.060	-	2.8
Boron (mg/L)	HGWC-9	0.061	-	2.3	0.060	-	2.9
Boron (mg/L)	HGWC-10	0.061	-	0.66	0.060	-	1
Boron (mg/L)	HGWC-11	0.061	-	0.23	0.060	-	0.53
Boron (mg/L)	HGWC-12	0.061	-	1.8	0.060	-	2.1
Boron (mg/L)	HGWC-13	0.061	-	0.86 J[3]	0.060	-	1.7
Calcium (mg/L)	HGWC-7	138	-	101	138	-	105
Calcium (mg/L)	HGWC-8	138	-	125	138	-	113
Calcium (mg/L)	HGWC-9	138	-	164	138	-	175
Calcium (mg/L)	HGWC-10	138	-	137	138	-	157
Calcium (mg/L)	HGWC-11	138	-	112	138	-	113
Calcium (mg/L)	HGWC-12	138	-	114	138	-	153
Calcium (mg/L)	HGWC-13	138	-	77.1	138	-	195
Chloride (mg/L)	HGWC-7	20.3	-	55.5	20.3	-	49.8
Chloride (mg/L)	HGWC-8	20.3	-	91.6	20.3	-	60.2
Chloride (mg/L)	HGWC-9	20.3	-	130	20.3	-	126
Chloride (mg/L)	HGWC-10	20.3	-	49.3	20.3	-	49.9
Chloride (mg/L)	HGWC-11	20.3	-	4.6	20.3	-	27.9
Chloride (mg/L)	HGWC-12	20.3	-	62.8	20.3	-	81
Chloride (mg/L)	HGWC-13	20.3	-	36.4	20.3	-	109
Fluoride (mg/L)	HGWC-7	0.360	-	0.097 J	0.234	-	0.1
Fluoride (mg/L)	HGWC-8	0.360	-	0.63	0.234	-	0.49
Fluoride (mg/L)	HGWC-9	0.360	-	0.14 J	0.234	-	0.26 J[4]
Fluoride (mg/L)	HGWC-10	0.360	-	0.082 J	0.234	-	0.17
Fluoride (mg/L)	HGWC-11	0.360	-	0.43	0.234	-	0.42
Fluoride (mg/L)	HGWC-12	0.360	-	0.3 J	0.234	-	0.26 J[4]
Fluoride (mg/L)	HGWC-13	0.360	-	0.83	0.234	-	0.64
pH (s.u.)	HGWC-7	7.5	4.9	7.3	7.5	4.9	7.1
pH (s.u.)	HGWC-8	7.5	4.9	6.9	7.5	4.9	7.0
pH (s.u.)	HGWC-9	7.5	4.9	6.9	7.5	4.9	7.0
pH (s.u.)	HGWC-10	7.5	4.9	6.6	7.5	4.9	6.6
pH (s.u.)	HGWC-11	7.5	4.9	5.7	7.5	4.9	5.8
pH (s.u.)	HGWC-12	7.5	4.9	7.0	7.5	4.9	7.1
pH (s.u.)	HGWC-13	7.5	4.9	7.2	7.5	4.9	6.9
Sulfate (mg/L)	HGWC-7	84.3	-	127	84.3	-	109
Sulfate (mg/L)	HGWC-8	84.3	-	194	84.3	-	133
Sulfate (mg/L)	HGWC-9	84.3	-	214	84.3	-	214
Sulfate (mg/L)	HGWC-10	84.3	-	159	84.3	-	181
Sulfate (mg/L)	HGWC-11	84.3	-	298	84.3	-	ND
Sulfate (mg/L)	HGWC-12	84.3	-	176	84.3	-	198
Sulfate (mg/L)	HGWC-13	84.3	-	105	84.3	-	444

Table E-1
Detection Monitoring Prediction Limit Comparison
Plant Hammond AP-1, Floyd County, Georgia

Parameter	Well ID	2019 AM 01			2019 AM 02		
		Upper PL	Lower PL	Apr 1-8, 2019	Upper PL	Lower PL	Sep 23-30, 2019
TDS (mg/L)	HGWC-7	469	-	428	474	-	503
TDS (mg/L)	HGWC-8	469	-	543	474	-	457
TDS (mg/L)	HGWC-9	469	-	673	474	-	730
TDS (mg/L)	HGWC-10	469	-	525	474	-	624
TDS (mg/L)	HGWC-11	469	-	483	474	-	528
TDS (mg/L)	HGWC-12	469	-	462	474	-	653
TDS (mg/L)	HGWC-13	469	-	331	474	-	1010

Notes:
- = Not applicable
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 in spite of the assigned J-flag.
(4) Value J-flagged by the laboratory as estimated. The concentration reported for the September 2019 event is consistent with historical data and therefore deemed an exceedance in spite of the assigned J-flag.

Prediction Limit (AM 01) - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/21/2019, 11:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	HGWC-10	0.06061	n/a	4/3/2019	0.66	Yes	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-11	0.06061	n/a	4/3/2019	0.23	Yes	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-12	0.06061	n/a	4/3/2019	1.8	Yes	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-7	0.06061	n/a	4/2/2019	0.99	Yes	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-8	0.06061	n/a	4/3/2019	2.8	Yes	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-9	0.06061	n/a	4/3/2019	2.3	Yes	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Calcium (mg/L)	HGWC-9	138	n/a	4/3/2019	164	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-10	20.3	n/a	4/3/2019	49.3	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-12	20.3	n/a	4/3/2019	62.8	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-13	20.3	n/a	4/5/2019	36.4	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-7	20.3	n/a	4/2/2019	55.5	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-8	20.3	n/a	4/3/2019	91.6	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-9	20.3	n/a	4/3/2019	130	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-11	0.36	n/a	4/3/2019	0.43	Yes	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-13	0.36	n/a	4/5/2019	0.83	Yes	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-8	0.36	n/a	4/3/2019	0.63	Yes	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-10	84.3	n/a	4/3/2019	159	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-11	84.3	n/a	4/3/2019	298	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-12	84.3	n/a	4/3/2019	176	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-13	84.3	n/a	4/5/2019	105	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-7	84.3	n/a	4/2/2019	127	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-8	84.3	n/a	4/3/2019	194	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-9	84.3	n/a	4/3/2019	214	Yes	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-10	469.2	n/a	4/3/2019	525	Yes	36	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-11	469.2	n/a	4/3/2019	483	Yes	36	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-8	469.2	n/a	4/3/2019	543	Yes	36	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-9	469.2	n/a	4/3/2019	673	Yes	36	0	No	0.001075	Param Inter 1 of 2

Prediction Limit (AM 01) - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/21/2019, 11:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**HGWC-10**	**0.06061**	**n/a**	**4/3/2019**	**0.66**	**Yes**	**36**	**5.556**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-11**	**0.06061**	**n/a**	**4/3/2019**	**0.23**	**Yes**	**36**	**5.556**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-12**	**0.06061**	**n/a**	**4/3/2019**	**1.8**	**Yes**	**36**	**5.556**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	HGWC-13	0.06061	n/a	4/5/2019	0.86	No	36	5.556	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	**HGWC-7**	**0.06061**	**n/a**	**4/2/2019**	**0.99**	**Yes**	**36**	**5.556**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-8**	**0.06061**	**n/a**	**4/3/2019**	**2.8**	**Yes**	**36**	**5.556**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-9**	**0.06061**	**n/a**	**4/3/2019**	**2.3**	**Yes**	**36**	**5.556**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Calcium (mg/L)	HGWC-10	138	n/a	4/3/2019	137	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-11	138	n/a	4/3/2019	112	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-12	138	n/a	4/3/2019	114	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-13	138	n/a	4/5/2019	77.1	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-7	138	n/a	4/2/2019	101	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-8	138	n/a	4/3/2019	125	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-9**	**138**	**n/a**	**4/3/2019**	**164**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-10**	**20.3**	**n/a**	**4/3/2019**	**49.3**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	HGWC-11	20.3	n/a	4/3/2019	4.6	No	36	0	n/a	0.001377	NP Inter (normality) 1 of 2
Chloride (mg/L)	**HGWC-12**	**20.3**	**n/a**	**4/3/2019**	**62.8**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-13**	**20.3**	**n/a**	**4/5/2019**	**36.4**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-7**	**20.3**	**n/a**	**4/2/2019**	**55.5**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-8**	**20.3**	**n/a**	**4/3/2019**	**91.6**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-9**	**20.3**	**n/a**	**4/3/2019**	**130**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	HGWC-10	0.36	n/a	4/3/2019	0.082	No	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	**HGWC-11**	**0.36**	**n/a**	**4/3/2019**	**0.43**	**Yes**	**42**	**28.57**	**n/a**	**0.001046**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	HGWC-12	0.36	n/a	4/3/2019	0.3	No	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	**HGWC-13**	**0.36**	**n/a**	**4/5/2019**	**0.83**	**Yes**	**42**	**28.57**	**n/a**	**0.001046**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	HGWC-7	0.36	n/a	4/2/2019	0.097	No	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
Fluoride (mg/L)	**HGWC-8**	**0.36**	**n/a**	**4/3/2019**	**0.63**	**Yes**	**42**	**28.57**	**n/a**	**0.001046**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	HGWC-9	0.36	n/a	4/3/2019	0.14	No	42	28.57	n/a	0.001046	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-10	7.47	4.9	4/3/2019	6.55	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-11	7.47	4.9	4/3/2019	5.69	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-12	7.47	4.9	4/3/2019	6.96	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-13	7.47	4.9	4/5/2019	7.24	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-7	7.47	4.9	4/2/2019	7.27	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-8	7.47	4.9	4/3/2019	6.85	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-9	7.47	4.9	4/3/2019	6.88	No	42	0	n/a	0.002093	NP Inter (normality) 1 of 2
Sulfate (mg/L)	**HGWC-10**	**84.3**	**n/a**	**4/3/2019**	**159**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-11**	**84.3**	**n/a**	**4/3/2019**	**298**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-12**	**84.3**	**n/a**	**4/3/2019**	**176**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-13**	**84.3**	**n/a**	**4/5/2019**	**105**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-7**	**84.3**	**n/a**	**4/2/2019**	**127**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-8**	**84.3**	**n/a**	**4/3/2019**	**194**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-9**	**84.3**	**n/a**	**4/3/2019**	**214**	**Yes**	**36**	**0**	**n/a**	**0.001377**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-10**	**469.2**	**n/a**	**4/3/2019**	**525**	**Yes**	**36**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-11**	**469.2**	**n/a**	**4/3/2019**	**483**	**Yes**	**36**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	HGWC-12	469.2	n/a	4/3/2019	462	No	36	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-13	469.2	n/a	4/5/2019	331	No	36	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-7	469.2	n/a	4/2/2019	428	No	36	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**HGWC-8**	**469.2**	**n/a**	**4/3/2019**	**543**	**Yes**	**36**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-9**	**469.2**	**n/a**	**4/3/2019**	**673**	**Yes**	**36**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**

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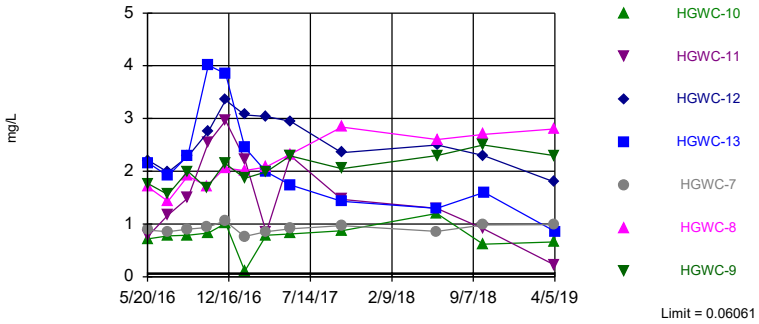
Exceeds Limit: HGWC-10, HGWC-11, HGWC-12, HGWC-7, HGWC-8, HGWC-9

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.1482, Std. Dev.=0.04924, n=36, 5.556% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9421, critical = 0.912. Kappa = 1.99 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Boron Analysis Run 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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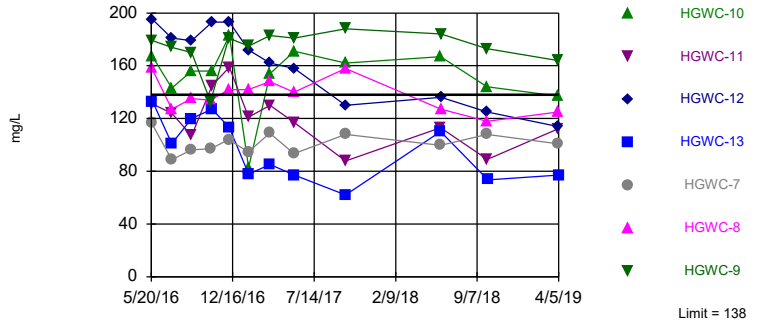
Exceeds Limit: HGWC-9

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 36 background values. Annual per-constituent alpha = 0.01911. Individual comparison alpha = 0.001377 (1 of 2). Comparing 7 points to limit.

Constituent: Calcium Analysis Run 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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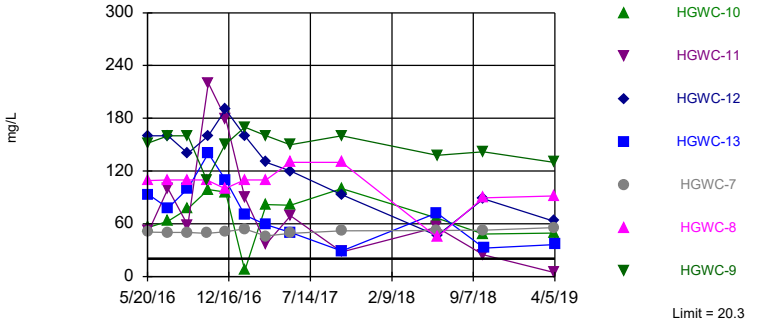
Exceeds Limit: HGWC-10, HGWC-12, HGWC-13, HGWC-7, HGWC-8, HGWC-9

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 36 background values. Annual per-constituent alpha = 0.01911. Individual comparison alpha = 0.001377 (1 of 2). Comparing 7 points to limit.

Constituent: Chloride Analysis Run 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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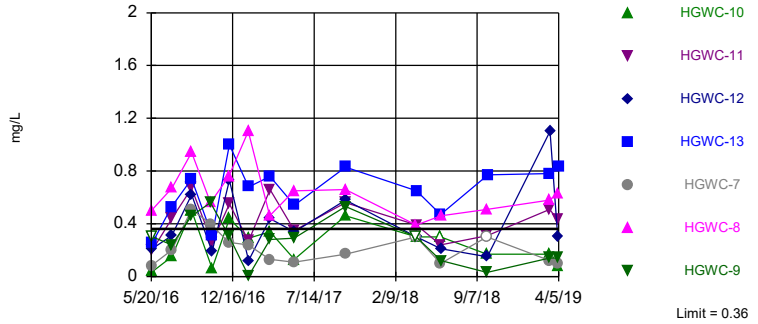
Hollow symbols indicate censored values.

Exceeds Limit: HGWC-11, HGWC-13, HGWC-8

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 42 background values. 28.57% NDs. Annual per-constituent alpha = 0.01455. Individual comparison alpha = 0.001046 (1 of 2). Comparing 7 points to limit.

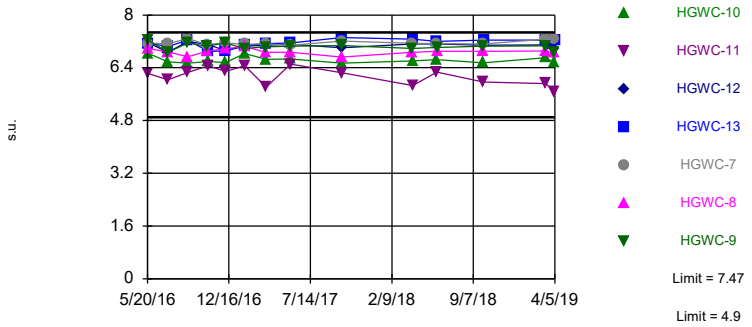
Constituent: Fluoride Analysis Run 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Within Limits

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 42 background values. Annual per-constituent alpha = 0.0291. Individual comparison alpha = 0.002093 (1 of 2). Comparing 7 points to limit.

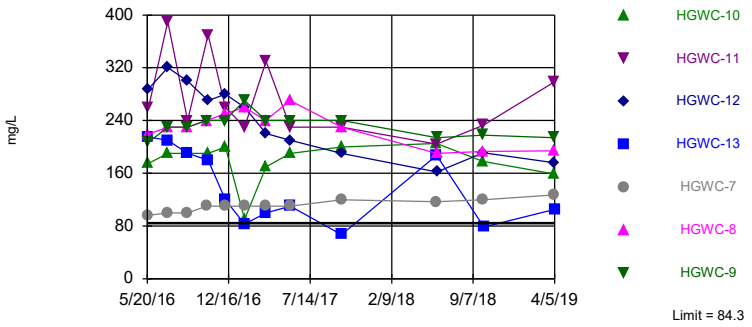
Constituent: pH Analysis Run 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Exceeds Limit: HGWC-10, HGWC-11, HGWC-12, HGWC-13, HGWC-7, HGWC-8...

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 36 background values. Annual per-constituent alpha = 0.01911. Individual comparison alpha = 0.001377 (1 of 2). Comparing 7 points to limit.

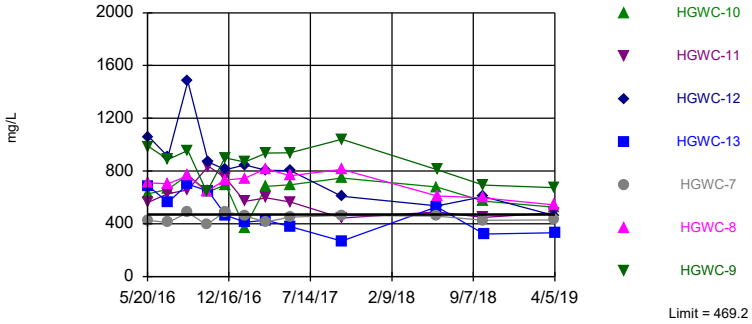
Constituent: Sulfate Analysis Run 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Exceeds Limit: HGWC-10, HGWC-11, HGWC-8, HGWC-9

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=263.2, Std. Dev.=103.6, n=36. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9235, critical = 0.912. Kappa = 1.99 (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 7/21/2019 11:36 PM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Trend Test (AM 01) - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/24/2019, 10:18 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**HGWC-13**	**-0.528**	**-38**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Boron (mg/L)	**HGWC-8**	**0.4416**	**54**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Boron (mg/L)	**HGWC-9**	**0.2743**	**45**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Calcium (mg/L)	**HGWA-3 (bg)**	**3.671**	**32**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Chloride (mg/L)	**HGWC-12**	**-42.85**	**-44**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Chloride (mg/L)	**HGWC-13**	**-31.99**	**-36**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWA-2 (bg)**	**1.418**	**34**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWA-3 (bg)**	**2.946**	**48**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWC-12**	**-57.93**	**-54**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWC-13**	**-58.33**	**-38**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWC-7**	**9.629**	**52**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Total Dissolved Solids (mg/L)	**HGWC-11**	**-77.23**	**-32**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**

Trend Test - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/24/2019, 10:18 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	-0.0006149	-6	-30	No	12	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWA-2 (bg)	0.001596	26	30	No	12	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWA-3 (bg)	-0.001203	-16	-30	No	12	16.67	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-10	0.04985	10	30	No	12	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-11	-0.2889	-12	-30	No	12	0	n/a	n/a	0.05	NP
Boron (mg/L)	HGWC-12	-0.1029	-4	-30	No	12	0	n/a	n/a	0.05	NP
Boron (mg/L)	**HGWC-13**	**-0.528**	**-38**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Boron (mg/L)	HGWC-7	0.03487	23	30	No	12	0	n/a	n/a	0.05	NP
Boron (mg/L)	**HGWC-8**	**0.4416**	**54**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Boron (mg/L)	**HGWC-9**	**0.2743**	**45**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Calcium (mg/L)	HGWA-1 (bg)	6.667	28	30	No	12	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWA-2 (bg)	-1.26	-10	-30	No	12	0	n/a	n/a	0.05	NP
Calcium (mg/L)	**HGWA-3 (bg)**	**3.671**	**32**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Calcium (mg/L)	HGWC-9	2.001	9	30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWA-1 (bg)	-0.1046	-1	-30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWA-2 (bg)	0	-4	-30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWA-3 (bg)	0.09075	17	30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWC-10	-4.164	-4	-30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	**HGWC-12**	**-42.85**	**-44**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Chloride (mg/L)	**HGWC-13**	**-31.99**	**-36**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Chloride (mg/L)	HGWC-7	1.212	26	30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWC-8	0	-7	-30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWC-9	-7.276	-19	-30	No	12	0	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWA-1 (bg)	0.02724	19	37	No	14	14.29	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWA-2 (bg)	0	14	37	No	14	50	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWA-3 (bg)	0.01182	10	37	No	14	21.43	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWC-11	0.01818	3	37	No	14	0	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWC-13	0.1038	34	37	No	14	0	n/a	n/a	0.05	NP
Fluoride (mg/L)	HGWC-8	-0.03376	-16	-37	No	14	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.918	25	30	No	12	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	**HGWA-2 (bg)**	**1.418**	**34**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWA-3 (bg)**	**2.946**	**48**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	HGWC-10	0	3	30	No	12	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-11	-23.41	-22	-30	No	12	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	**HGWC-12**	**-57.93**	**-54**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWC-13**	**-58.33**	**-38**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	**HGWC-7**	**9.629**	**52**	**30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Sulfate (mg/L)	HGWC-8	-9.598	-6	-30	No	12	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-9	0	-2	-30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	6.354	4	30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-5.334	-14	-30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	7.889	11	30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWC-10	-18.8	-8	-30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	**HGWC-11**	**-77.23**	**-32**	**-30**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.05**	**NP**
Total Dissolved Solids (mg/L)	HGWC-8	-45.4	-10	-30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	HGWC-9	-68.95	-18	-30	No	12	0	n/a	n/a	0.05	NP

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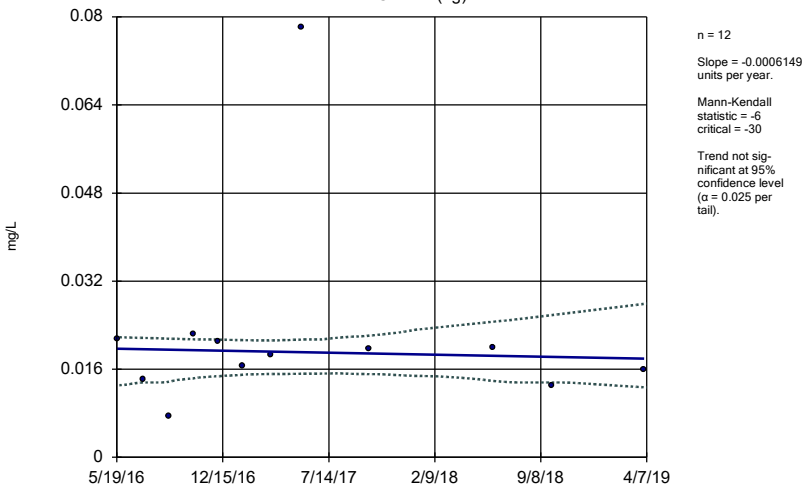
Sen's Slope and 95% Confidence Band

HGWA-1 (bg)



n = 12

Slope = -0.0006149 units per year.

Mann-Kendall statistic = -6
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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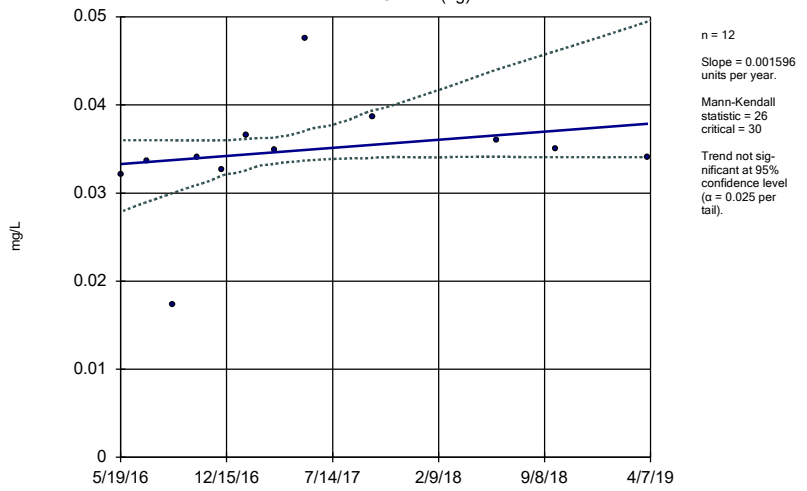
Sen's Slope and 95% Confidence Band

HGWA-2 (bg)



n = 12

Slope = 0.001596 units per year.

Mann-Kendall statistic = 26
critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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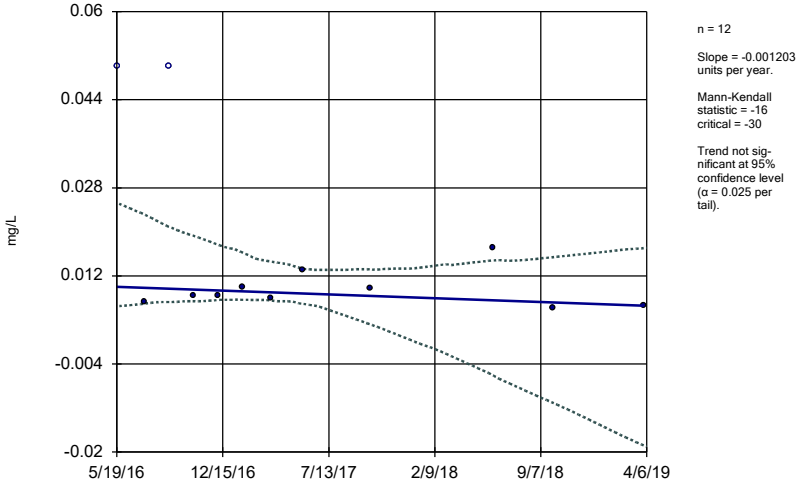
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

HGWA-3 (bg)



n = 12

Slope = -0.001203 units per year.

Mann-Kendall statistic = -16
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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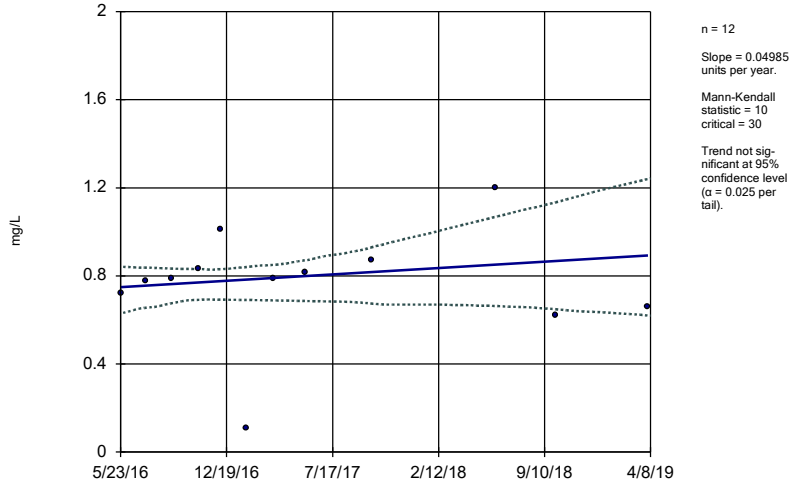
Sen's Slope and 95% Confidence Band

HGWC-10



n = 12

Slope = 0.04985 units per year.

Mann-Kendall statistic = 10
critical = 30

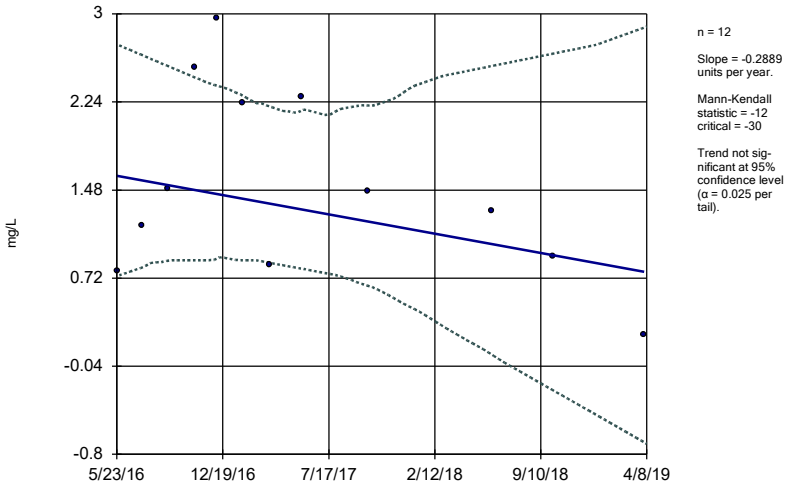
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-11



n = 12

Slope = -0.2889 units per year.

Mann-Kendall statistic = -12 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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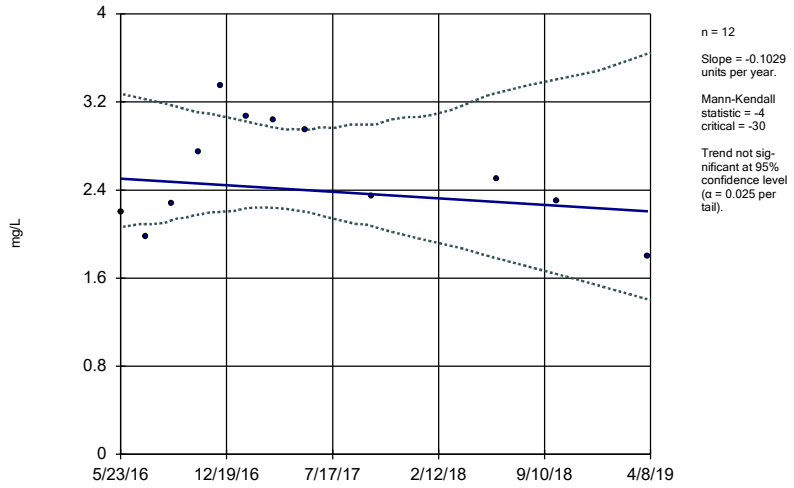
Sen's Slope and 95% Confidence Band

HGWC-12



n = 12

Slope = -0.1029 units per year.

Mann-Kendall statistic = -4 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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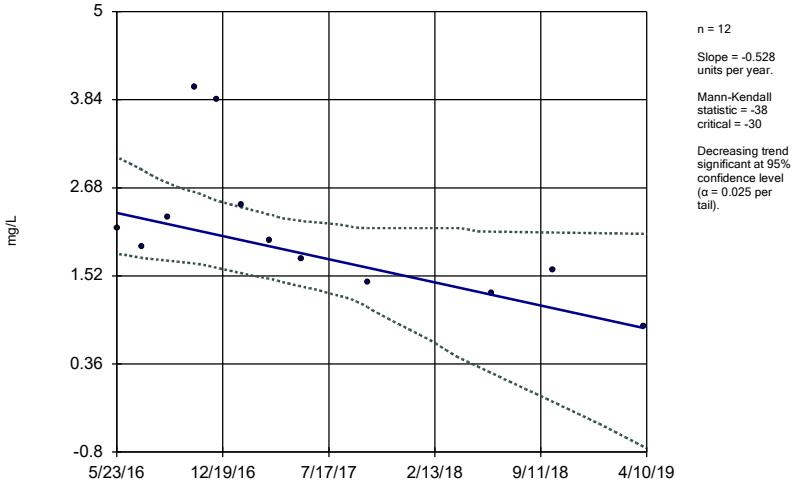
Sen's Slope and 95% Confidence Band

HGWC-13



n = 12

Slope = -0.528 units per year.

Mann-Kendall statistic = -38 critical = -30

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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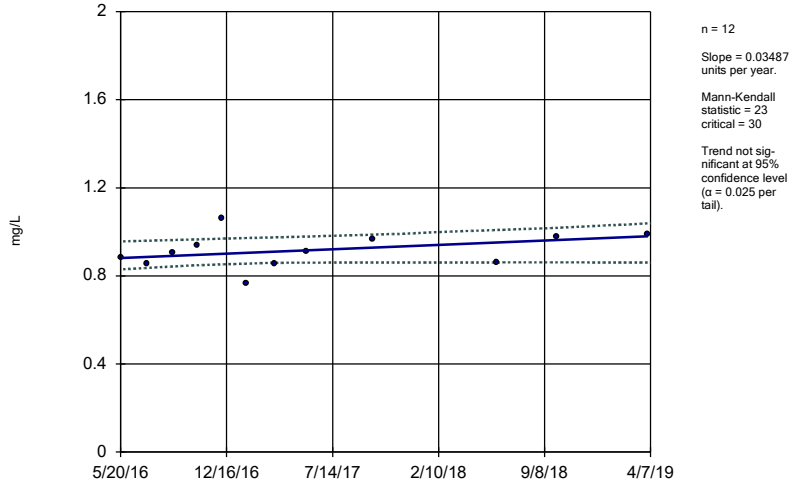
Sen's Slope and 95% Confidence Band

HGWC-7



n = 12

Slope = 0.03487 units per year.

Mann-Kendall statistic = 23 critical = 30

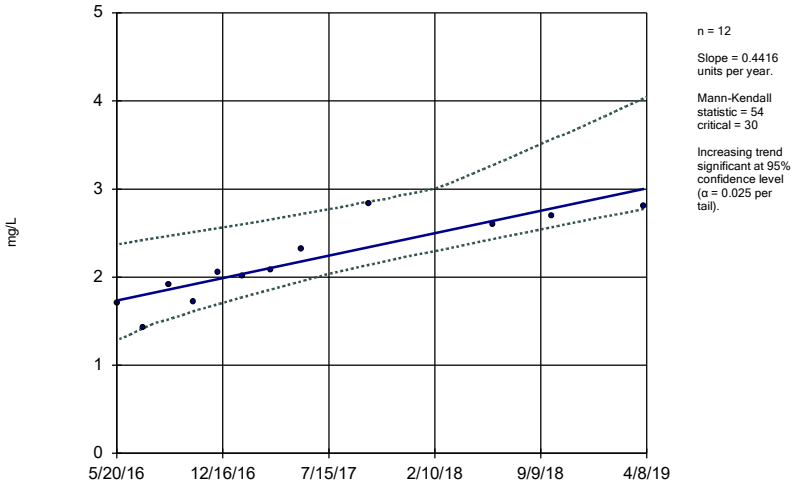
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-8



n = 12

Slope = 0.4416 units per year.

Mann-Kendall statistic = 54 critical = 30

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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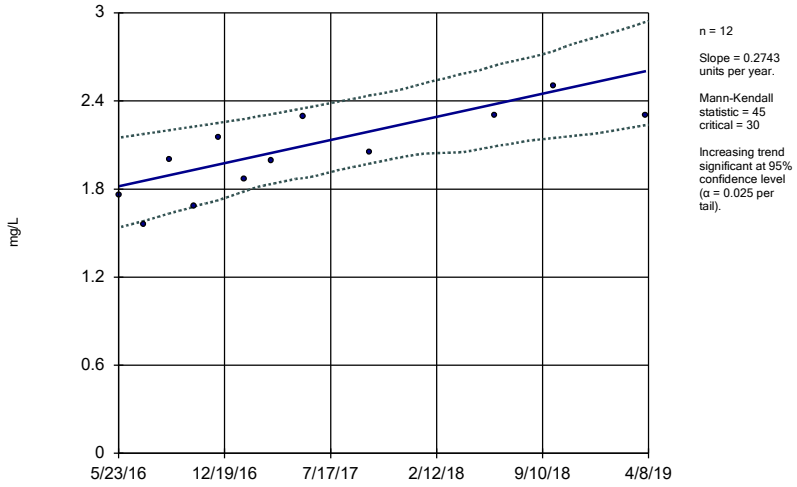
Sen's Slope and 95% Confidence Band

HGWC-9



n = 12

Slope = 0.2743 units per year.

Mann-Kendall statistic = 45 critical = 30

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Boron Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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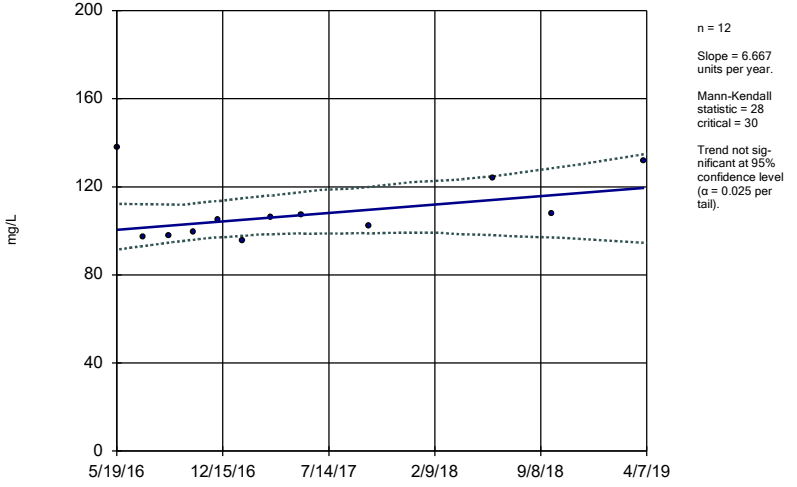
Sen's Slope and 95% Confidence Band

HGWA-1 (bg)



n = 12

Slope = 6.667 units per year.

Mann-Kendall statistic = 28 critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Calcium Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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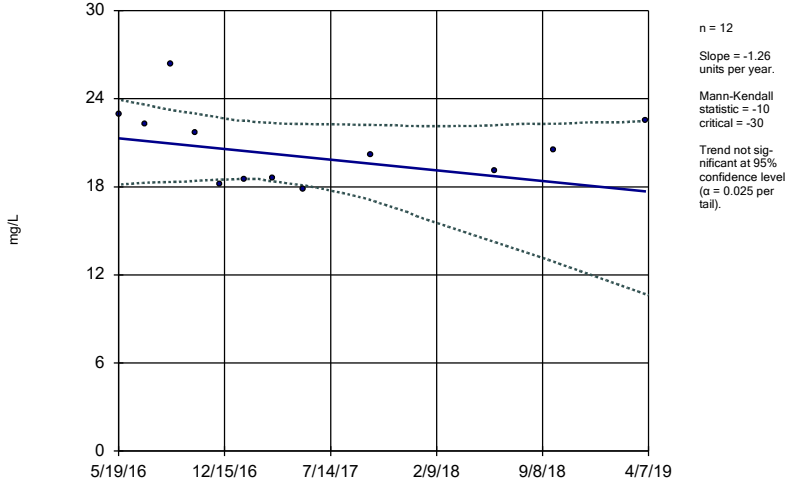
Sen's Slope and 95% Confidence Band

HGWA-2 (bg)



n = 12

Slope = -1.26 units per year.

Mann-Kendall statistic = -10 critical = -30

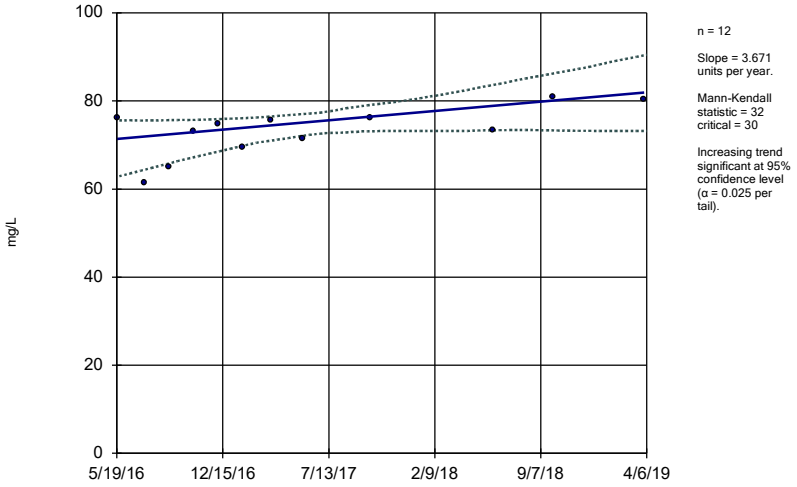
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Calcium Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWA-3 (bg)



n = 12

Slope = 3.671 units per year.

Mann-Kendall statistic = 32
critical = 30

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Calcium Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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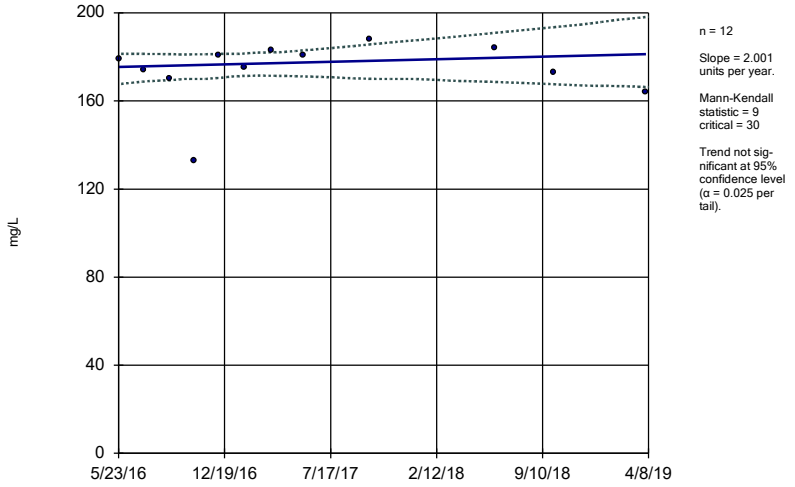
Sen's Slope and 95% Confidence Band

HGWC-9



n = 12

Slope = 2.001 units per year.

Mann-Kendall statistic = 9
critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Calcium Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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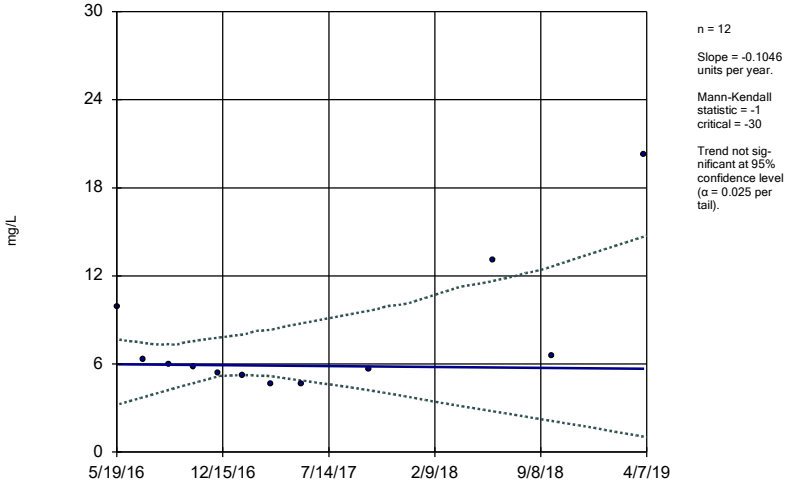
Sen's Slope and 95% Confidence Band

HGWA-1 (bg)



n = 12

Slope = -0.1046 units per year.

Mann-Kendall statistic = -1
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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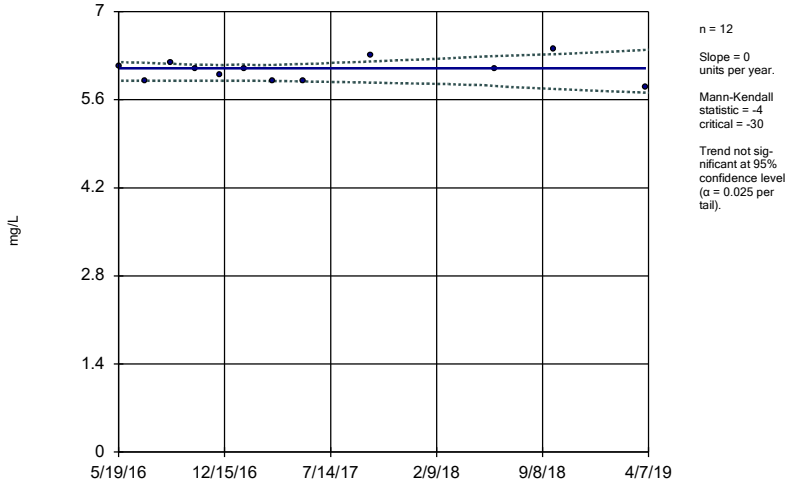
Sen's Slope and 95% Confidence Band

HGWA-2 (bg)



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = -4
critical = -30

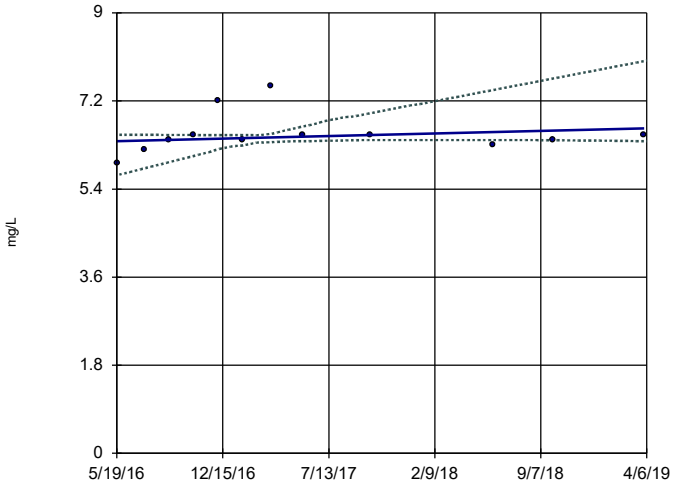
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWA-3 (bg)



n = 12

Slope = 0.09075 units per year.

Mann-Kendall statistic = 17 critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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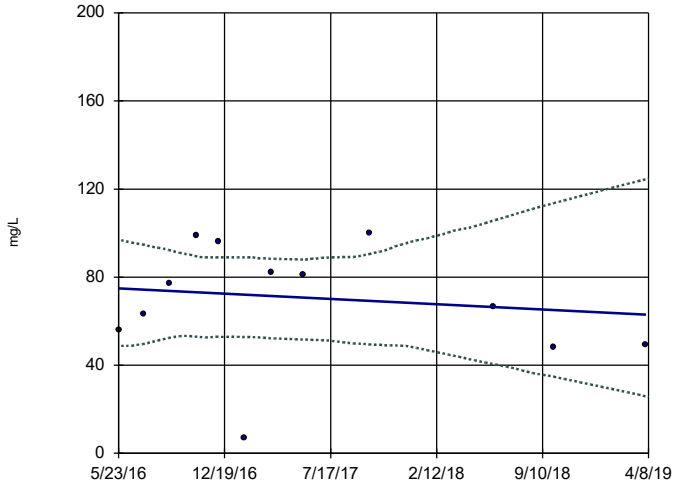
Sen's Slope and 95% Confidence Band

HGWC-10



n = 12

Slope = -4.164 units per year.

Mann-Kendall statistic = -4 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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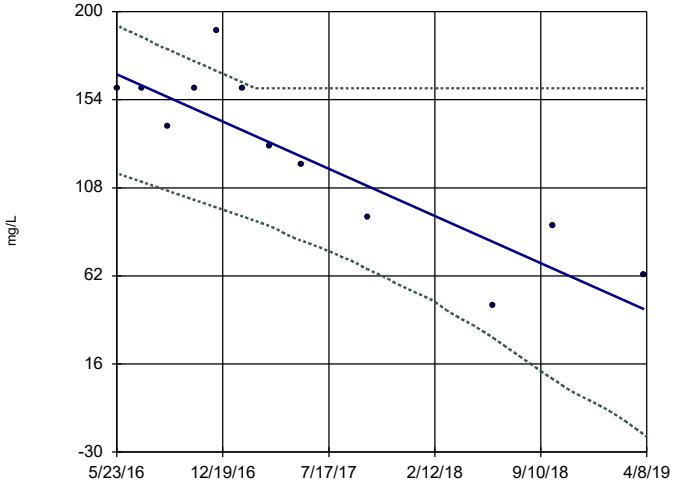
Sen's Slope and 95% Confidence Band

HGWC-12



n = 12

Slope = -42.85 units per year.

Mann-Kendall statistic = -44 critical = -30

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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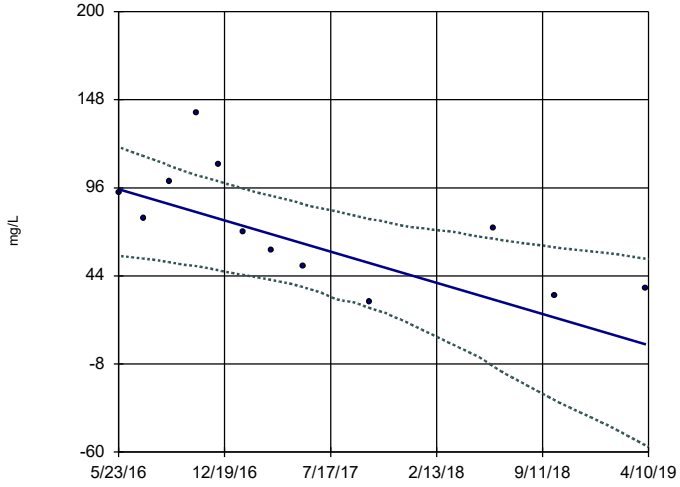
Sen's Slope and 95% Confidence Band

HGWC-13



n = 12

Slope = -31.99 units per year.

Mann-Kendall statistic = -36 critical = -30

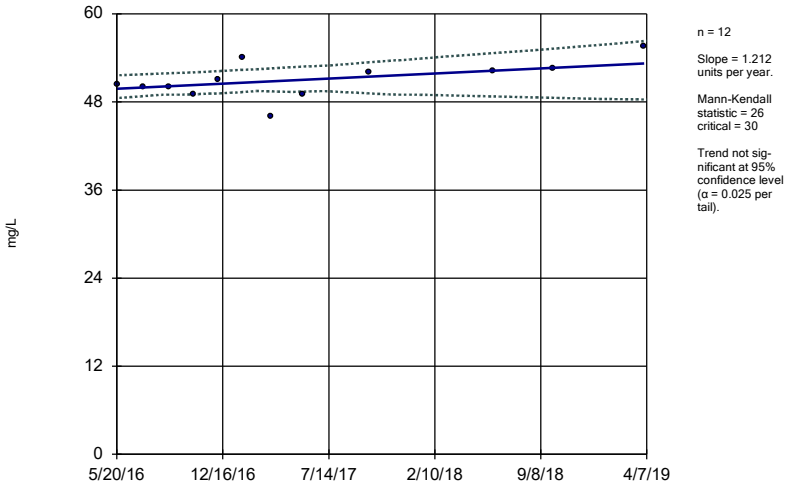
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-7



n = 12

Slope = 1.212 units per year.

Mann-Kendall statistic = 26 critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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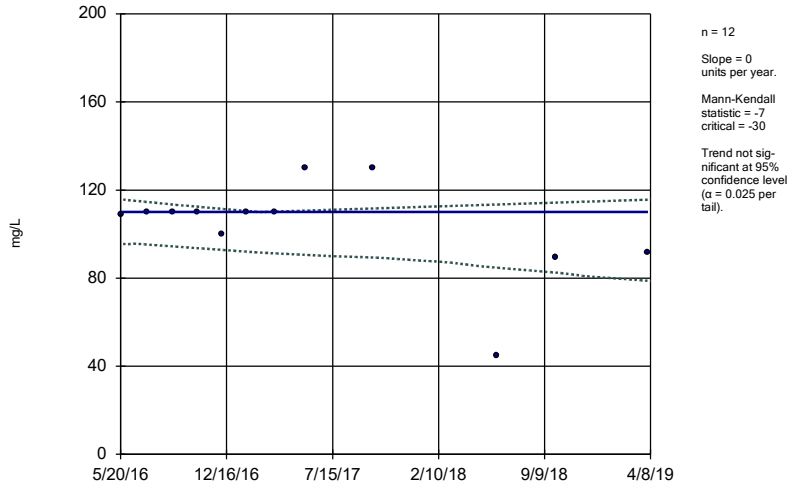
Sen's Slope and 95% Confidence Band

HGWC-8



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = -7 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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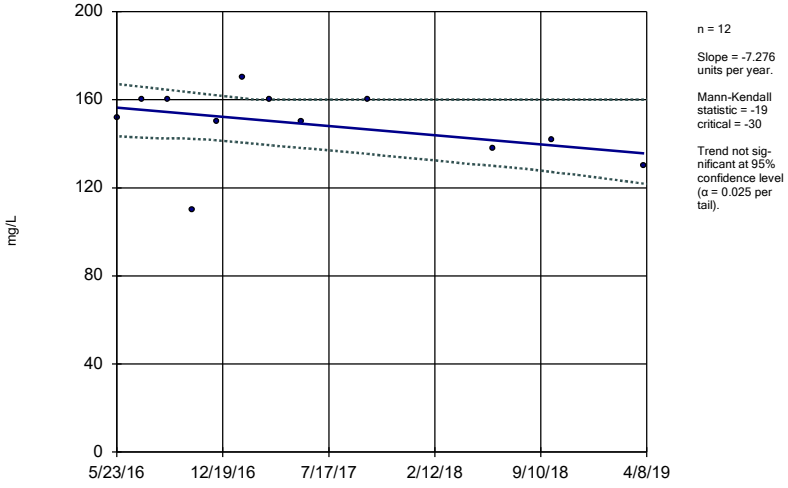
Sen's Slope and 95% Confidence Band

HGWC-9



n = 12

Slope = -7.276 units per year.

Mann-Kendall statistic = -19 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Chloride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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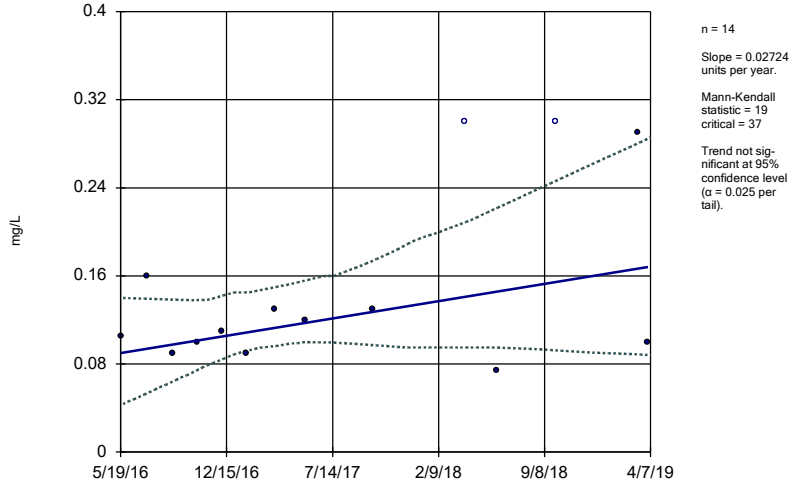
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

HGWA-1 (bg)



n = 14

Slope = 0.02724 units per year.

Mann-Kendall statistic = 19 critical = 37

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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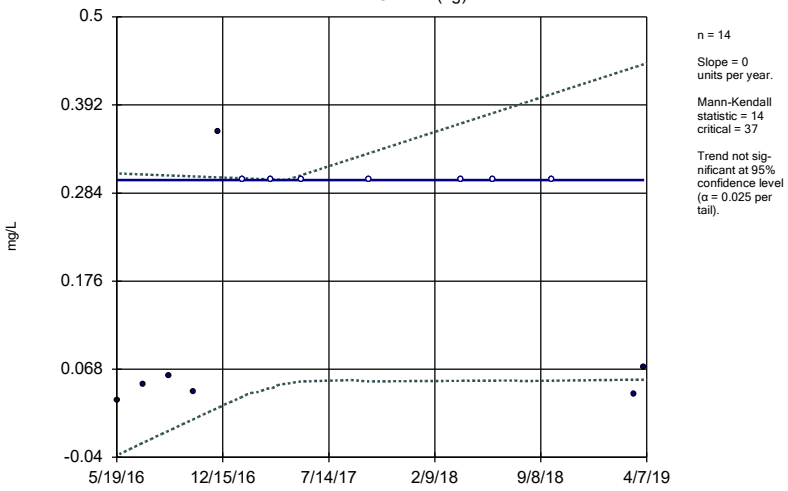
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

HGWA-2 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 14 critical = 37

Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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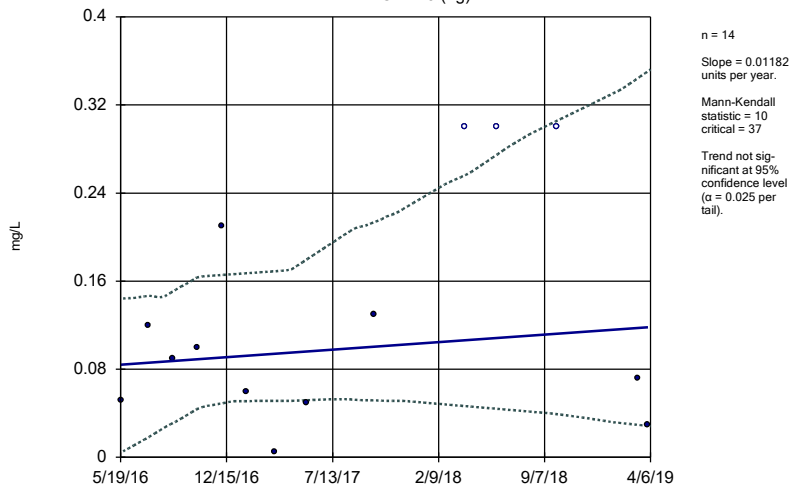
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

HGWA-3 (bg)



n = 14

Slope = 0.01182 units per year.

Mann-Kendall statistic = 10 critical = 37

Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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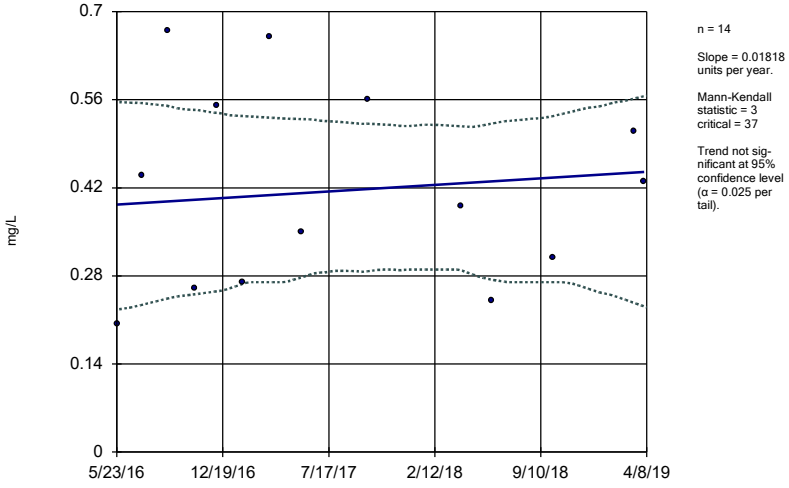
Sen's Slope and 95% Confidence Band

HGWC-11



n = 14

Slope = 0.01818 units per year.

Mann-Kendall statistic = 3 critical = 37

Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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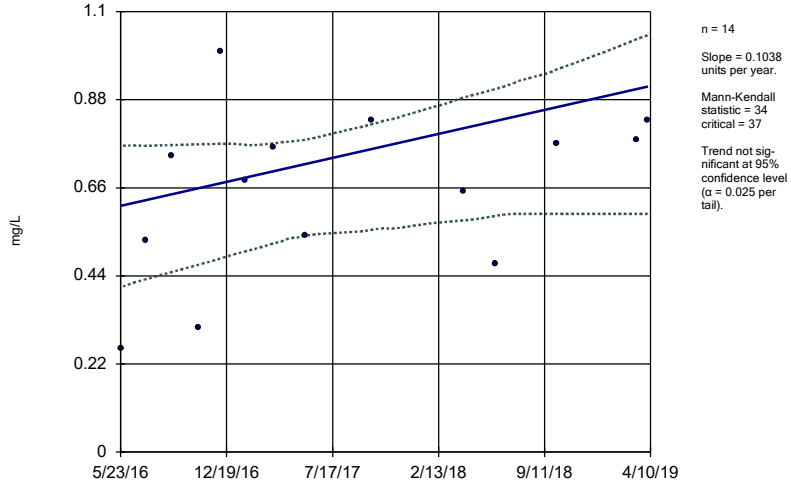
Sen's Slope and 95% Confidence Band

HGWC-13



n = 14

Slope = 0.1038 units per year.

Mann-Kendall statistic = 34 critical = 37

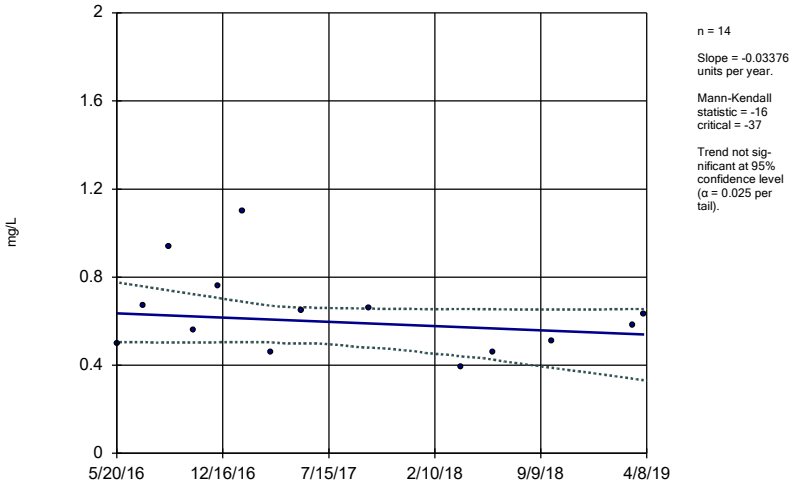
Trend not sig-nificant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/24/2019 10:14 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-8



n = 14

Slope = -0.03376 units per year.

Mann-Kendall statistic = -16
critical = -37

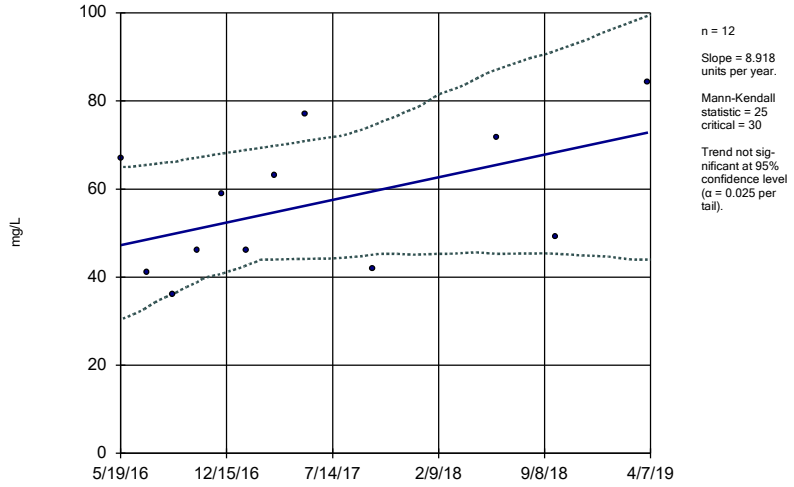
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Fluoride Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWA-1 (bg)



n = 12

Slope = 8.918 units per year.

Mann-Kendall statistic = 25
critical = 30

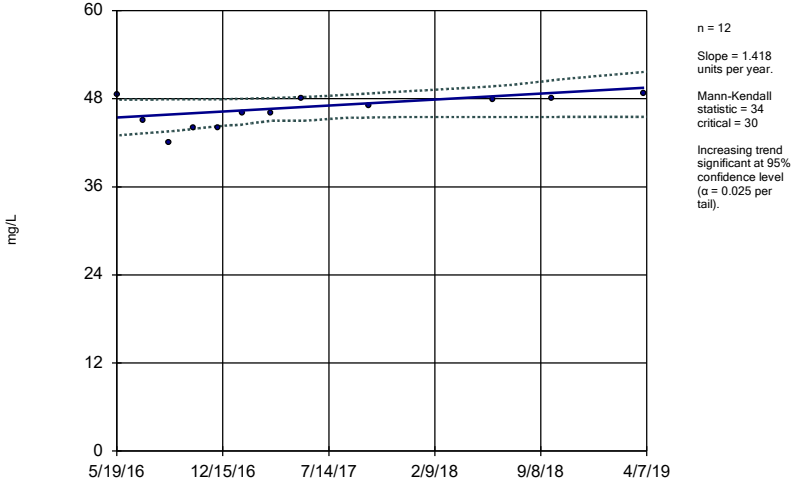
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWA-2 (bg)



n = 12

Slope = 1.418 units per year.

Mann-Kendall statistic = 34
critical = 30

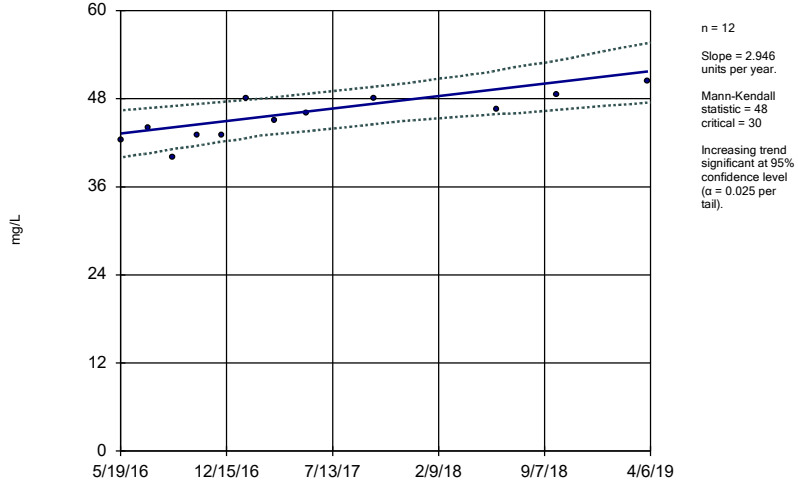
Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWA-3 (bg)



n = 12

Slope = 2.946 units per year.

Mann-Kendall statistic = 48
critical = 30

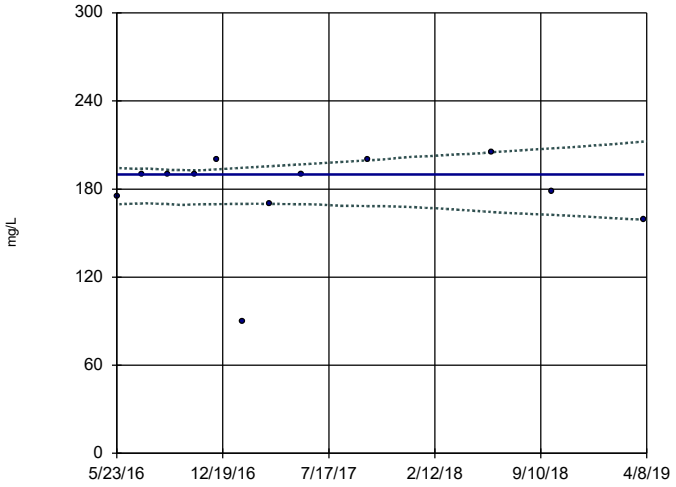
Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-10



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = 3 critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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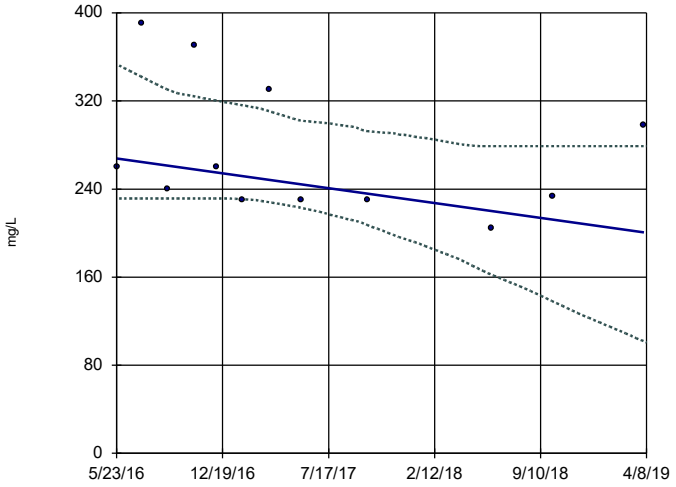
Sen's Slope and 95% Confidence Band

HGWC-11



n = 12

Slope = -23.41 units per year.

Mann-Kendall statistic = -22 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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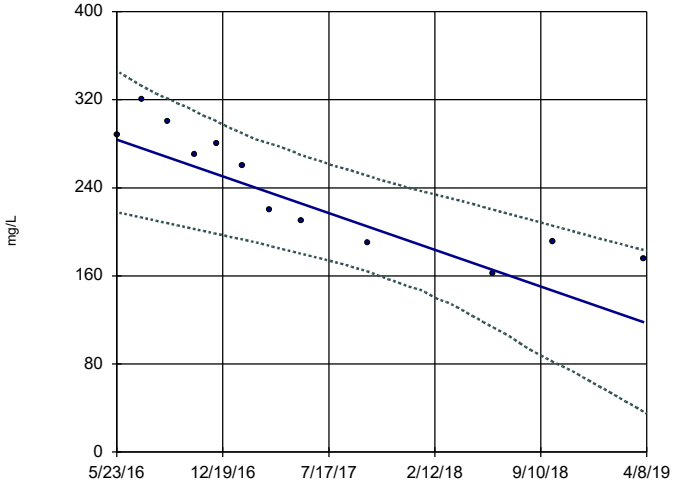
Sen's Slope and 95% Confidence Band

HGWC-12



n = 12

Slope = -57.93 units per year.

Mann-Kendall statistic = -54 critical = -30

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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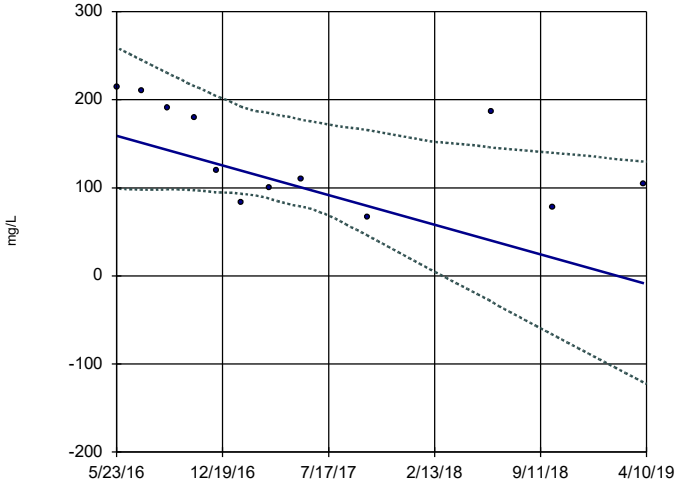
Sen's Slope and 95% Confidence Band

HGWC-13



n = 12

Slope = -58.33 units per year.

Mann-Kendall statistic = -38 critical = -30

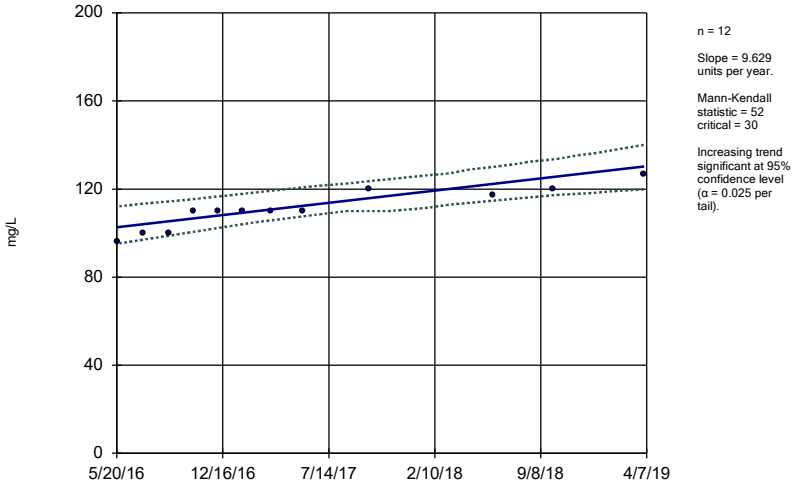
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-7



n = 12

Slope = 9.629 units per year.

Mann-Kendall statistic = 52 critical = 30

Increasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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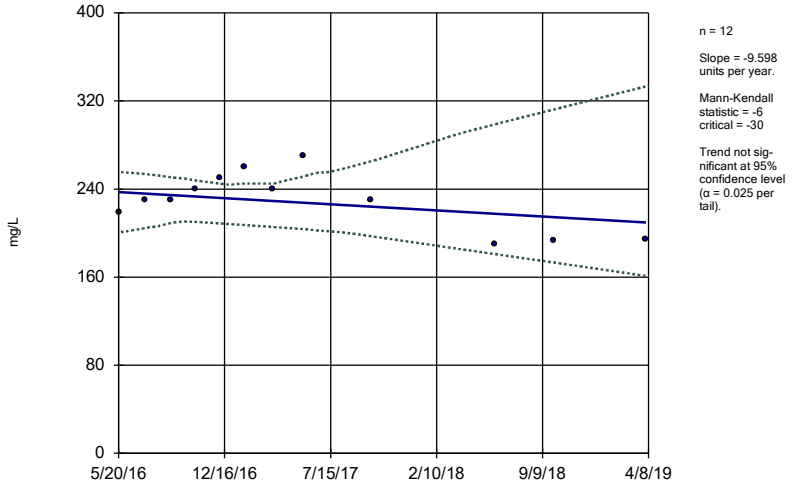
Sen's Slope and 95% Confidence Band

HGWC-8



n = 12

Slope = -9.598 units per year.

Mann-Kendall statistic = -6 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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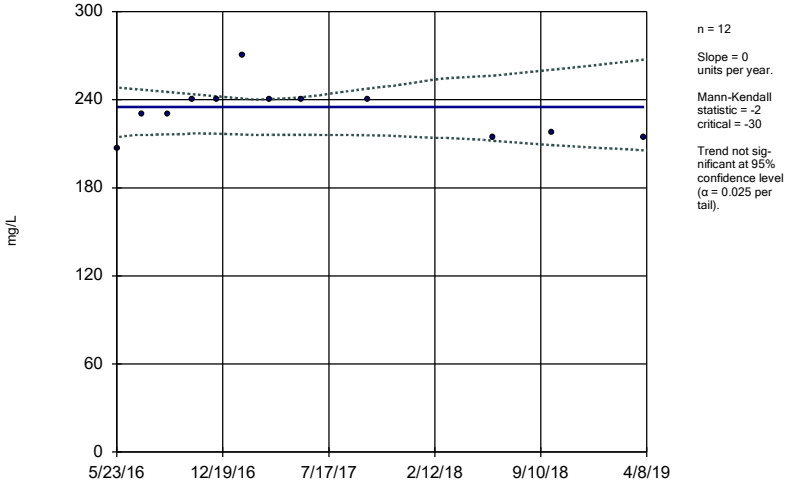
Sen's Slope and 95% Confidence Band

HGWC-9



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = -2 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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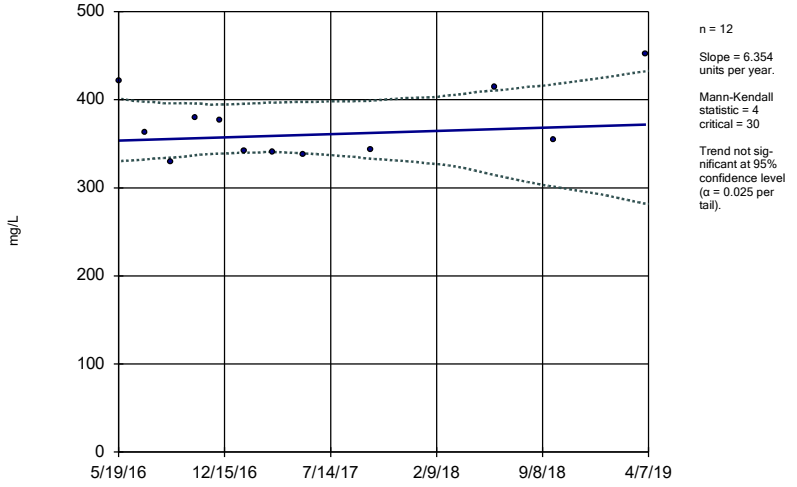
Sen's Slope and 95% Confidence Band

HGWA-1 (bg)



n = 12

Slope = 6.354 units per year.

Mann-Kendall statistic = 4 critical = 30

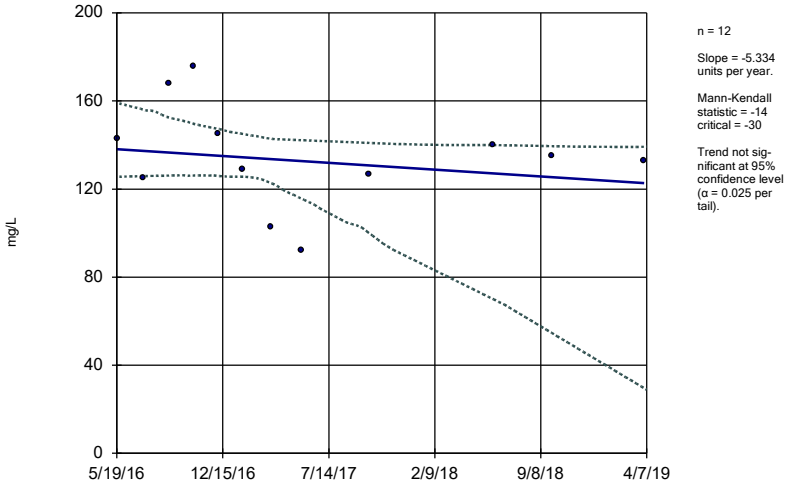
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWA-2 (bg)



n = 12

Slope = -5.334 units per year.

Mann-Kendall statistic = -14
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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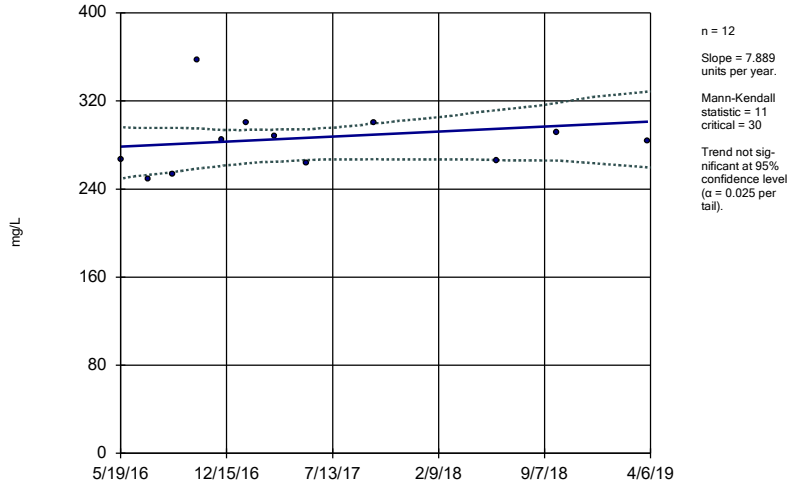
Sen's Slope and 95% Confidence Band

HGWA-3 (bg)



n = 12

Slope = 7.889 units per year.

Mann-Kendall statistic = 11
critical = 30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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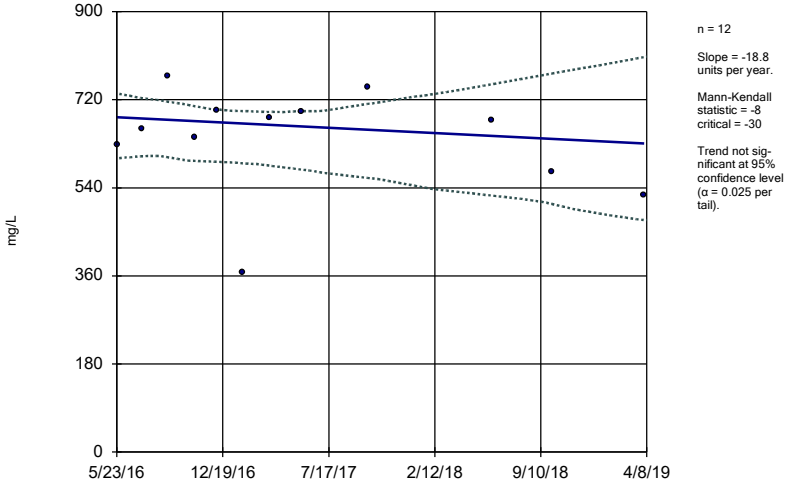
Sen's Slope and 95% Confidence Band

HGWC-10



n = 12

Slope = -18.8 units per year.

Mann-Kendall statistic = -8
critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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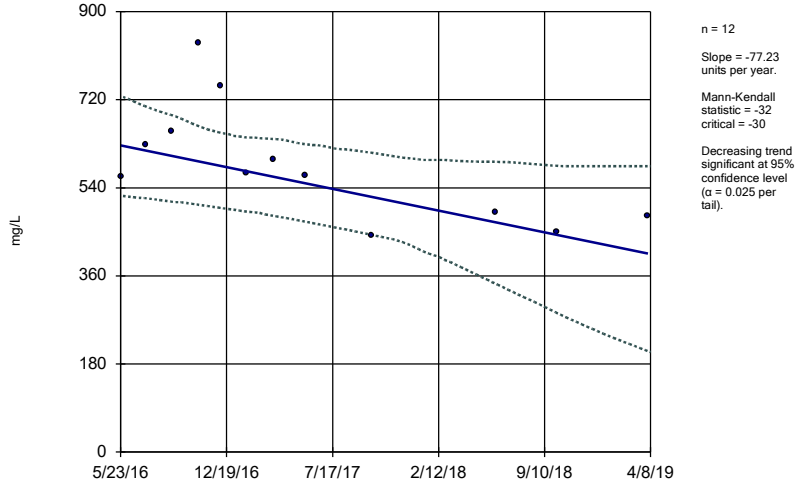
Sen's Slope and 95% Confidence Band

HGWC-11



n = 12

Slope = -77.23 units per year.

Mann-Kendall statistic = -32
critical = -30

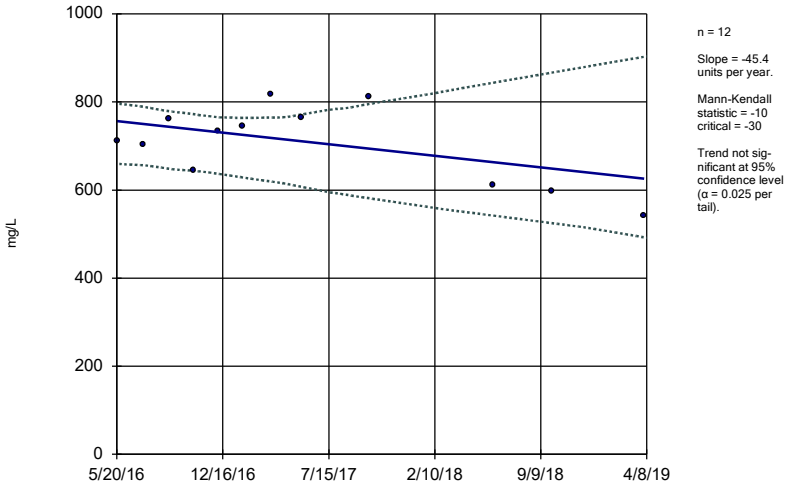
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Sen's Slope and 95% Confidence Band

HGWC-8



n = 12

Slope = -45.4 units per year.

Mann-Kendall statistic = -10 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

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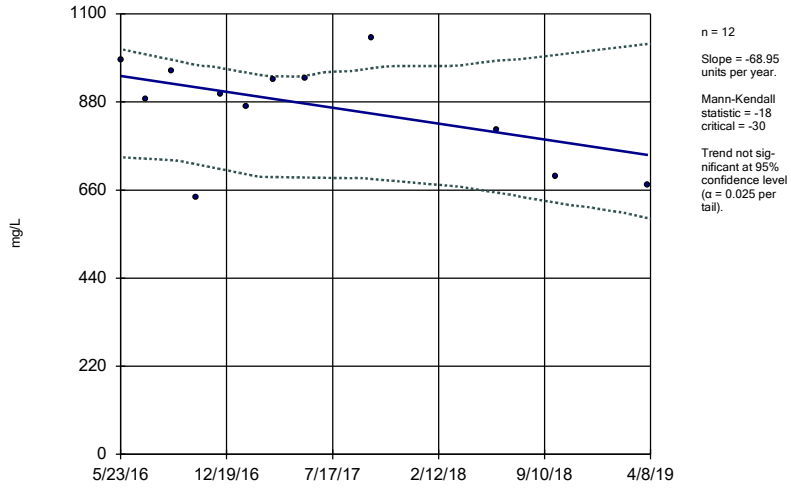
Sen's Slope and 95% Confidence Band

HGWC-9



n = 12

Slope = -68.95 units per year.

Mann-Kendall statistic = -18 critical = -30

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Total Dissolved Solids Analysis Run 7/24/2019 10:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Prediction Limit (AM 02) - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 10:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	HGWC-10	0.05986	n/a	9/27/2019	1	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-11	0.05986	n/a	9/27/2019	0.53	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-12	0.05986	n/a	9/27/2019	2.1	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-13	0.05986	n/a	9/26/2019	1.7	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-7	0.05986	n/a	9/25/2019	1.1	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-8	0.05986	n/a	9/24/2019	2.8	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-9	0.05986	n/a	9/27/2019	2.9	Yes	39	5.128	sqrt(x)	0.001075	Param Inter 1 of 2
Calcium (mg/L)	HGWC-10	138	n/a	9/27/2019	157	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-12	138	n/a	9/27/2019	153	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-13	138	n/a	9/26/2019	195	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-9	138	n/a	9/27/2019	175	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-10	20.3	n/a	9/27/2019	49.9	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-11	20.3	n/a	9/27/2019	27.9	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-12	20.3	n/a	9/27/2019	81	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-13	20.3	n/a	9/26/2019	109	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-7	20.3	n/a	9/25/2019	49.8	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-8	20.3	n/a	9/24/2019	60.2	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-9	20.3	n/a	9/27/2019	126	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-11	0.2336	n/a	9/27/2019	0.42	Yes	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-13	0.2336	n/a	9/26/2019	0.64	Yes	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-8	0.2336	n/a	9/24/2019	0.49	Yes	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	HGWC-10	84.3	n/a	9/27/2019	181	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-12	84.3	n/a	9/27/2019	198	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-13	84.3	n/a	9/26/2019	444	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-7	84.3	n/a	9/25/2019	109	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-8	84.3	n/a	9/24/2019	133	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-9	84.3	n/a	9/27/2019	214	Yes	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-10	473.5	n/a	9/27/2019	624	Yes	39	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-11	473.5	n/a	9/27/2019	528	Yes	39	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-12	473.5	n/a	9/27/2019	653	Yes	39	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-13	473.5	n/a	9/26/2019	1010	Yes	39	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-7	473.5	n/a	9/25/2019	503	Yes	39	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-9	473.5	n/a	9/27/2019	730	Yes	39	0	No	0.001075	Param Inter 1 of 2

Prediction Limit (AM 02) - All Results

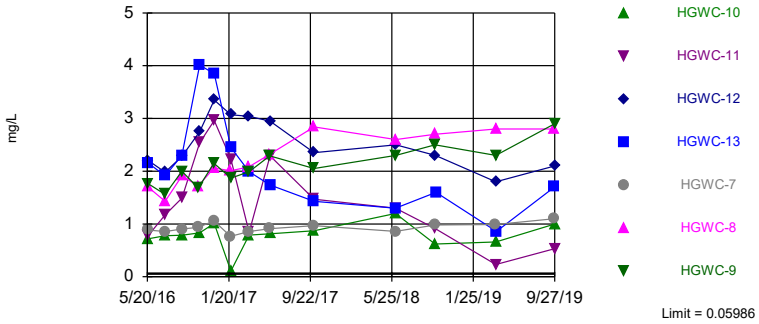
Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 10:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**HGWC-10**	**0.05986**	**n/a**	**9/27/2019**	**1**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-11**	**0.05986**	**n/a**	**9/27/2019**	**0.53**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-12**	**0.05986**	**n/a**	**9/27/2019**	**2.1**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-13**	**0.05986**	**n/a**	**9/26/2019**	**1.7**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-7**	**0.05986**	**n/a**	**9/25/2019**	**1.1**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-8**	**0.05986**	**n/a**	**9/24/2019**	**2.8**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Boron (mg/L)	**HGWC-9**	**0.05986**	**n/a**	**9/27/2019**	**2.9**	**Yes**	**39**	**5.128**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Calcium (mg/L)	**HGWC-10**	**138**	**n/a**	**9/27/2019**	**157**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	HGWC-11	138	n/a	9/27/2019	113	No	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-12**	**138**	**n/a**	**9/27/2019**	**153**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**HGWC-13**	**138**	**n/a**	**9/26/2019**	**195**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	HGWC-7	138	n/a	9/25/2019	105	No	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-8	138	n/a	9/24/2019	113	No	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Calcium (mg/L)	**HGWC-9**	**138**	**n/a**	**9/27/2019**	**175**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-10**	**20.3**	**n/a**	**9/27/2019**	**49.9**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-11**	**20.3**	**n/a**	**9/27/2019**	**27.9**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-12**	**20.3**	**n/a**	**9/27/2019**	**81**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-13**	**20.3**	**n/a**	**9/26/2019**	**109**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-7**	**20.3**	**n/a**	**9/25/2019**	**49.8**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-8**	**20.3**	**n/a**	**9/24/2019**	**60.2**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**HGWC-9**	**20.3**	**n/a**	**9/27/2019**	**126**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	HGWC-10	0.2336	n/a	9/27/2019	0.17	No	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	**HGWC-11**	**0.2336**	**n/a**	**9/27/2019**	**0.42**	**Yes**	**45**	**31.11**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Fluoride (mg/L)	HGWC-12	0.2336	n/a	9/27/2019	0.26	No	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	**HGWC-13**	**0.2336**	**n/a**	**9/26/2019**	**0.64**	**Yes**	**45**	**31.11**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Fluoride (mg/L)	HGWC-7	0.2336	n/a	9/25/2019	0.1	No	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	**HGWC-8**	**0.2336**	**n/a**	**9/24/2019**	**0.49**	**Yes**	**45**	**31.11**	**sqrt(x)**	**0.001075**	**Param Inter 1 of 2**
Fluoride (mg/L)	HGWC-9	0.2336	n/a	9/27/2019	0.26	No	45	31.11	sqrt(x)	0.001075	Param Inter 1 of 2
pH (s.u.)	HGWC-10	7.47	4.9	9/27/2019	6.64	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-11	7.47	4.9	9/27/2019	5.75	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-12	7.47	4.9	9/27/2019	7.07	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-13	7.47	4.9	9/26/2019	6.94	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-7	7.47	4.9	9/25/2019	7.11	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-8	7.47	4.9	9/24/2019	6.95	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-9	7.47	4.9	9/27/2019	7.01	No	45	0	n/a	0.001861	NP Inter (normality) 1 of 2
Sulfate (mg/L)	**HGWC-10**	**84.3**	**n/a**	**9/27/2019**	**181**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	HGWC-11	84.3	n/a	9/27/2019	5ND	No	39	0	n/a	0.001187	NP Inter (normality) 1 of 2
Sulfate (mg/L)	**HGWC-12**	**84.3**	**n/a**	**9/27/2019**	**198**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-13**	**84.3**	**n/a**	**9/26/2019**	**444**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-7**	**84.3**	**n/a**	**9/25/2019**	**109**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-8**	**84.3**	**n/a**	**9/24/2019**	**133**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**HGWC-9**	**84.3**	**n/a**	**9/27/2019**	**214**	**Yes**	**39**	**0**	**n/a**	**0.001187**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-10**	**473.5**	**n/a**	**9/27/2019**	**624**	**Yes**	**39**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-11**	**473.5**	**n/a**	**9/27/2019**	**528**	**Yes**	**39**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-12**	**473.5**	**n/a**	**9/27/2019**	**653**	**Yes**	**39**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-13**	**473.5**	**n/a**	**9/26/2019**	**1010**	**Yes**	**39**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**HGWC-7**	**473.5**	**n/a**	**9/25/2019**	**503**	**Yes**	**39**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	HGWC-8	473.5	n/a	9/24/2019	457	No	39	0	No	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**HGWC-9**	**473.5**	**n/a**	**9/27/2019**	**730**	**Yes**	**39**	**0**	**No**	**0.001075**	**Param Inter 1 of 2**

Exceeds Limit: HGWC-10, HGWC-11, HGWC-12, HGWC-13, HGWC-7, HGWC-8, HGWC-9

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.148, Std. Dev.=0.04892, n=39, 5.128% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9412, critical = 0.917. Kappa = 1.976 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

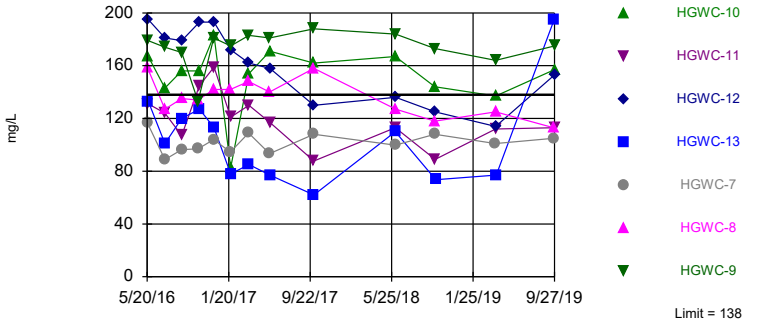
Constituent: Boron Analysis Run 12/16/2019 9:58 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Exceeds Limit: HGWC-10, HGWC-12, HGWC-13, HGWC-9

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 39 background values. Annual per-constituent alpha = 0.01649. Individual comparison alpha = 0.001187 (1 of 2). Comparing 7 points to limit.

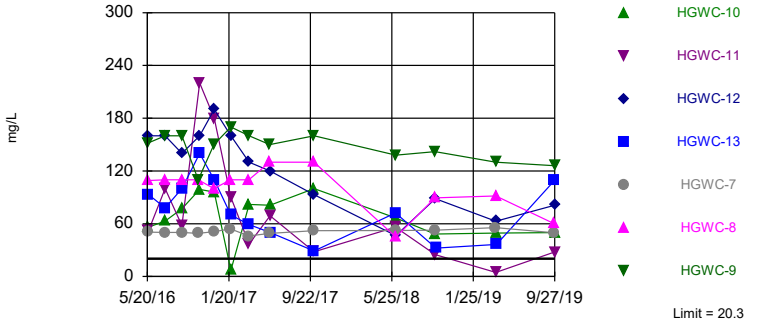
Constituent: Calcium Analysis Run 12/16/2019 9:58 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Exceeds Limit: HGWC-10, HGWC-11, HGWC-12, HGWC-13, HGWC-7, HGWC-8, HGWC-9

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 39 background values. Annual per-constituent alpha = 0.01649. Individual comparison alpha = 0.001187 (1 of 2). Comparing 7 points to limit.

Constituent: Chloride Analysis Run 12/16/2019 9:58 AM

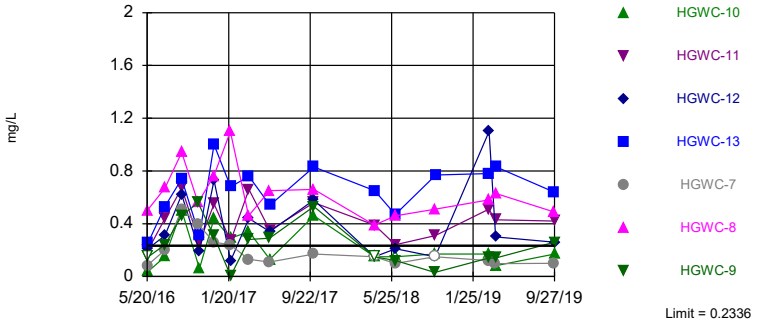
Hammond AP Client: Georgia Power Data: Hammond AP-1

Hollow symbols indicate censored values.

Exceeds Limit: HGWC-11, HGWC-13, HGWC-8

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.2693, Std. Dev.=0.1094, n=45, 31.11% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9485, critical = 0.926. Kappa = 1.956 (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 12/16/2019 9:58 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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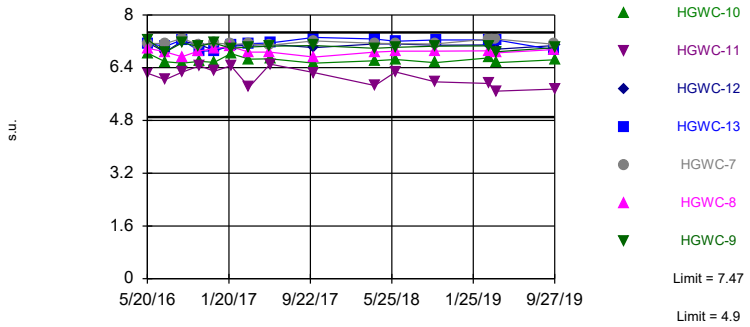
Within Limits

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 45 background values. Annual per-constituent alpha = 0.02589. Individual comparison alpha = 0.001861 (1 of 2). Comparing 7 points to limit.

Constituent: pH Analysis Run 12/16/2019 9:58 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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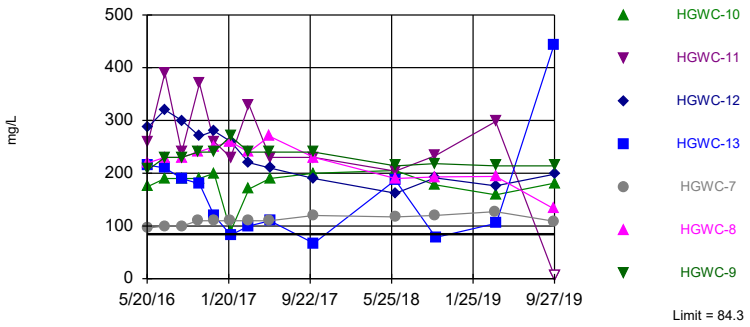
Hollow symbols indicate censored values.

Exceeds Limit: HGWC-10, HGWC-12, HGWC-13, HGWC-7, HGWC-8, HGWC-9

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 39 background values. Annual per-constituent alpha = 0.01649. Individual comparison alpha = 0.001187 (1 of 2). Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 12/16/2019 9:58 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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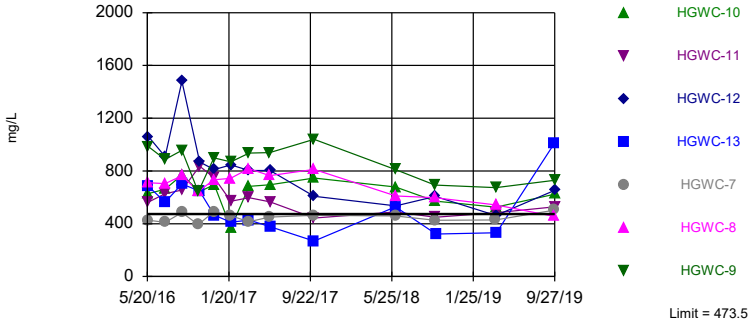
Exceeds Limit: HGWC-10, HGWC-11, HGWC-12, HGWC-13, HGWC-7, HGWC-9

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=264.5, Std. Dev.=105.8, n=39. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9222, critical = 0.917. Kappa = 1.976 (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 12/16/2019 9:58 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Trend Test (AM 02) - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 11:45 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**HGWC-8**	**0.4228**	**63**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**HGWC-9**	**0.3149**	**57**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**HGWC-12**	**-26.18**	**-59**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**HGWC-12**	**-35.9**	**-52**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWA-3 (bg)**	**2.359**	**44**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWC-12**	**-48.43**	**-58**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**HGWC-7**	**8.074**	**46**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids (mg/L)	**HGWC-12**	**-167.3**	**-62**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Test (AM 02) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 11:45 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	-0.00007761	-2	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001938	36	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0008154	-20	-43	No	13	15.38	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-10	0.06941	18	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-11	-0.3287	-22	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-12	-0.1472	-12	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-13	-0.4379	-42	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-7	0.05012	35	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	**HGWC-8**	**0.4228**	**63**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**HGWC-9**	**0.3149**	**57**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	HGWA-1 (bg)	6.226	34	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.8743	-12	-43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	2.805	26	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-10	-2.754	-6	-43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**HGWC-12**	**-26.18**	**-59**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	HGWC-13	-14.83	-27	-43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-9	1.533	8	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	0.4947	9	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.05758	-16	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	5	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-10	-5.41	-10	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-11	-22.79	-42	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	**HGWC-12**	**-35.9**	**-52**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	HGWC-13	-21.38	-28	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-7	0.929	20	43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-8	-6.405	-17	-43	No	13	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-9	-8.397	-29	-43	No	13	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-1 (bg)	0.003862	7	53	No	15	13.33	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-2 (bg)	0	19	53	No	15	53.33	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-3 (bg)	0.009375	13	53	No	15	26.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-11	0.01818	3	53	No	15	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-12	-0.003668	-4	-53	No	15	6.667	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-13	0.06941	30	53	No	15	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-8	-0.03883	-24	-53	No	15	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-9	-0.04345	-25	-53	No	15	13.33	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.418	31	43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.285	36	43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWA-3 (bg)**	**2.359**	**44**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-10	0	1	43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWC-12**	**-48.43**	**-58**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-13	-34.65	-26	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**HGWC-7**	**8.074**	**46**	**43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	HGWC-8	-17.19	-18	-43	No	13	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-9	0	-10	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	11.04	14	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-5.334	-17	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.517	9	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-10	-18.8	-14	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-11	-68.67	-36	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	**HGWC-12**	**-167.3**	**-62**	**-43**	**Yes**	**13**	**0**	**n/a**	**n/a**	**0.01**	**NP**

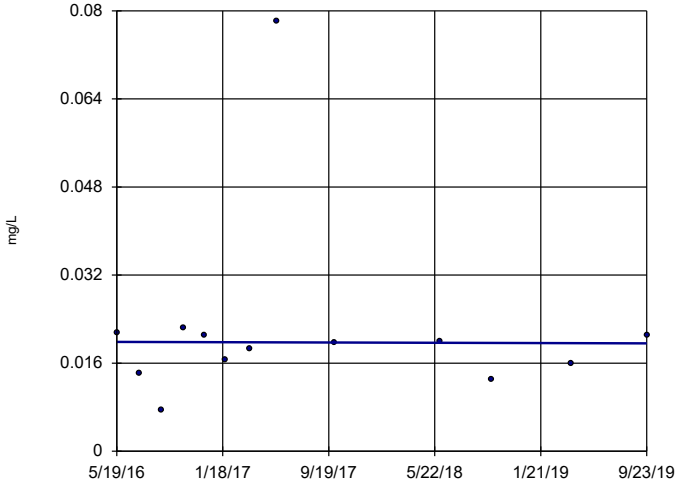
Trend Test (AM 02) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 11:45 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Total Dissolved Solids (mg/L)	HGWC-13	-106.6	-30	-43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-7	6.89	14	43	No	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-9	-60.63	-24	-43	No	13	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

HGWA-1 (bg)



n = 13

Slope = -0.00007761 units per year.

Mann-Kendall statistic = -2
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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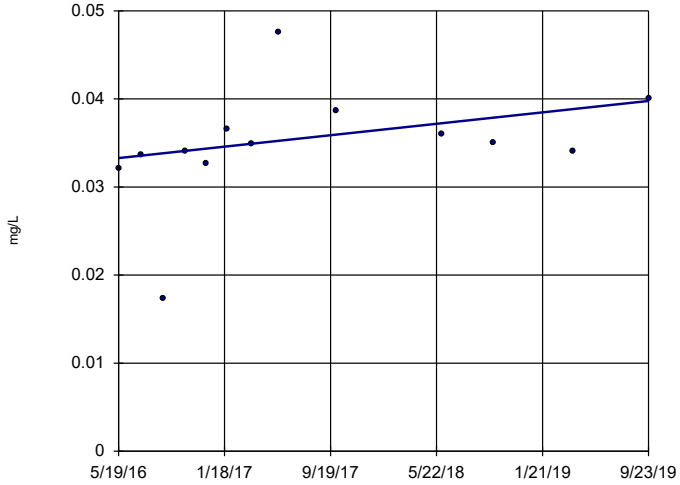
Sen's Slope Estimator

HGWA-2 (bg)



n = 13

Slope = 0.001938 units per year.

Mann-Kendall statistic = 36
critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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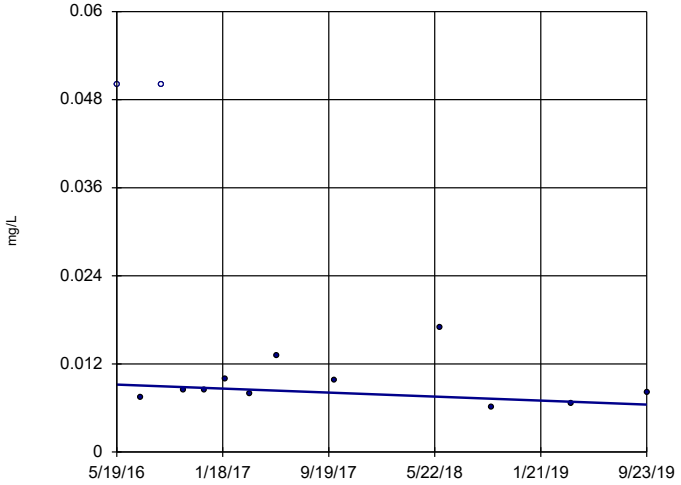
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-3 (bg)



n = 13

Slope = -0.0008154 units per year.

Mann-Kendall statistic = -20
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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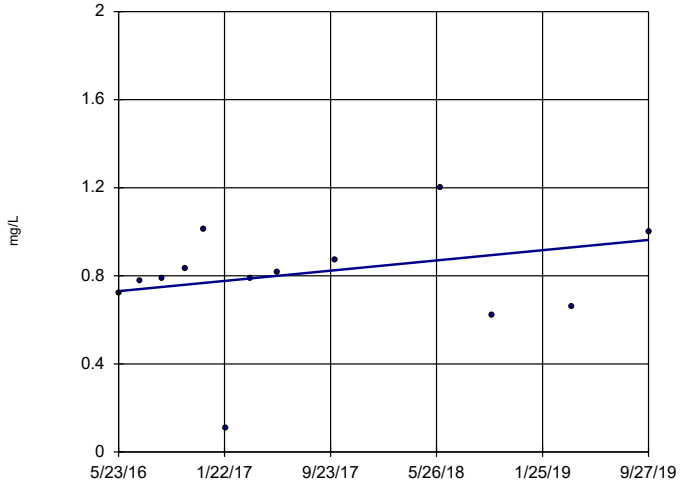
Sen's Slope Estimator

HGWC-10



n = 13

Slope = 0.06941 units per year.

Mann-Kendall statistic = 18
critical = 43

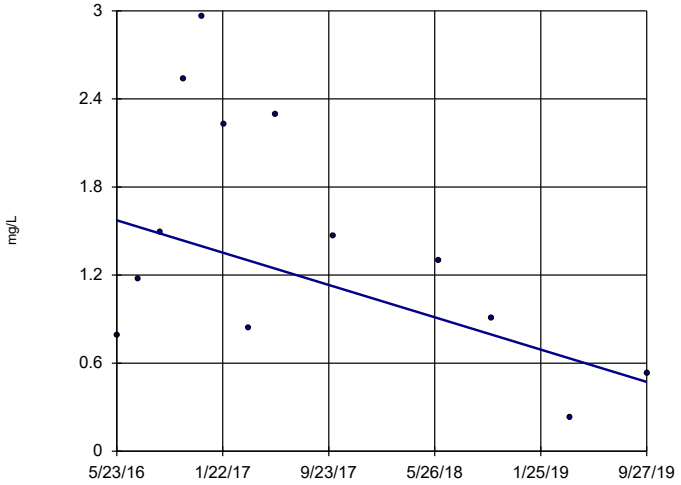
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-11



n = 13

Slope = -0.3287 units per year.

Mann-Kendall statistic = -22
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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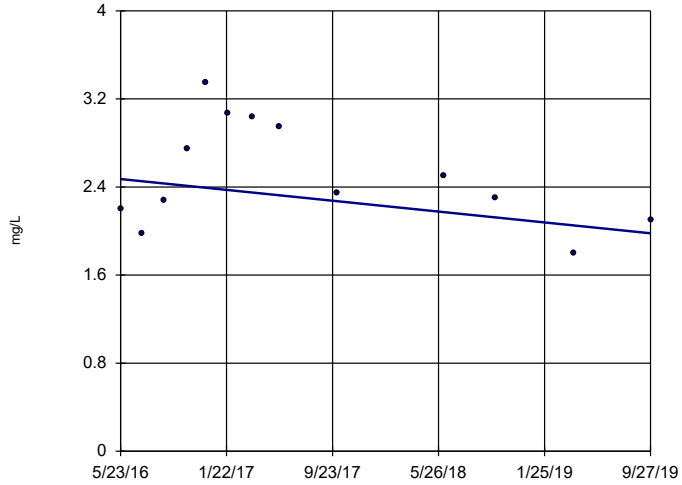
Sen's Slope Estimator

HGWC-12



n = 13

Slope = -0.1472 units per year.

Mann-Kendall statistic = -12
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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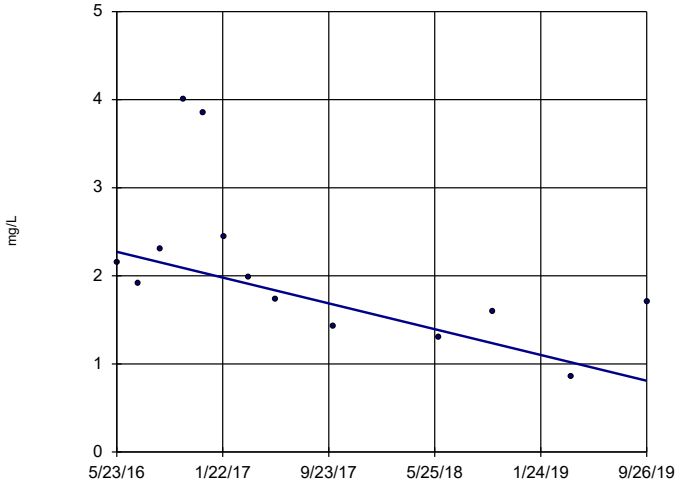
Sen's Slope Estimator

HGWC-13



n = 13

Slope = -0.4379 units per year.

Mann-Kendall statistic = -42
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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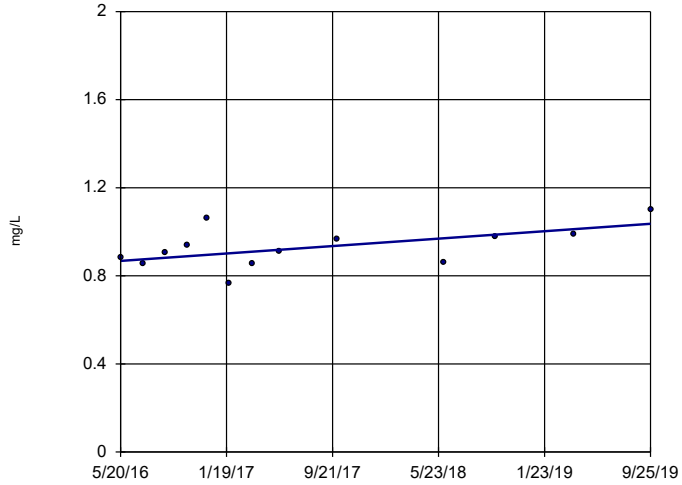
Sen's Slope Estimator

HGWC-7



n = 13

Slope = 0.05012 units per year.

Mann-Kendall statistic = 35
critical = 43

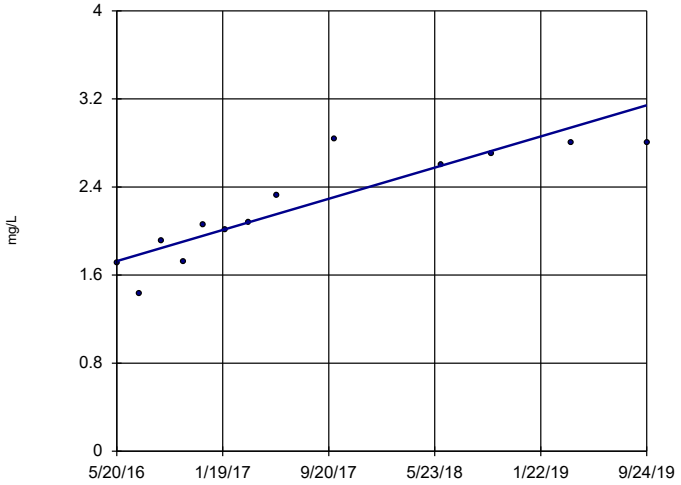
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-8



n = 13

Slope = 0.4228 units per year.

Mann-Kendall statistic = 63
critical = 43

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

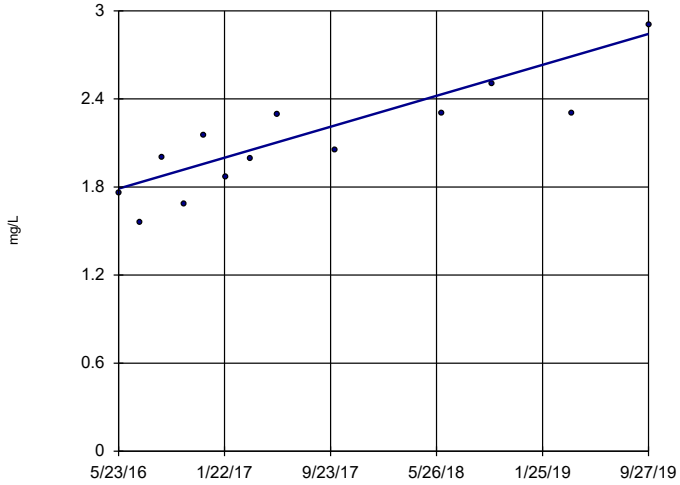
Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-9



n = 13

Slope = 0.3149 units per year.

Mann-Kendall statistic = 57
critical = 43

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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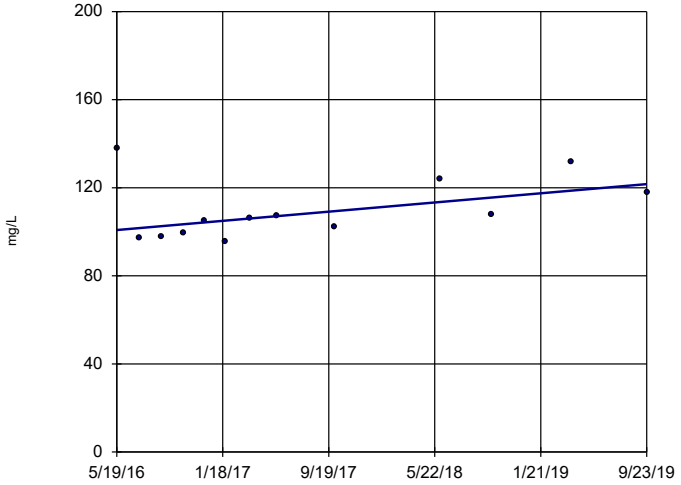
Sen's Slope Estimator

HGWA-1 (bg)



n = 13

Slope = 6.226 units per year.

Mann-Kendall statistic = 34
critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

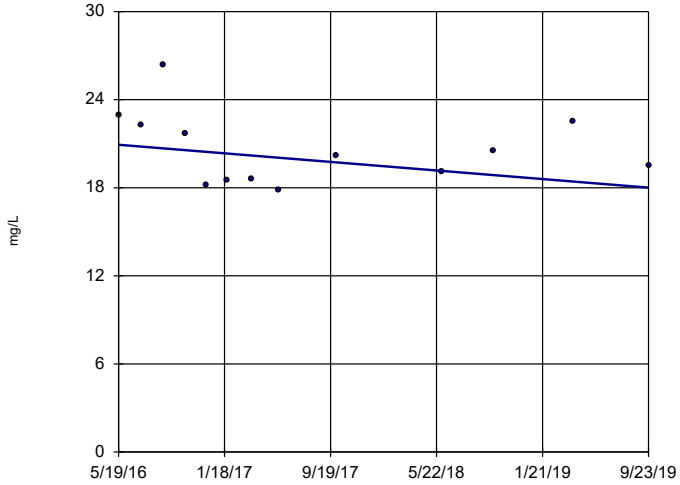
Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWA-2 (bg)



n = 13

Slope = -0.8743 units per year.

Mann-Kendall statistic = -12
critical = -43

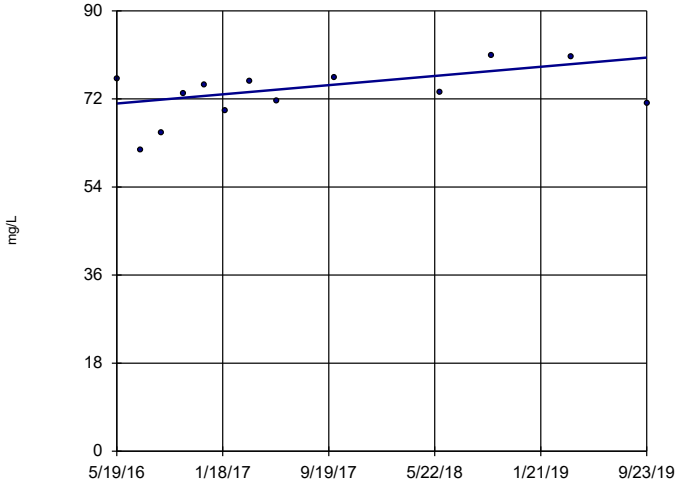
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWA-3 (bg)



n = 13

Slope = 2.805 units per year.

Mann-Kendall statistic = 26
critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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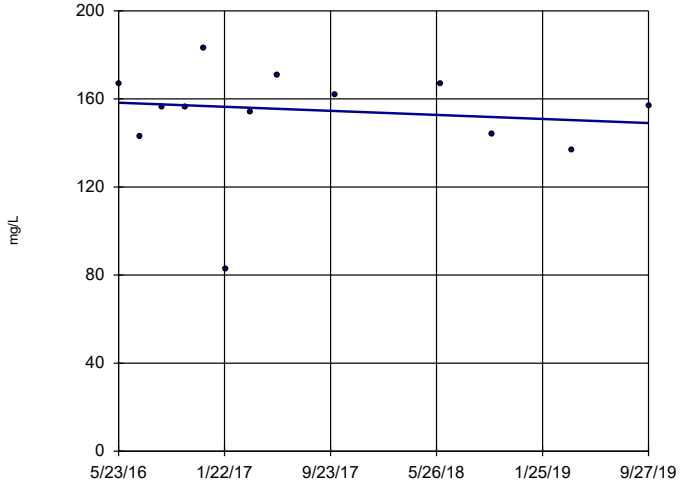
Sen's Slope Estimator

HGWC-10



n = 13

Slope = -2.754 units per year.

Mann-Kendall statistic = -6
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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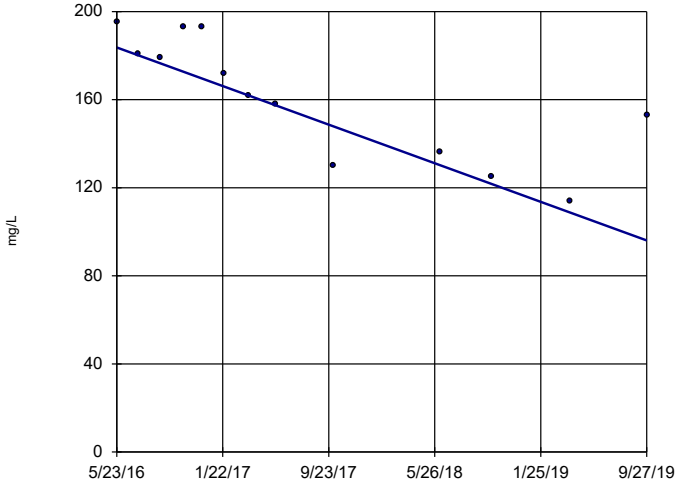
Sen's Slope Estimator

HGWC-12



n = 13

Slope = -26.18 units per year.

Mann-Kendall statistic = -59
critical = -43

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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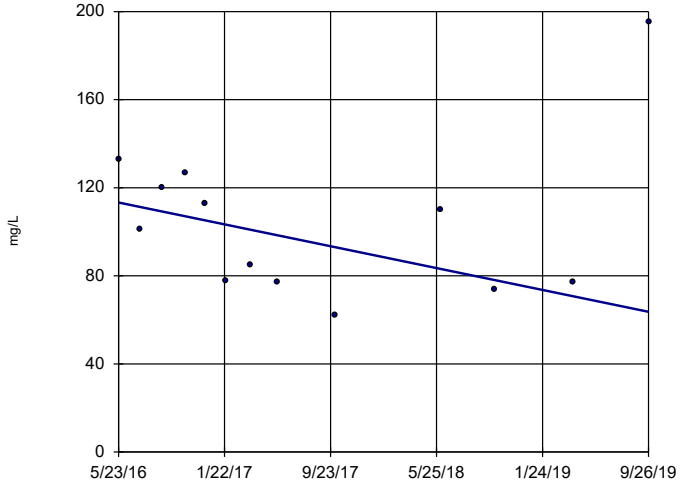
Sen's Slope Estimator

HGWC-13



n = 13

Slope = -14.83 units per year.

Mann-Kendall statistic = -27
critical = -43

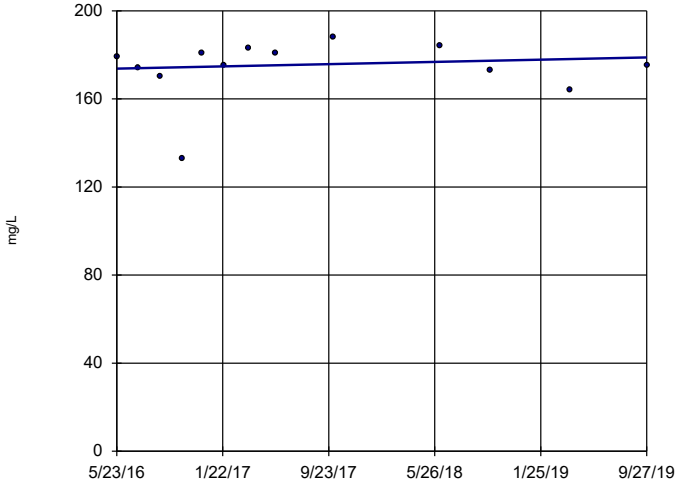
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-9



n = 13

Slope = 1.533 units per year.

Mann-Kendall statistic = 8
critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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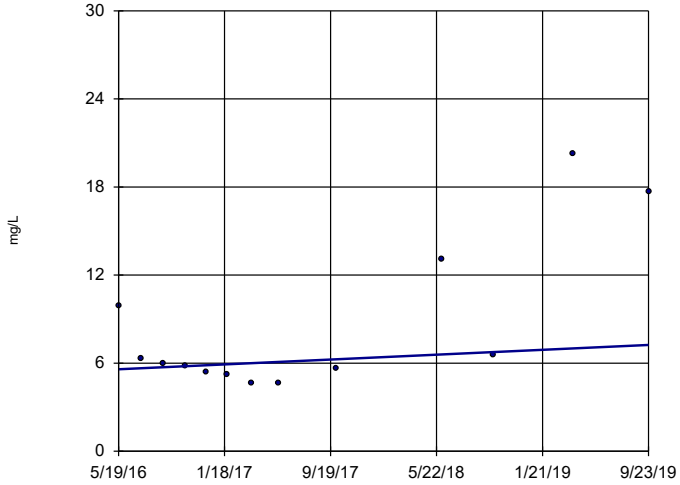
Sen's Slope Estimator

HGWA-1 (bg)



n = 13

Slope = 0.4947 units per year.

Mann-Kendall statistic = 9
critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

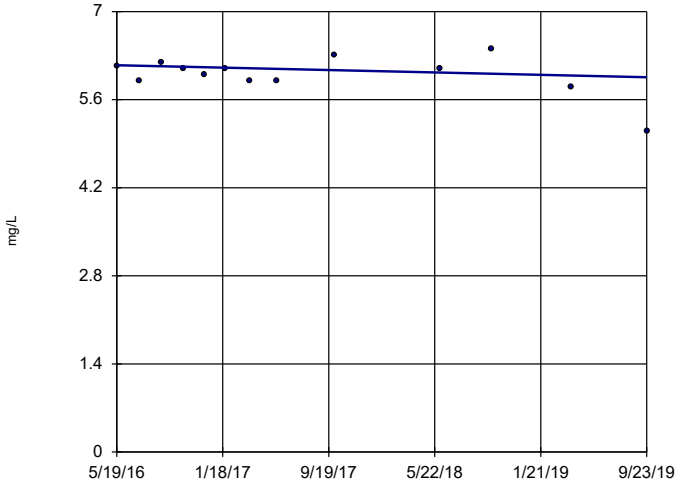
Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWA-2 (bg)



n = 13

Slope = -0.05758 units per year.

Mann-Kendall statistic = -16
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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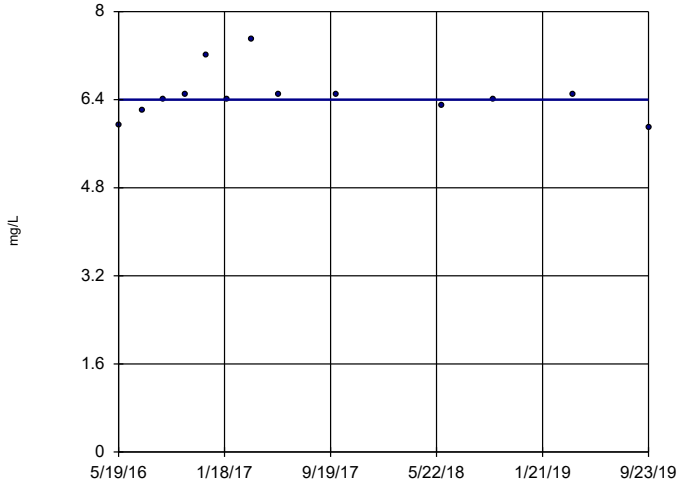
Sen's Slope Estimator

HGWA-3 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 5
critical = 43

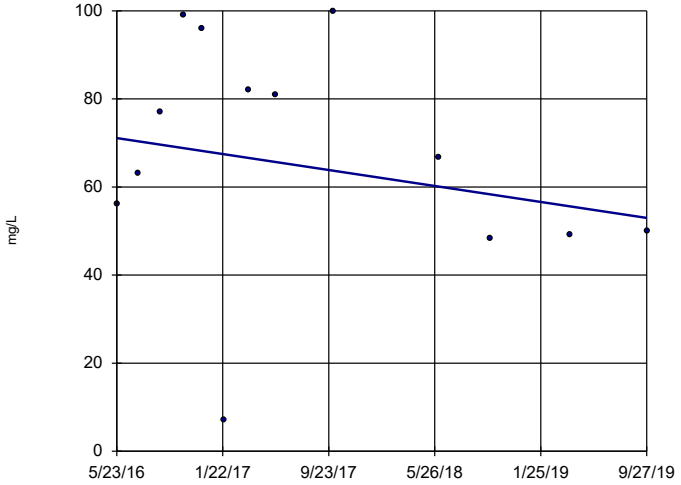
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-10



n = 13

Slope = -5.41 units per year.

Mann-Kendall statistic = -10
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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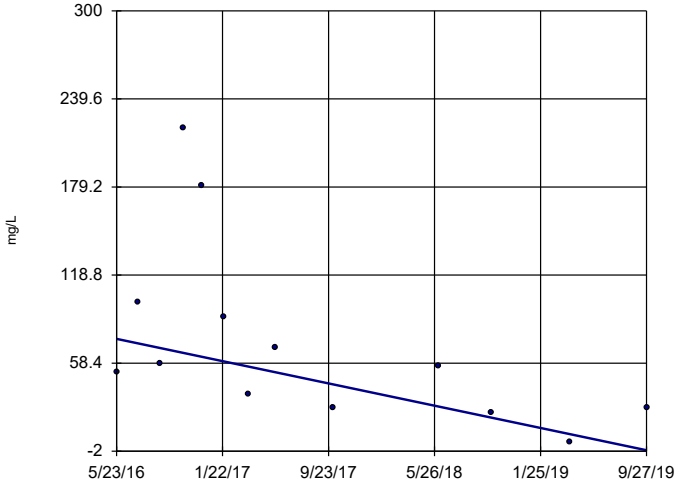
Sen's Slope Estimator

HGWC-11



n = 13

Slope = -22.79 units per year.

Mann-Kendall statistic = -42
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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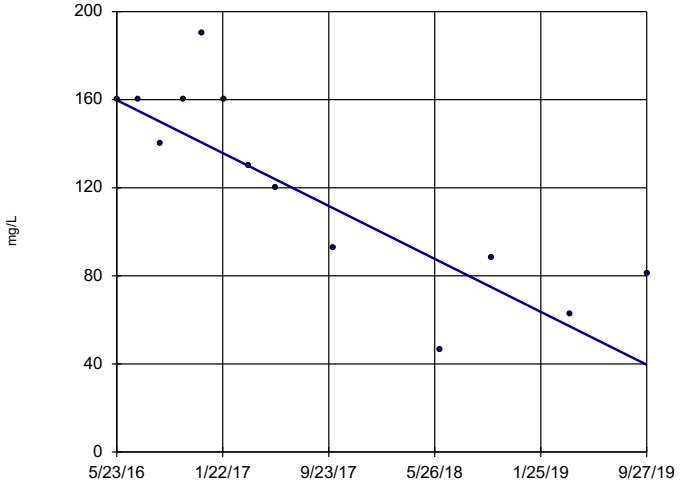
Sen's Slope Estimator

HGWC-12



n = 13

Slope = -35.9 units per year.

Mann-Kendall statistic = -52
critical = -43

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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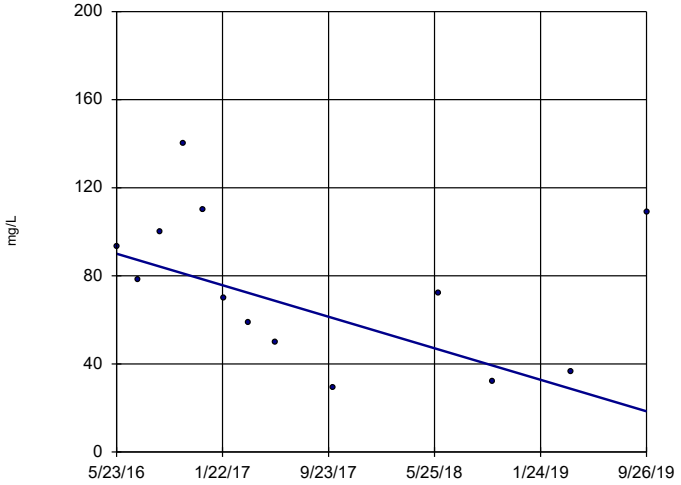
Sen's Slope Estimator

HGWC-13



n = 13

Slope = -21.38 units per year.

Mann-Kendall statistic = -28
critical = -43

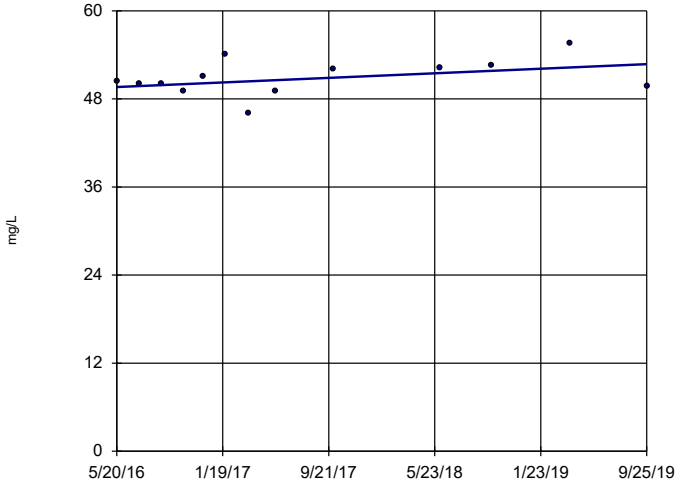
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-7



n = 13

Slope = 0.929 units per year.

Mann-Kendall statistic = 20 critical = 43

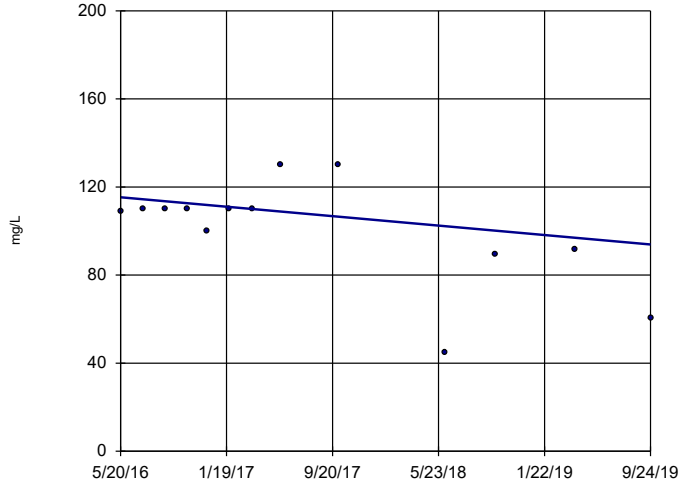
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-8



n = 13

Slope = -6.405 units per year.

Mann-Kendall statistic = -17 critical = -43

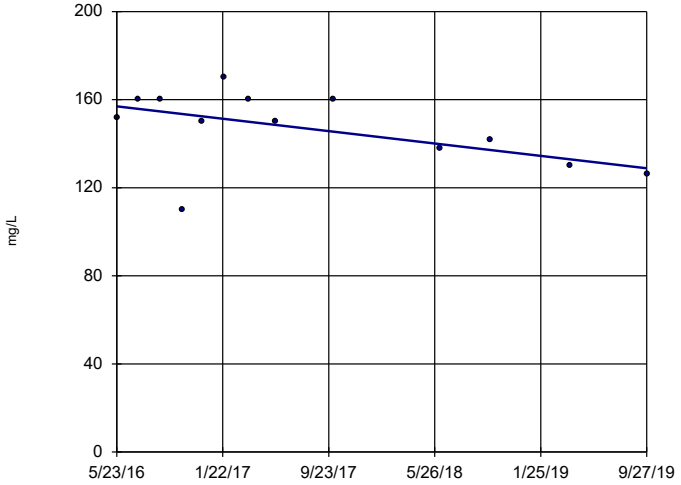
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-9



n = 13

Slope = -8.397 units per year.

Mann-Kendall statistic = -29 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

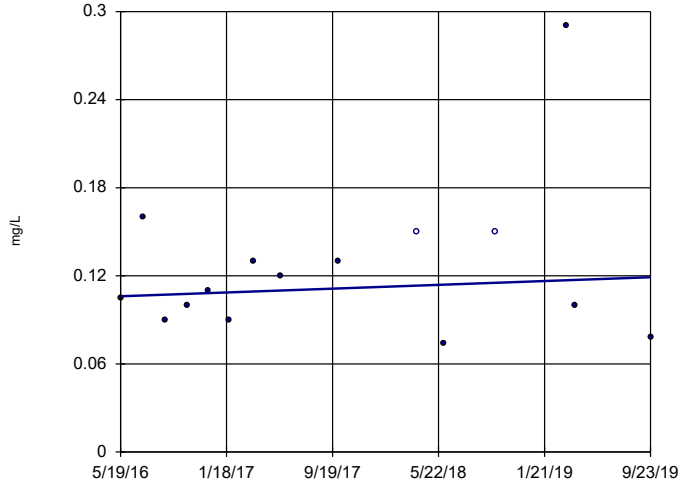
Constituent: Chloride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-1 (bg)



n = 15

Slope = 0.003862 units per year.

Mann-Kendall statistic = 7 critical = 53

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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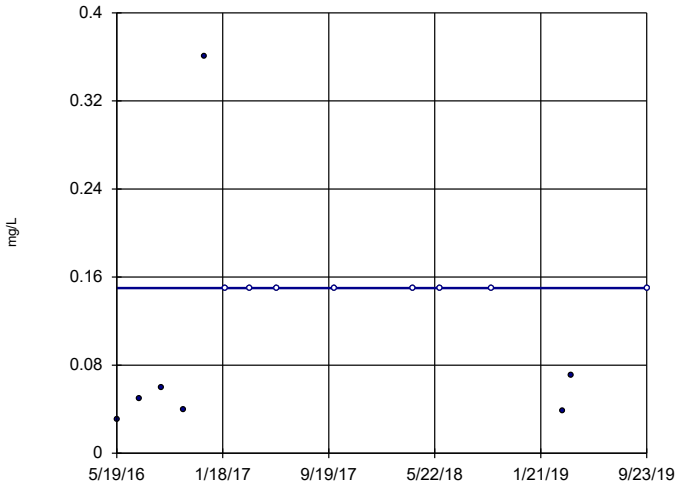
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-2 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 19
critical = 53

Trend not significant at 99% confidence level (α = 0.005 per tail).

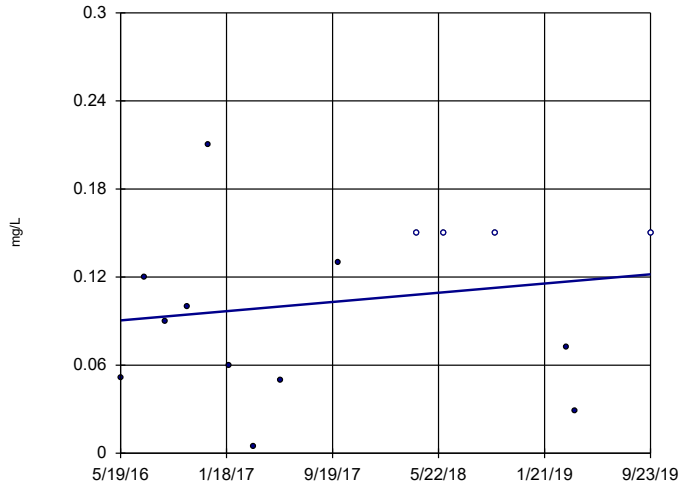
Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-3 (bg)



n = 15

Slope = 0.009375 units per year.

Mann-Kendall statistic = 13
critical = 53

Trend not significant at 99% confidence level (α = 0.005 per tail).

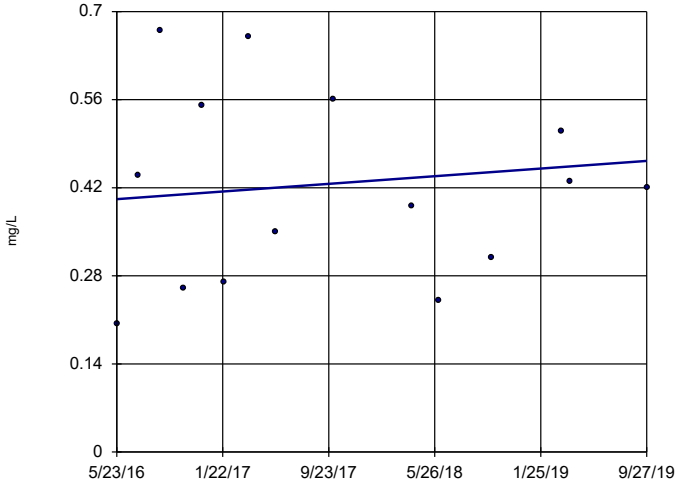
Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-11



n = 15

Slope = 0.01818 units per year.

Mann-Kendall statistic = 3
critical = 53

Trend not significant at 99% confidence level (α = 0.005 per tail).

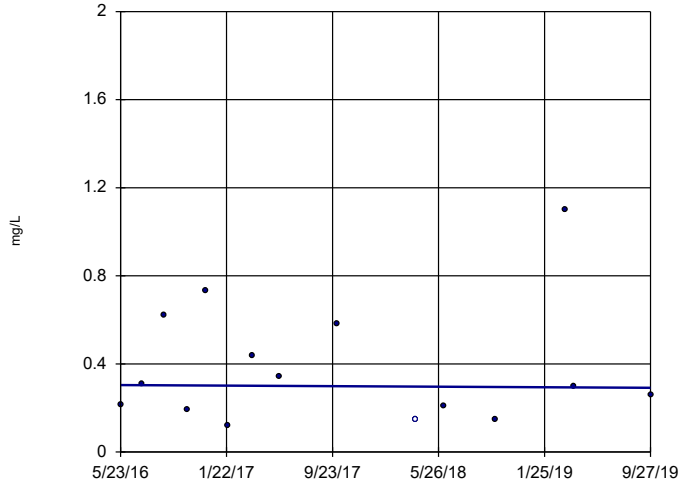
Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWC-12



n = 15

Slope = -0.003668 units per year.

Mann-Kendall statistic = -4
critical = -53

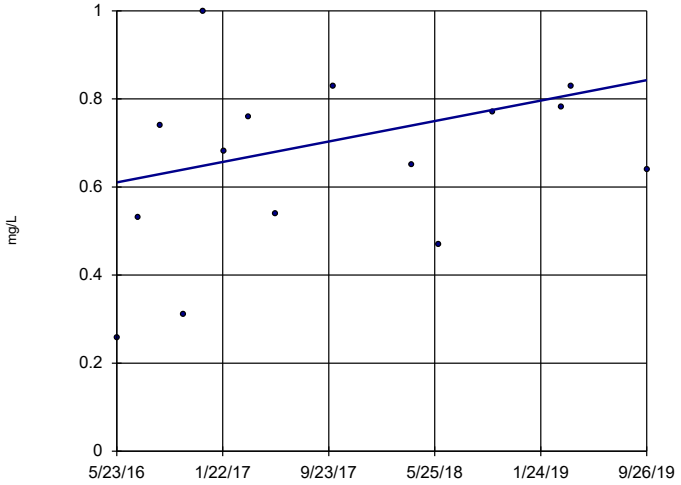
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-13



n = 15

Slope = 0.06941 units per year.

Mann-Kendall statistic = 30
critical = 53

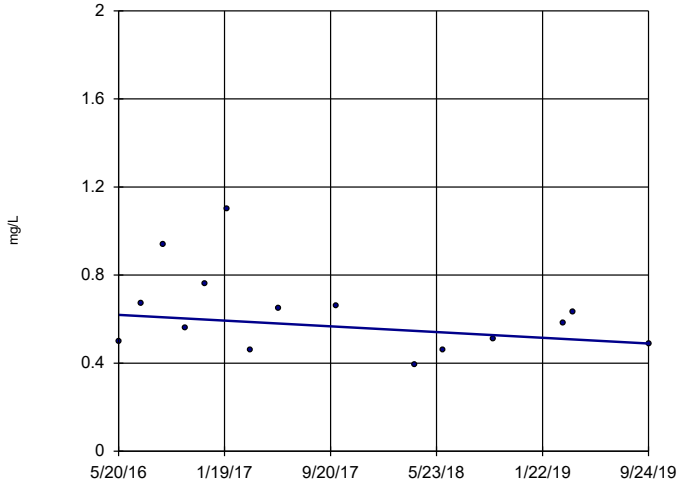
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-8



n = 15

Slope = -0.03883 units per year.

Mann-Kendall statistic = -24
critical = -53

Trend not significant at 99% confidence level (α = 0.005 per tail).

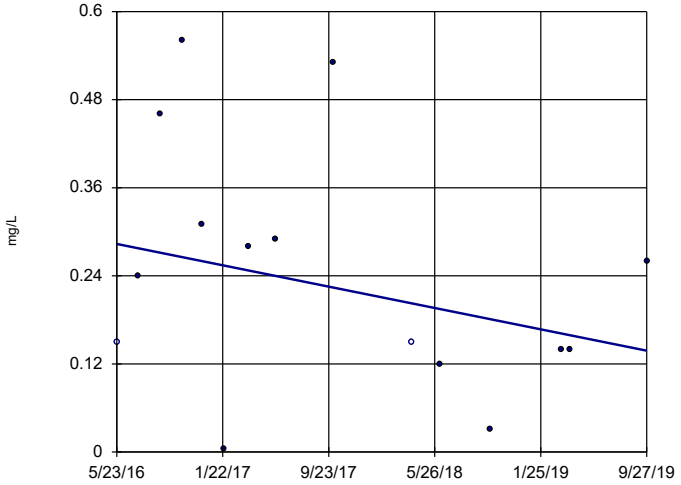
Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWC-9



n = 15

Slope = -0.04345 units per year.

Mann-Kendall statistic = -25
critical = -53

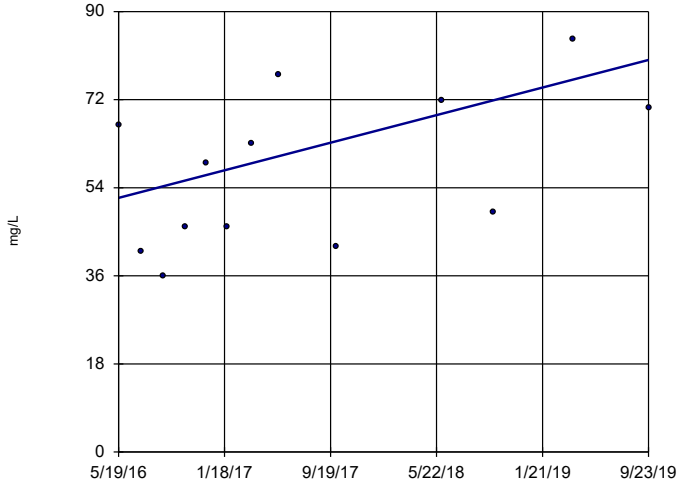
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWA-1 (bg)



n = 13

Slope = 8.418 units per year.

Mann-Kendall statistic = 31
critical = 43

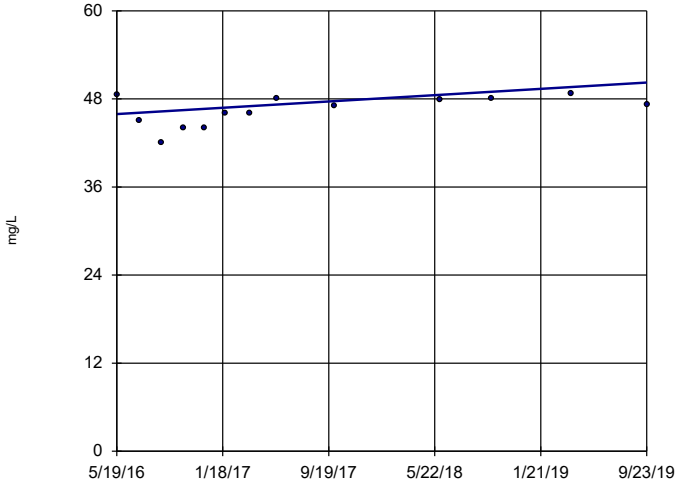
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWA-2 (bg)



n = 13

Slope = 1.285 units per year.

Mann-Kendall statistic = 36 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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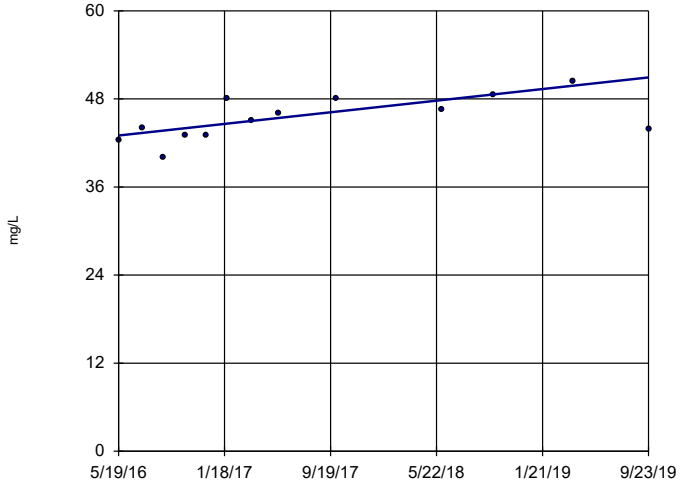
Sen's Slope Estimator

HGWA-3 (bg)



n = 13

Slope = 2.359 units per year.

Mann-Kendall statistic = 44 critical = 43

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

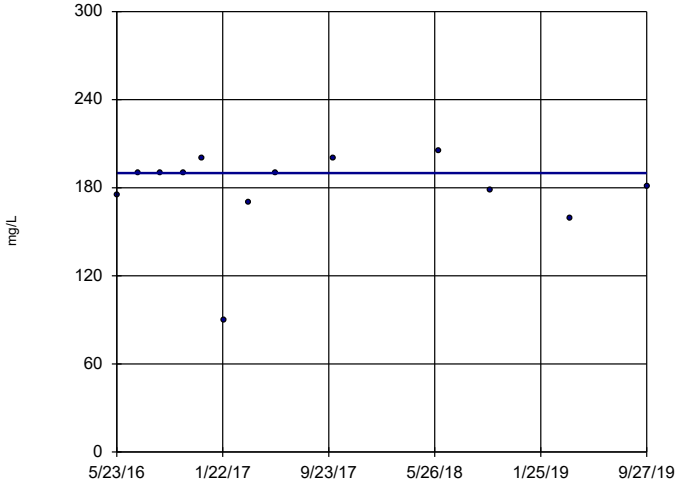
Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-10



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 1 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

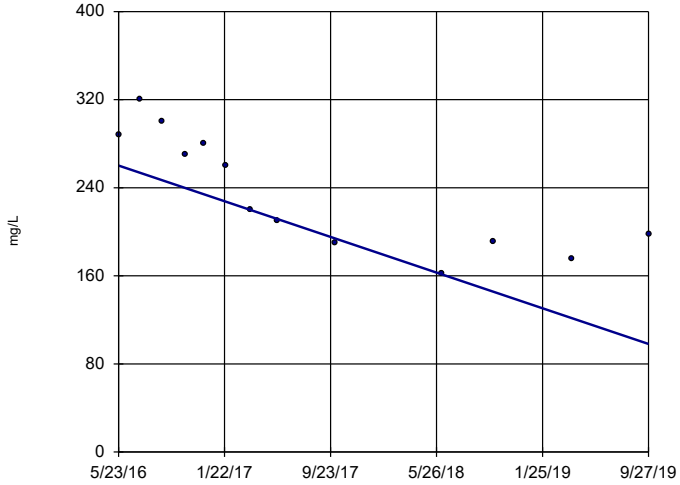
Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-12



n = 13

Slope = -48.43 units per year.

Mann-Kendall statistic = -58 critical = -43

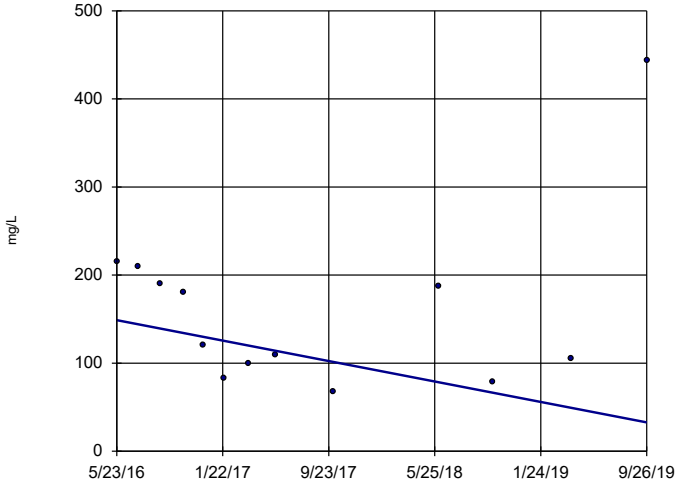
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-13



n = 13

Slope = -34.65 units per year.

Mann-Kendall statistic = -26
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

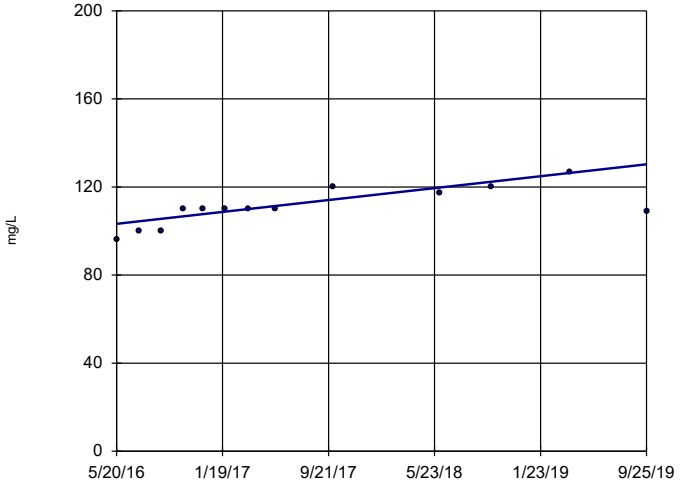
Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-7



n = 13

Slope = 8.074 units per year.

Mann-Kendall statistic = 46
critical = 43

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

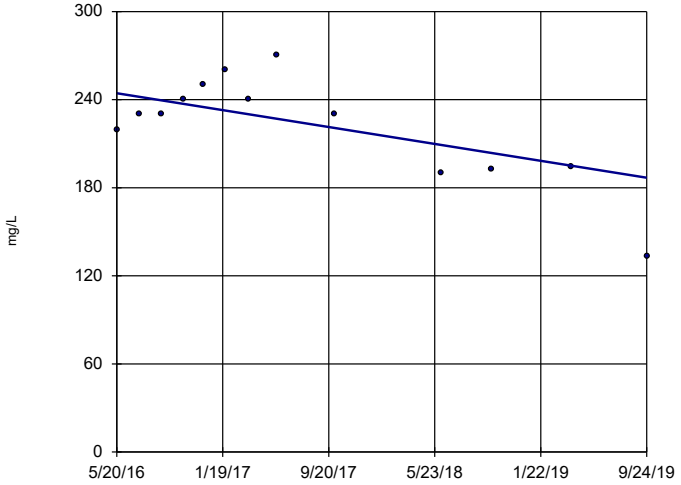
Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-8



n = 13

Slope = -17.19 units per year.

Mann-Kendall statistic = -18
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

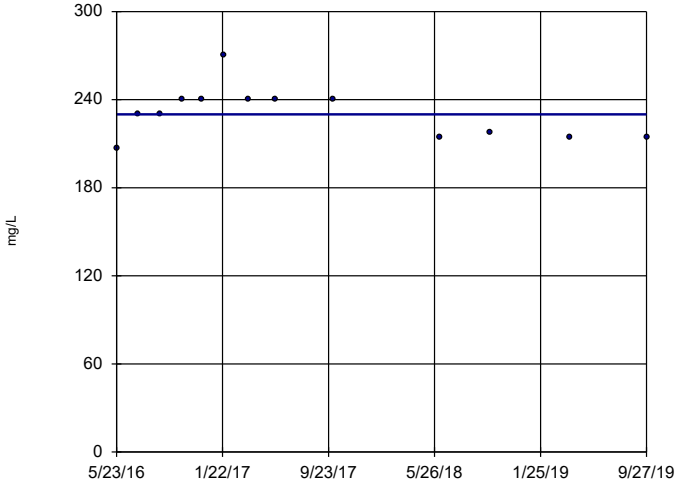
Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-9



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = -10
critical = -43

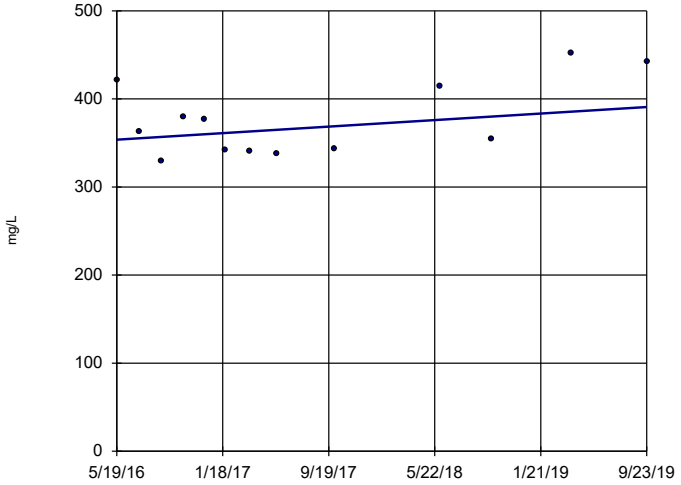
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWA-1 (bg)



n = 13

Slope = 11.04 units per year.

Mann-Kendall statistic = 14 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

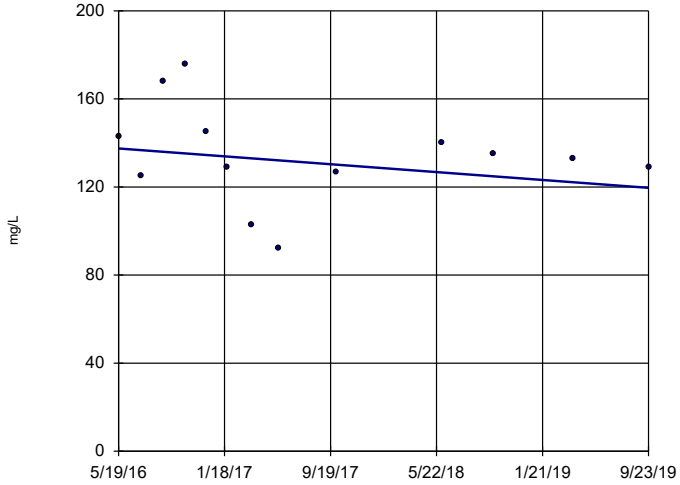
Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWA-2 (bg)



n = 13

Slope = -5.334 units per year.

Mann-Kendall statistic = -17 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

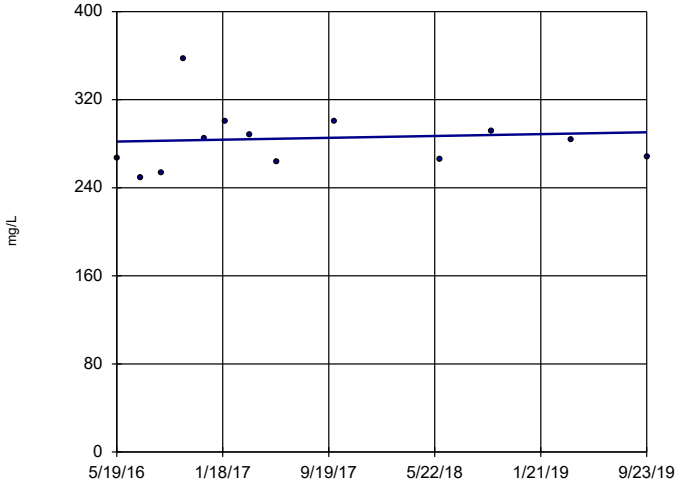
Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWA-3 (bg)



n = 13

Slope = 2.517 units per year.

Mann-Kendall statistic = 9 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

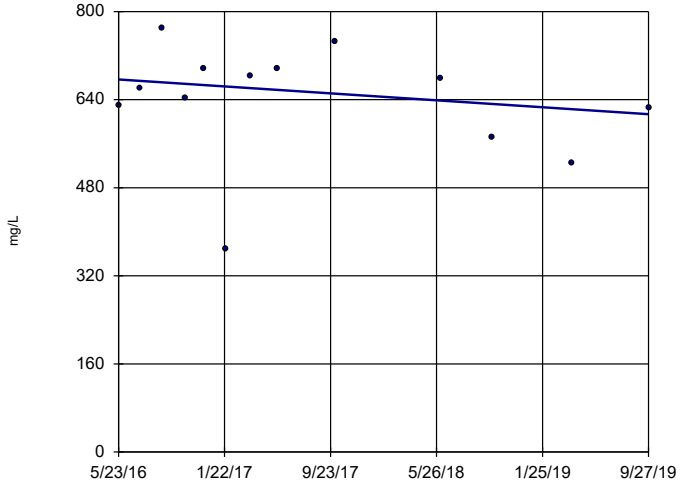
Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sen's Slope Estimator

HGWC-10



n = 13

Slope = -18.8 units per year.

Mann-Kendall statistic = -14 critical = -43

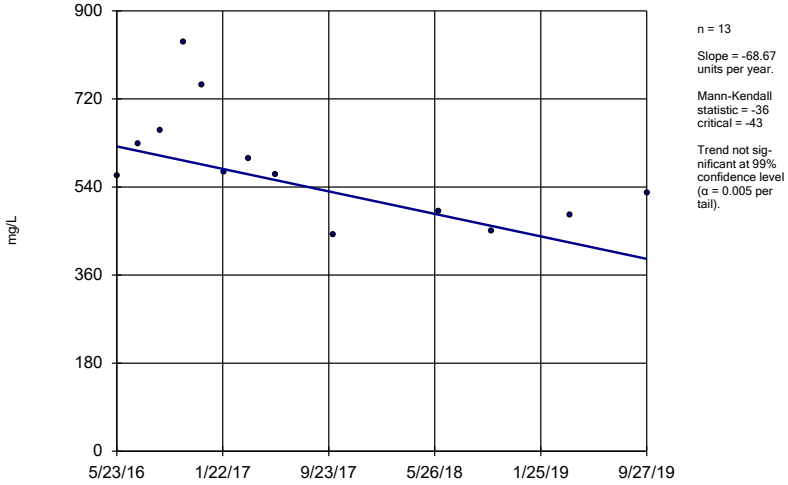
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-11



n = 13

Slope = -68.67 units per year.

Mann-Kendall statistic = -36
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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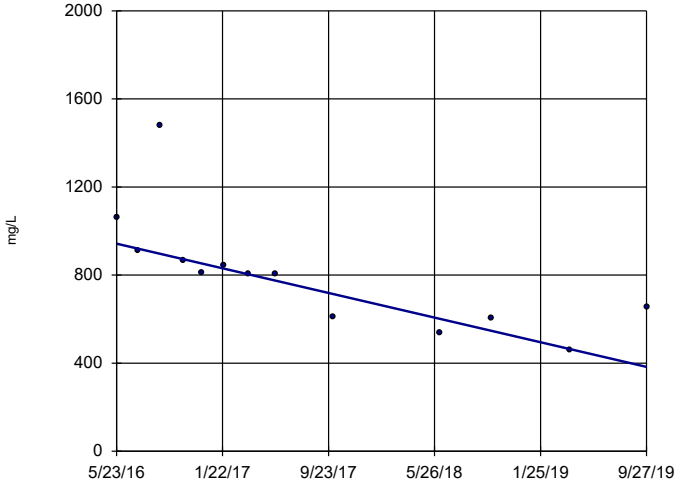
Sen's Slope Estimator

HGWC-12



n = 13

Slope = -167.3 units per year.

Mann-Kendall statistic = -62
critical = -43

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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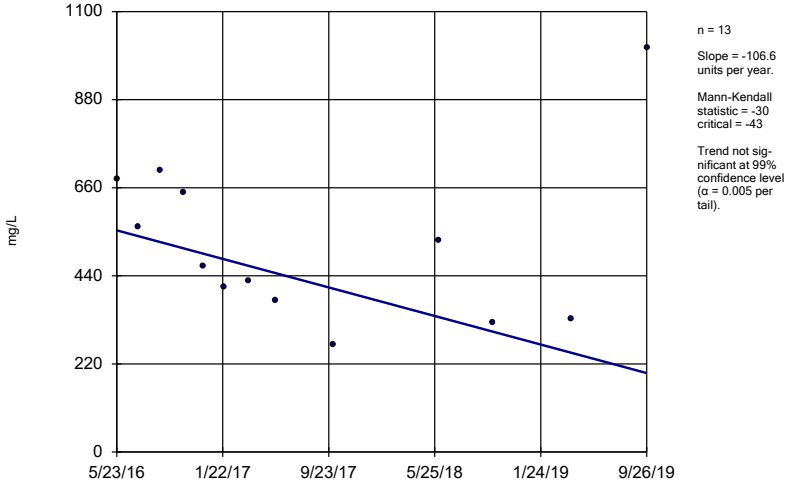
Sen's Slope Estimator

HGWC-13



n = 13

Slope = -106.6 units per year.

Mann-Kendall statistic = -30
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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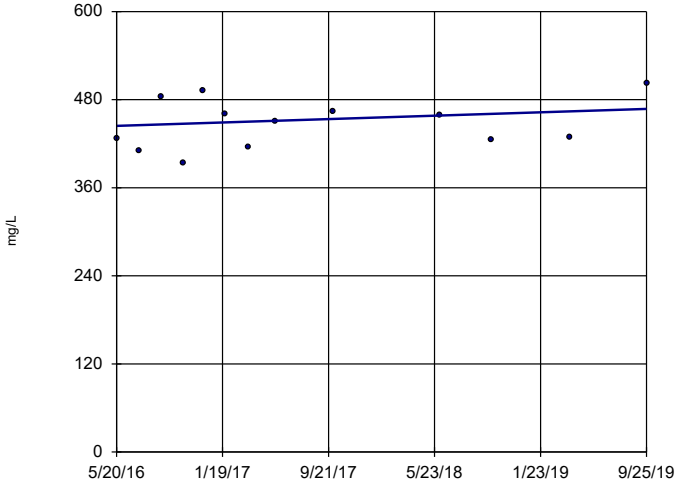
Sen's Slope Estimator

HGWC-7



n = 13

Slope = 6.89 units per year.

Mann-Kendall statistic = 14
critical = 43

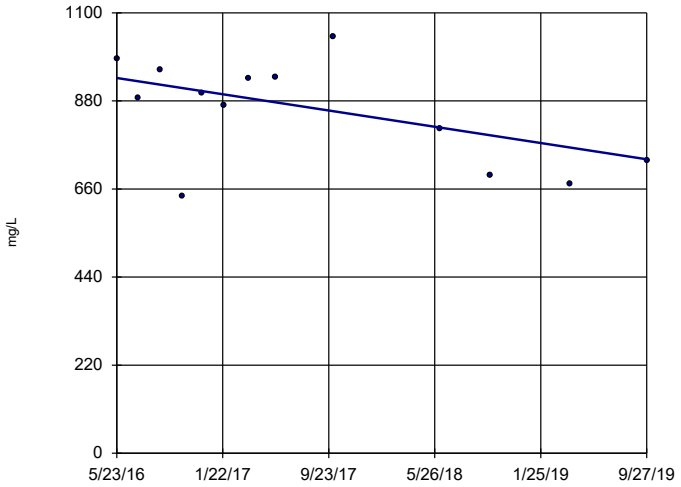
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sen's Slope Estimator

HGWC-9



n = 13

Slope = -60.63 units per year.

Mann-Kendall statistic = -24
critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids Analysis Run 12/16/2019 11:44 AM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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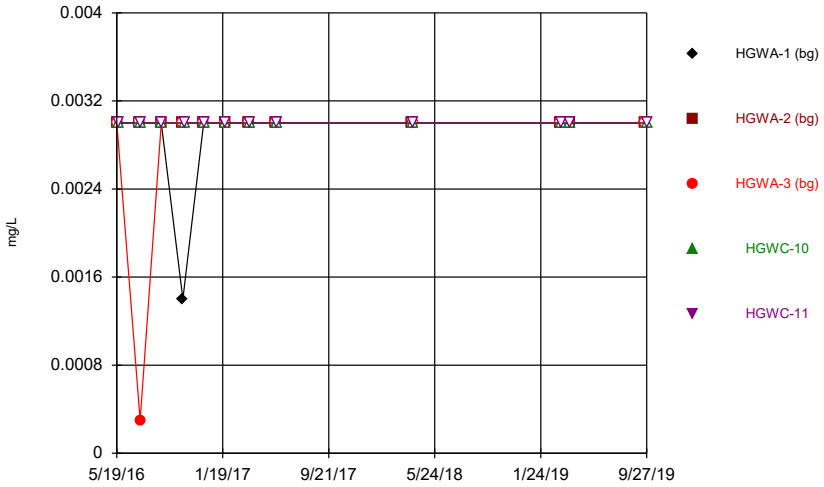
Hollow symbols indicate censored values.

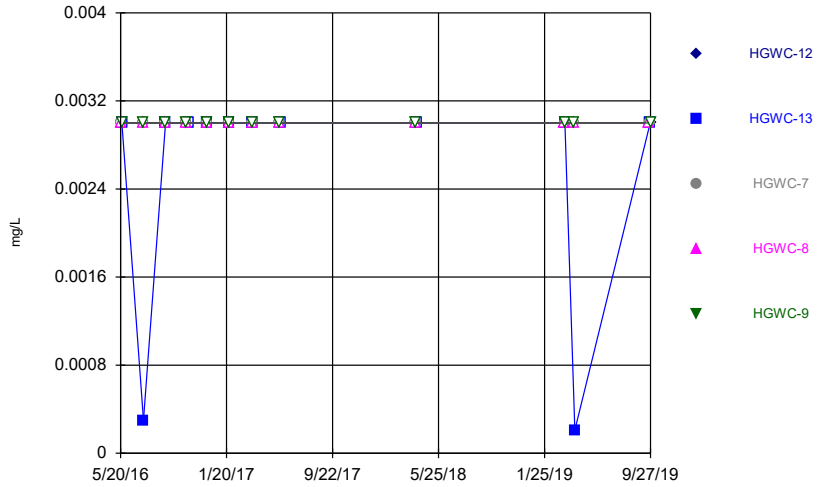
Time Series



Constituent: Antimony Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

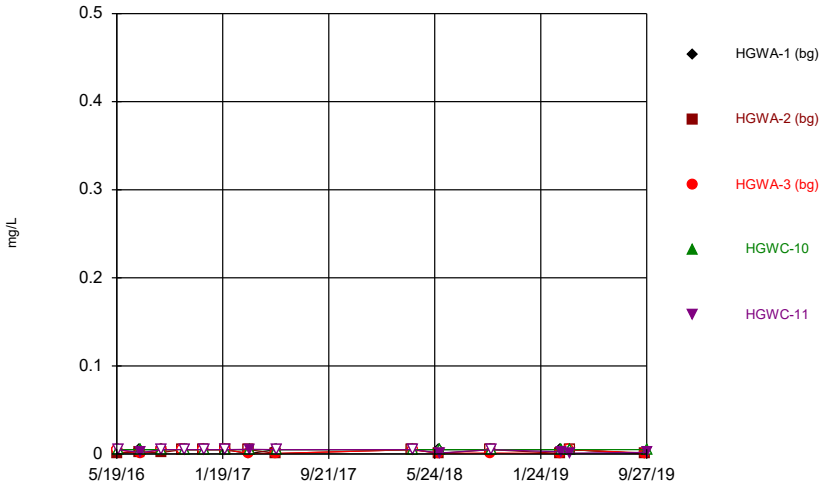
Time Series



Constituent: Antimony Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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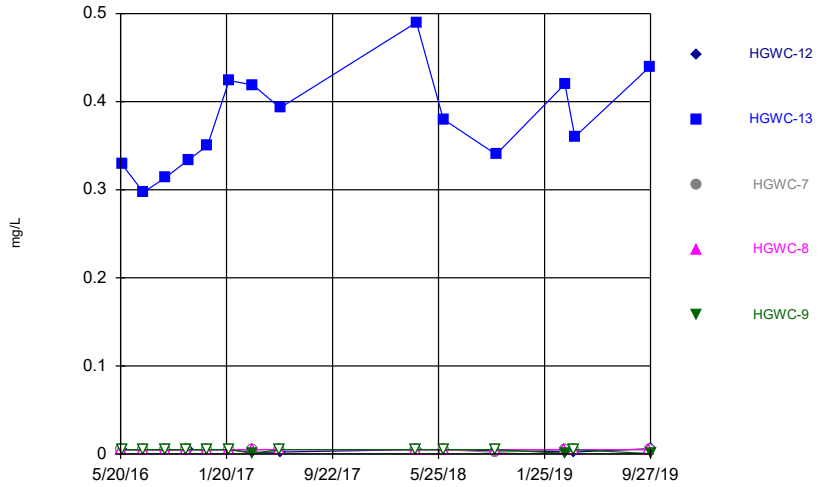
Hollow symbols indicate censored values.

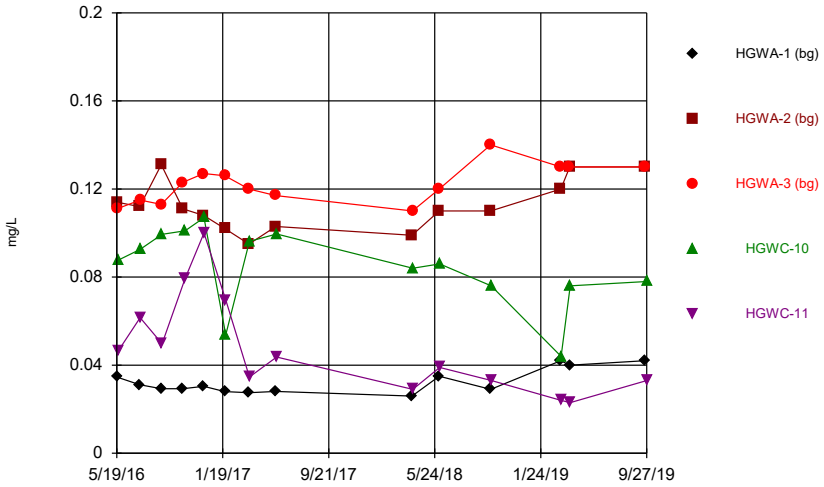
Time Series



Constituent: Arsenic Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series

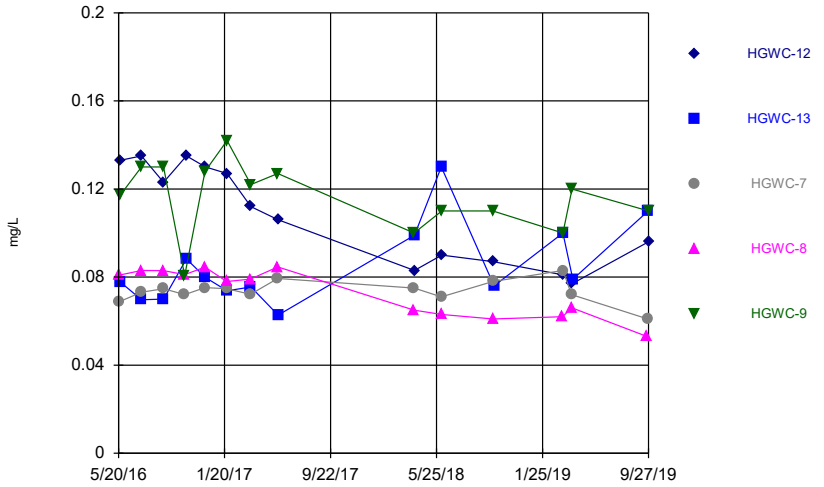


Constituent: Barium Analysis Run 12/16/2019 3:04 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series

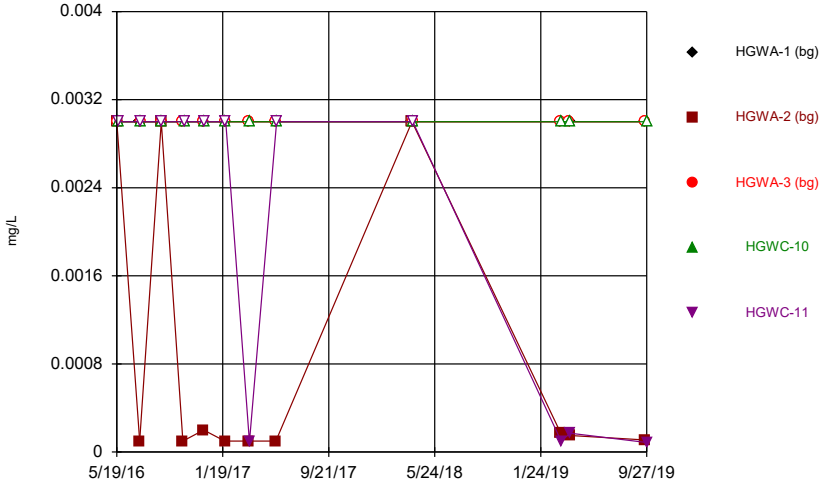


Constituent: Barium Analysis Run 12/16/2019 3:04 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium Analysis Run 12/16/2019 3:04 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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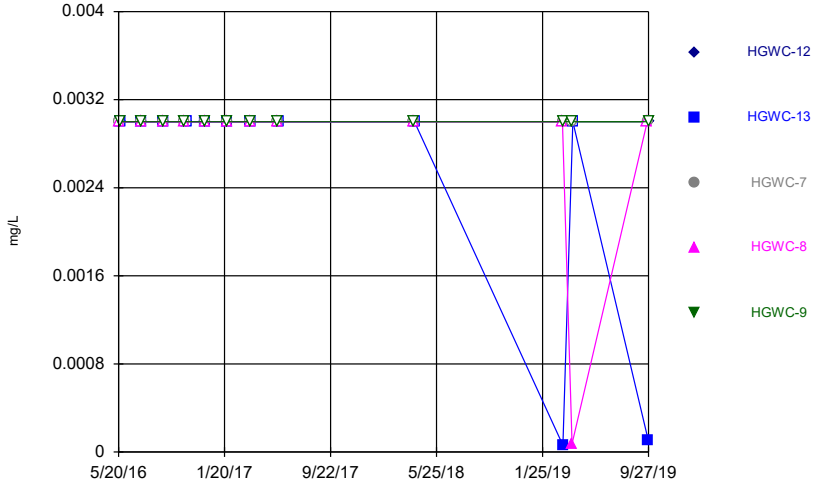
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium Analysis Run 12/16/2019 3:04 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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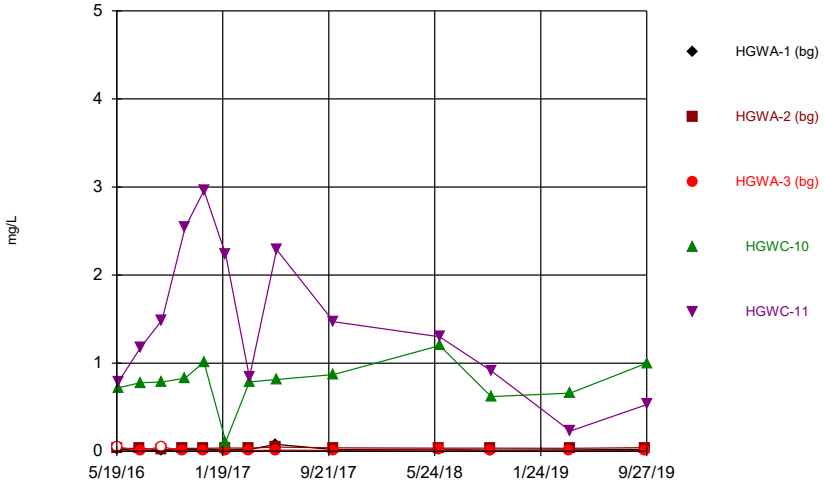
Hollow symbols indicate censored values.

Time Series



Constituent: Boron Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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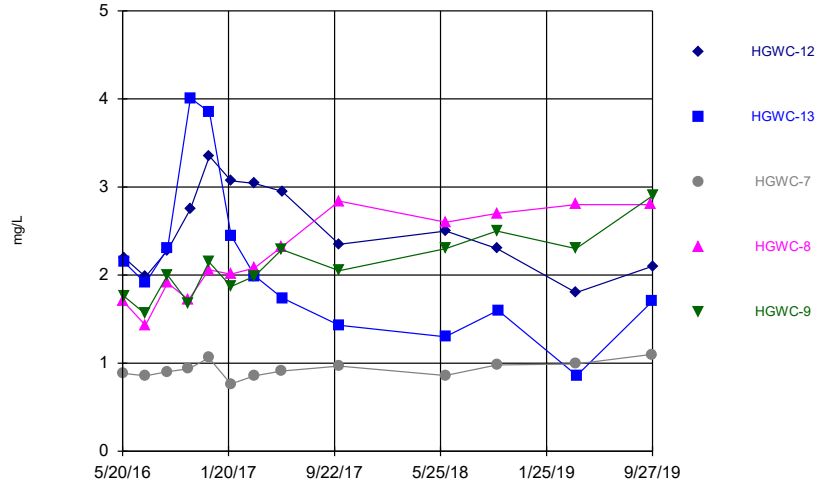
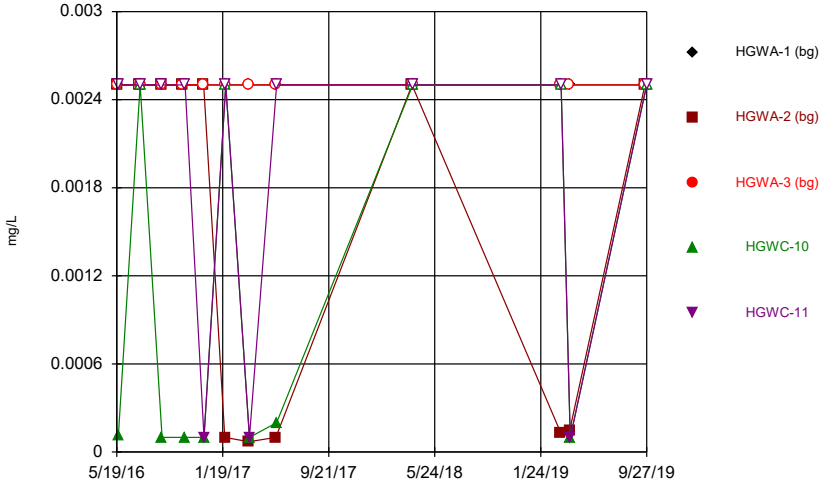
Time Series



Constituent: Boron Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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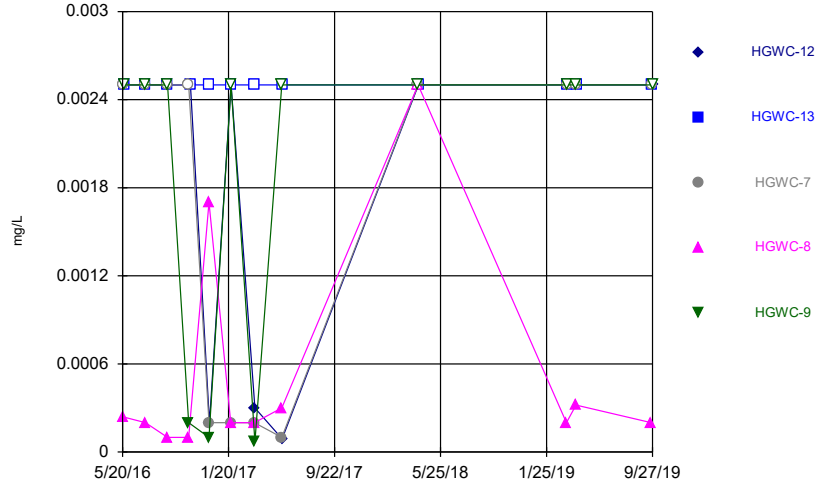
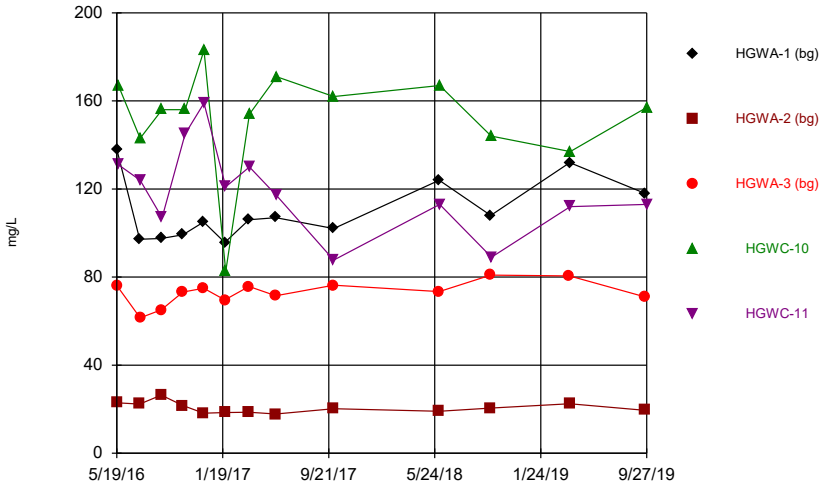
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Time Series



Constituent: Calcium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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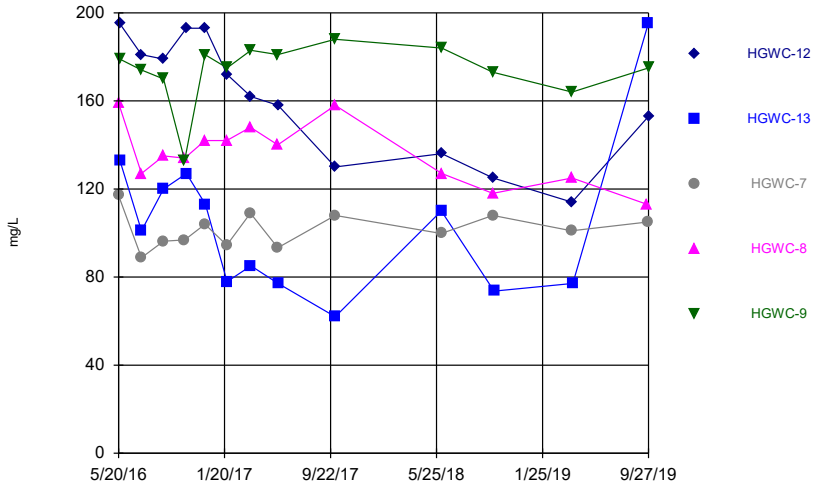
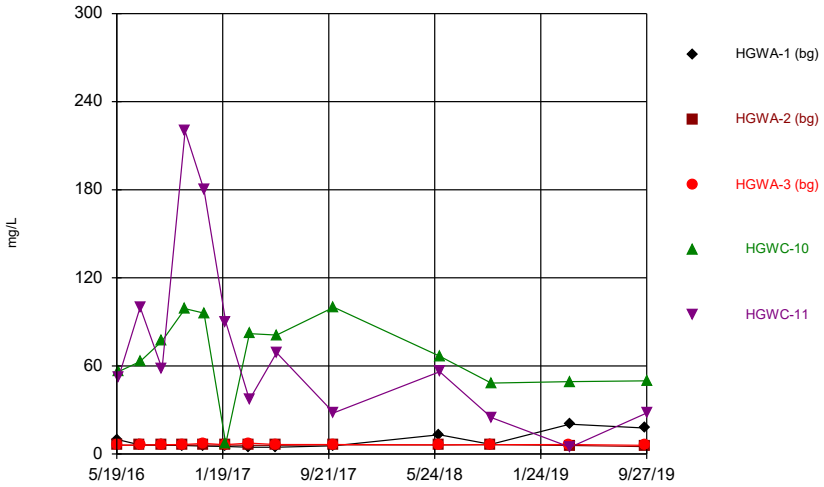
Time Series



Constituent: Calcium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Chloride Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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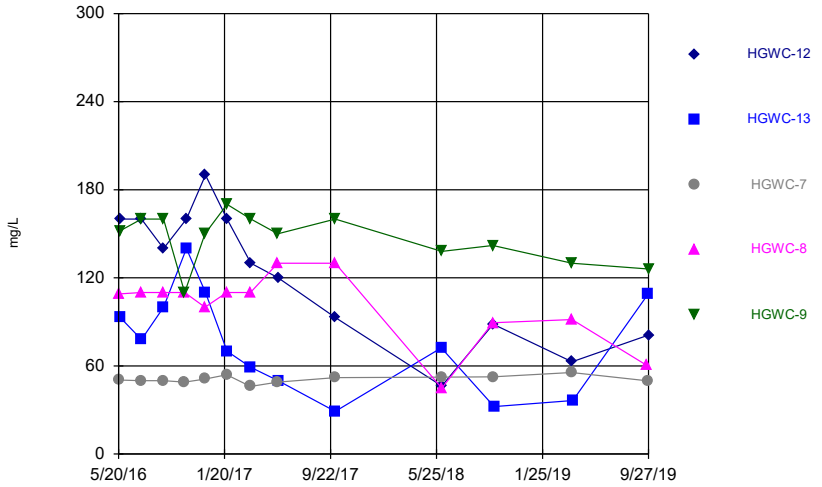
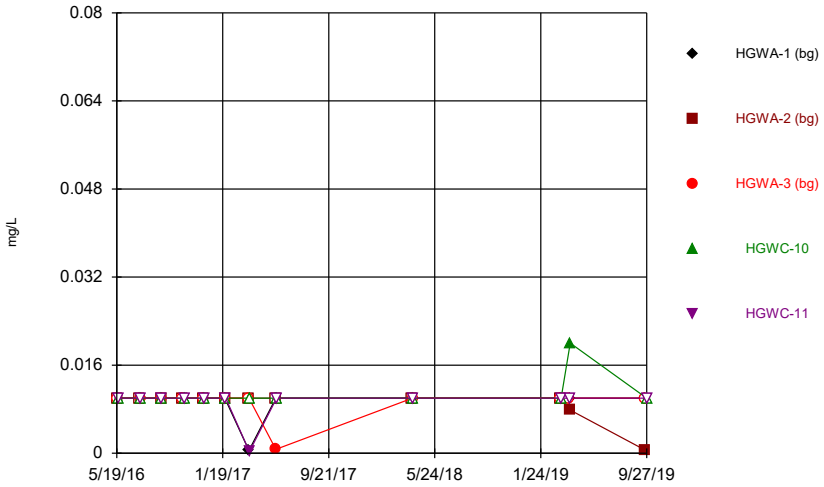
Time Series



Constituent: Chloride Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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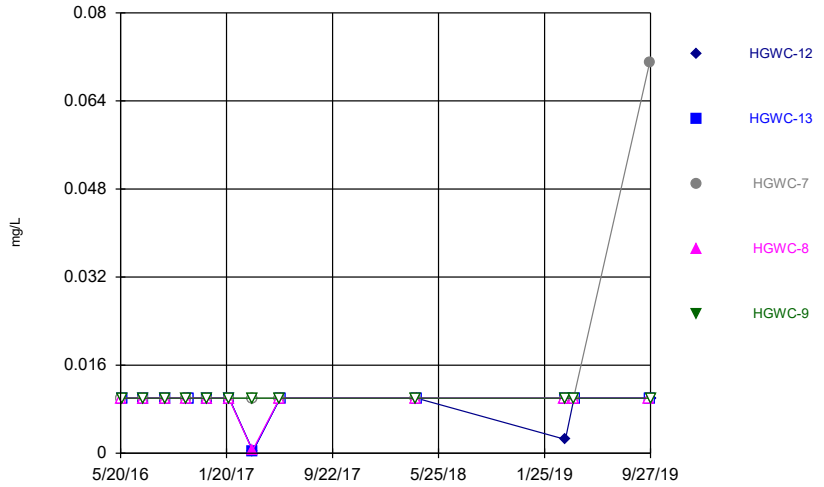
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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Hollow symbols indicate censored values.

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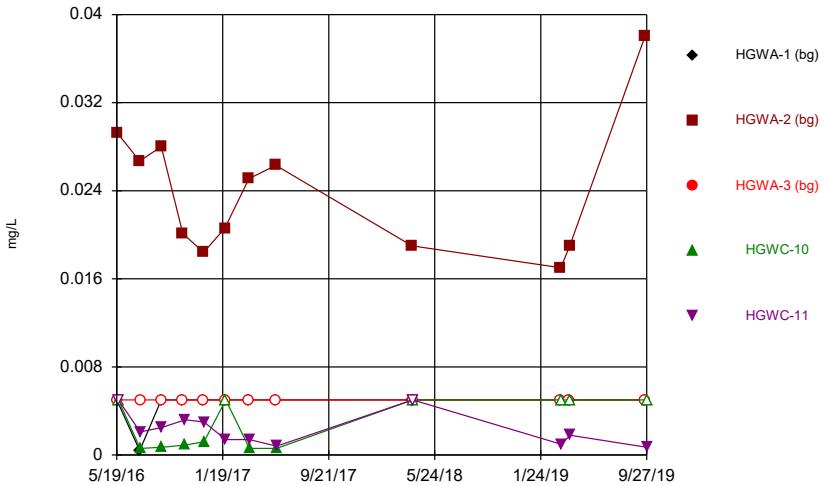
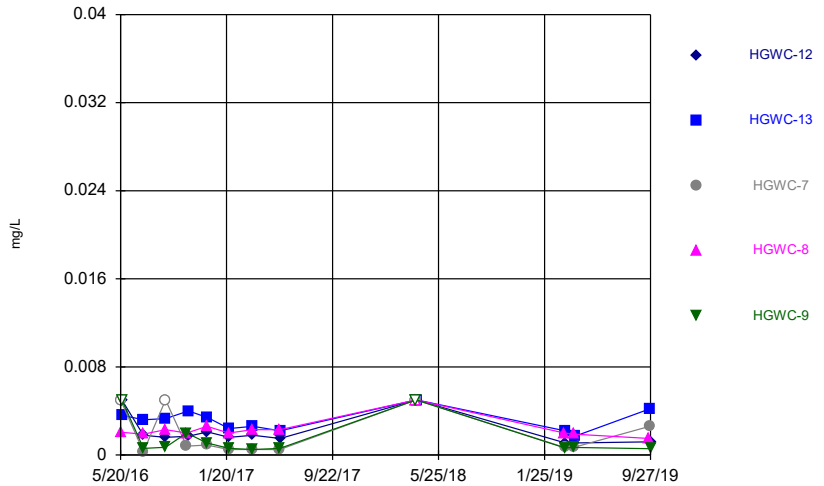


Constituent: Cobalt Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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Hollow symbols indicate censored values.

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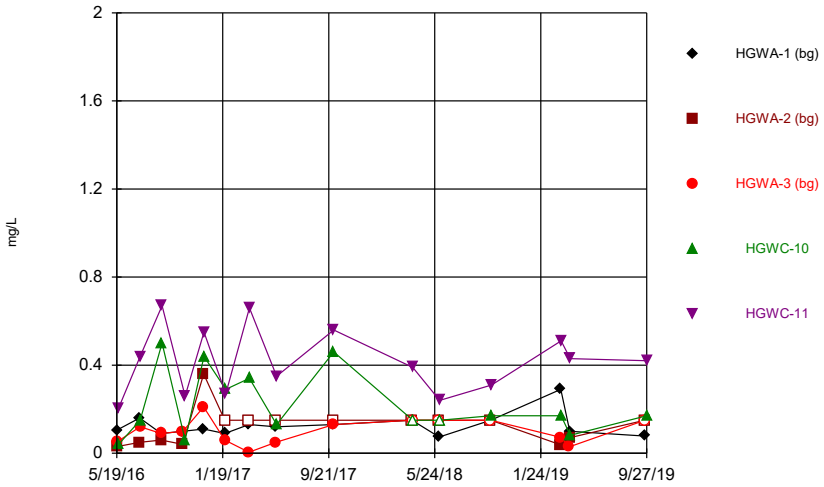
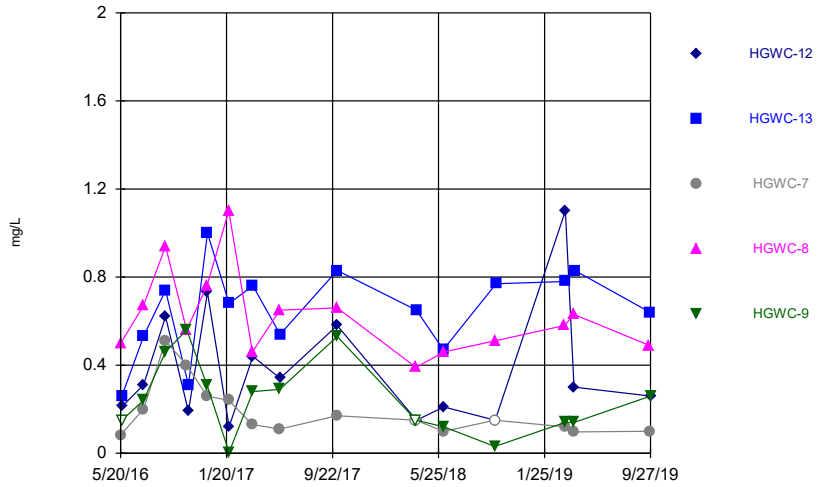


Constituent: Fluoride Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

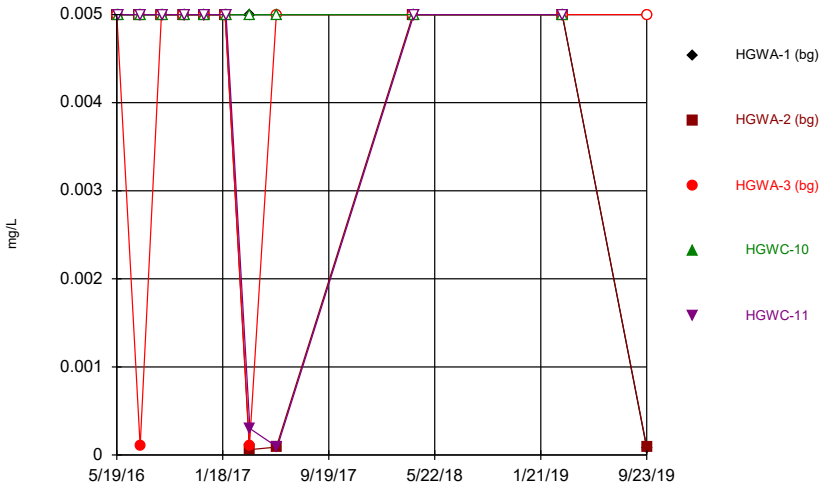
Time Series



Constituent: Fluoride Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

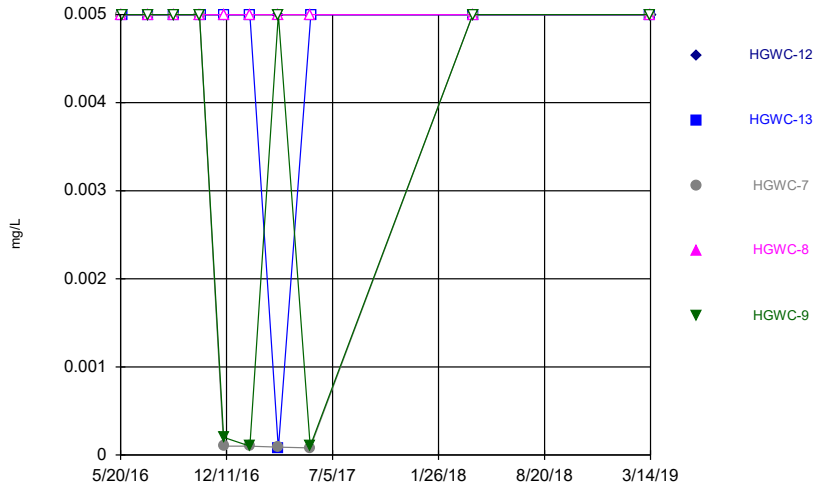
Time Series



Constituent: Lead Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

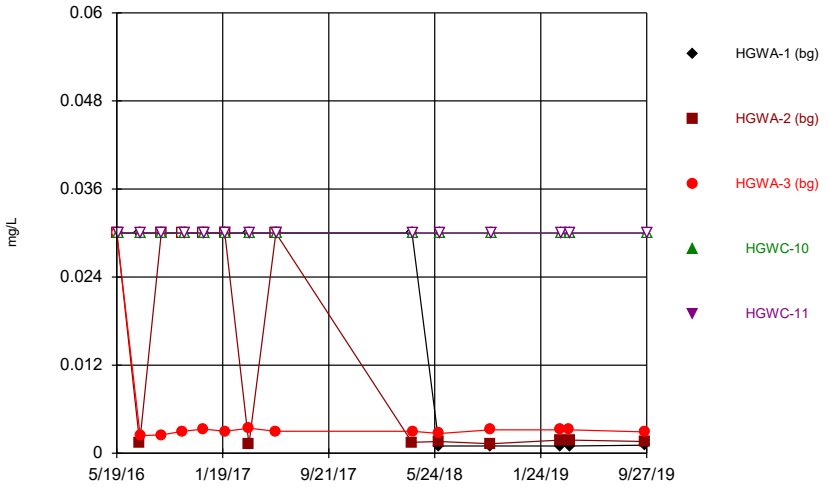
Time Series



Constituent: Lead Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

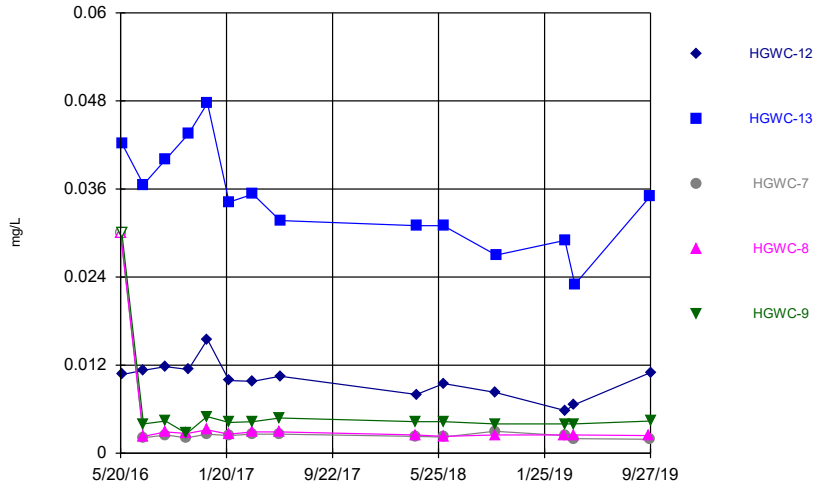
Time Series



Constituent: Lithium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

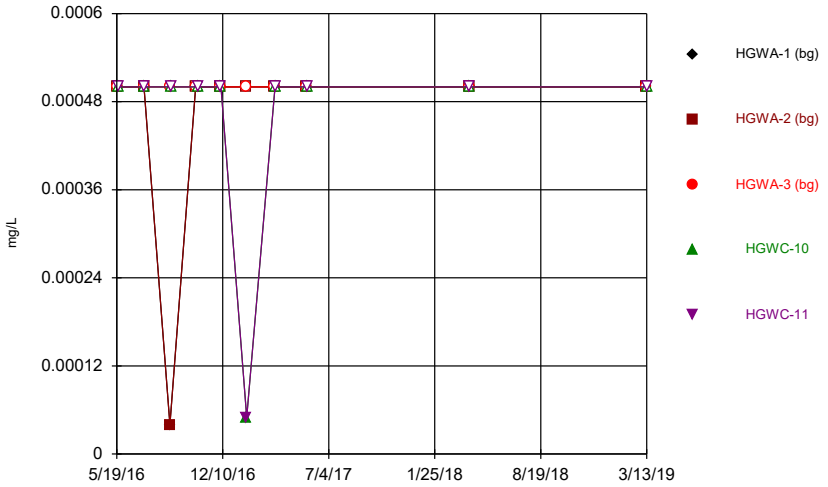
Time Series



Constituent: Lithium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

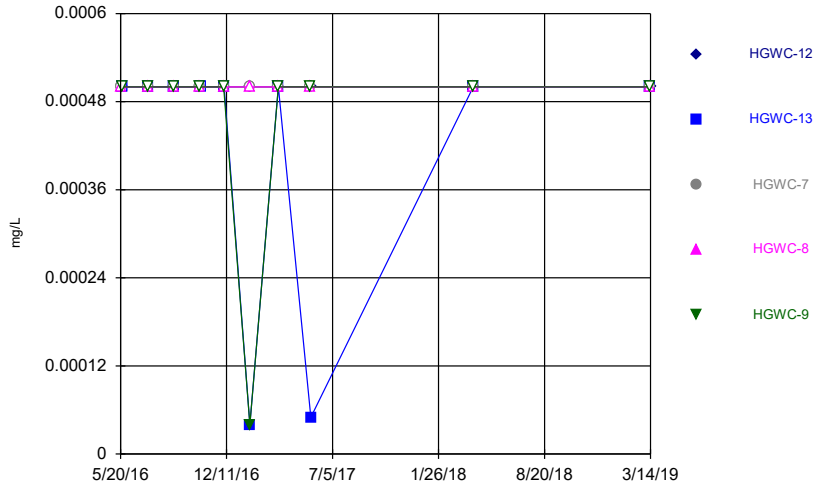
Time Series



Constituent: Mercury Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

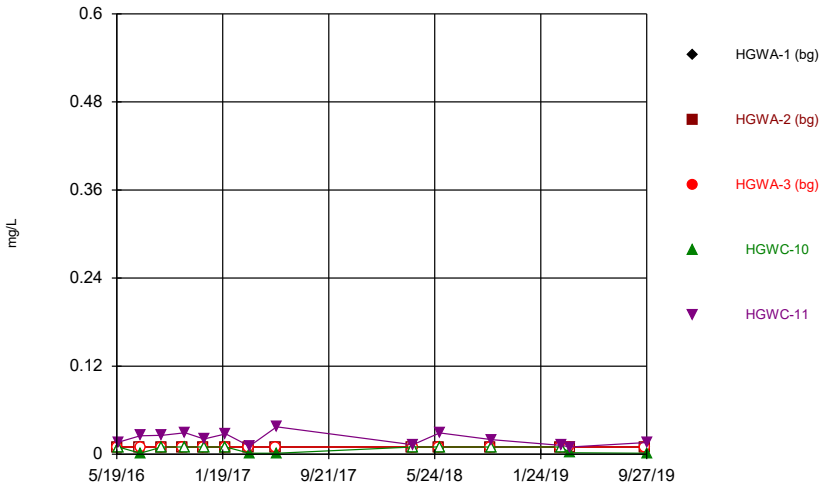
Time Series



Constituent: Mercury Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

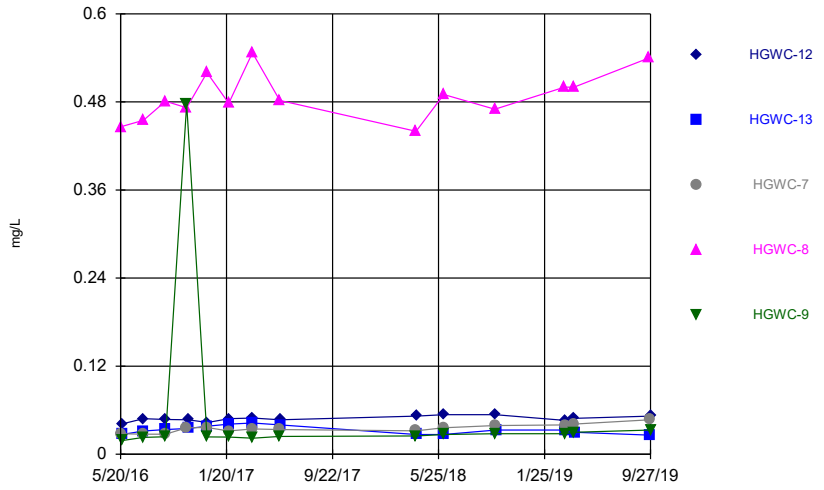
Time Series



Constituent: Molybdenum Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

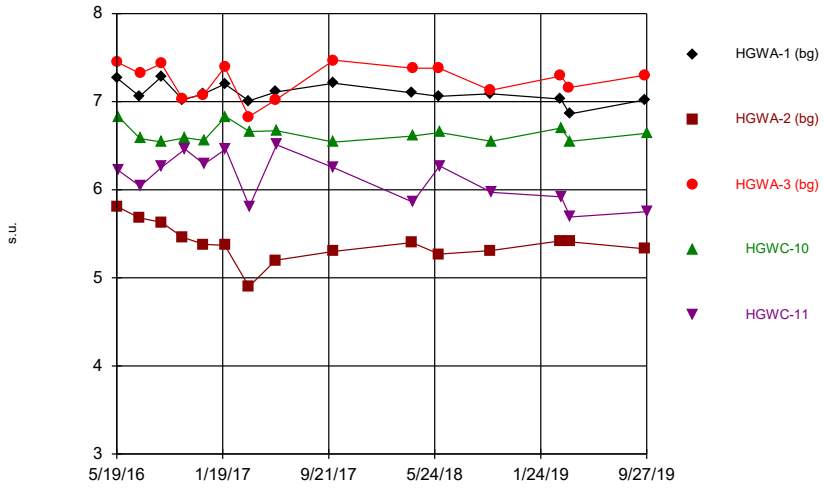
Time Series



Constituent: Molybdenum Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

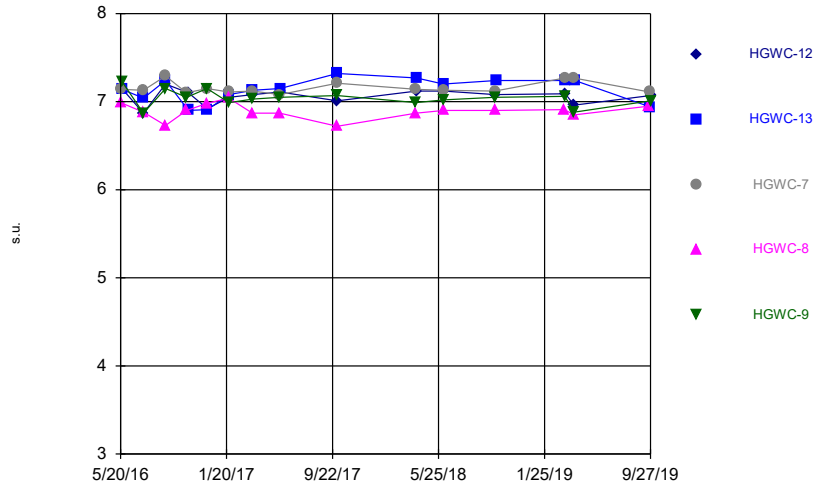
Time Series



Constituent: pH Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: pH Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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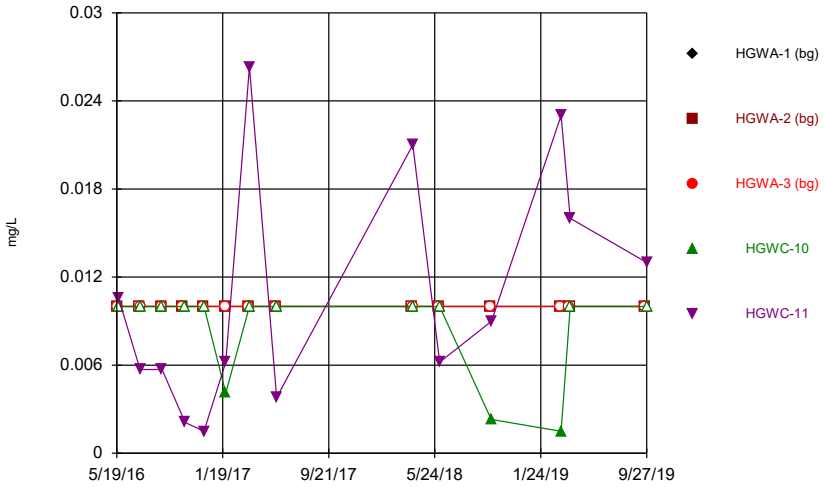
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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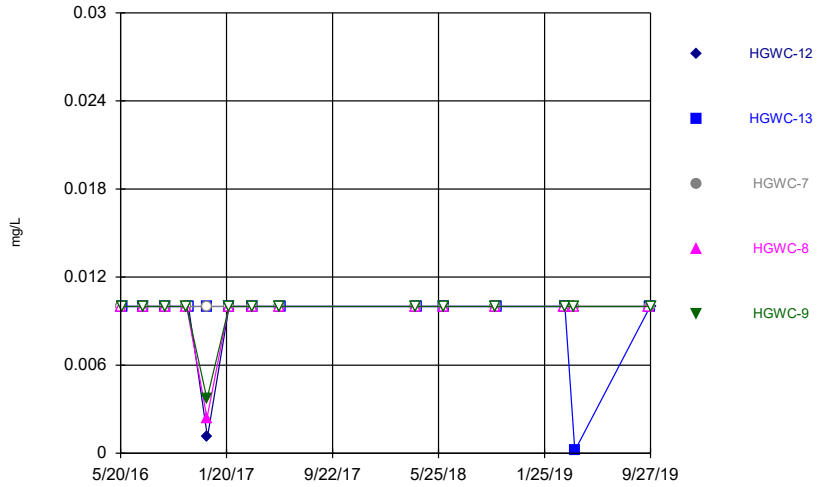
Hollow symbols indicate censored values.

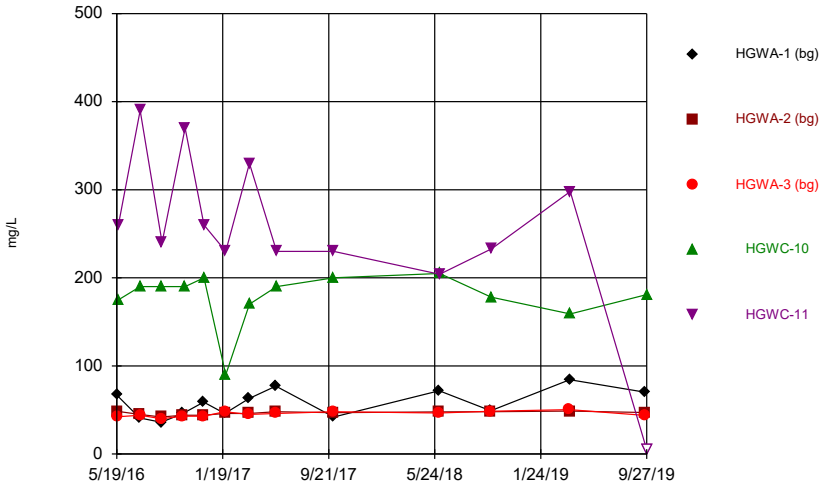
Time Series



Constituent: Selenium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



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Hammond AP Client: Georgia Power Data: Hammond AP-1

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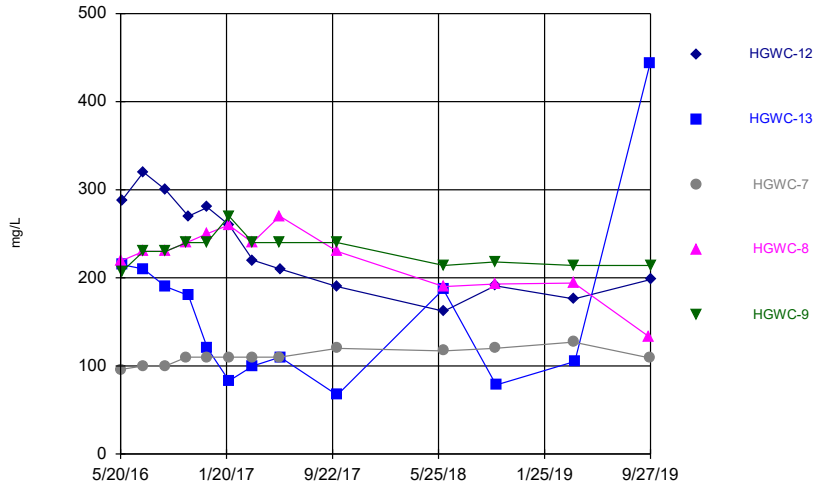
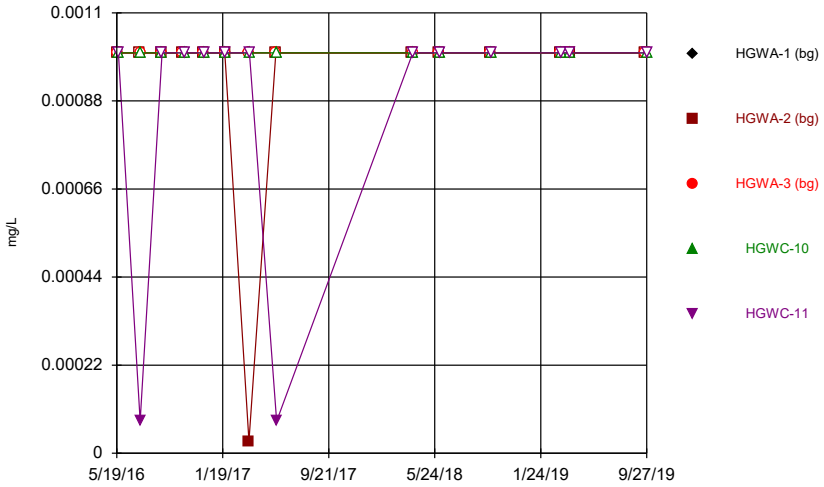
Time Series



Constituent: Sulfate Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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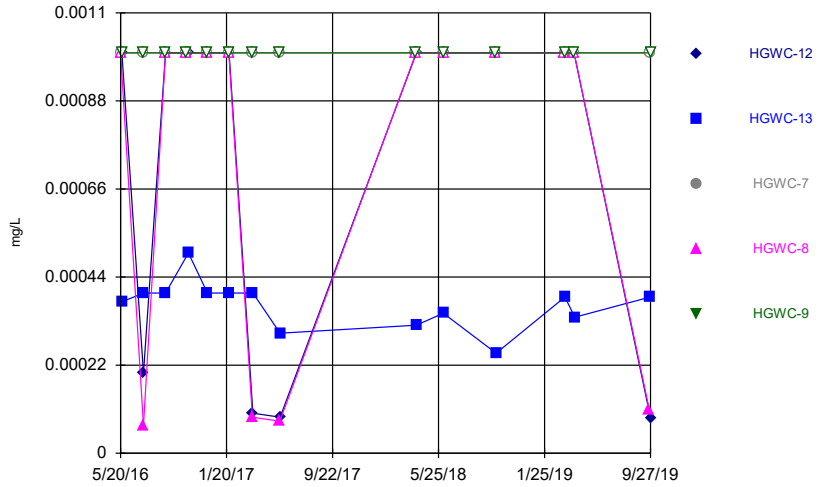
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

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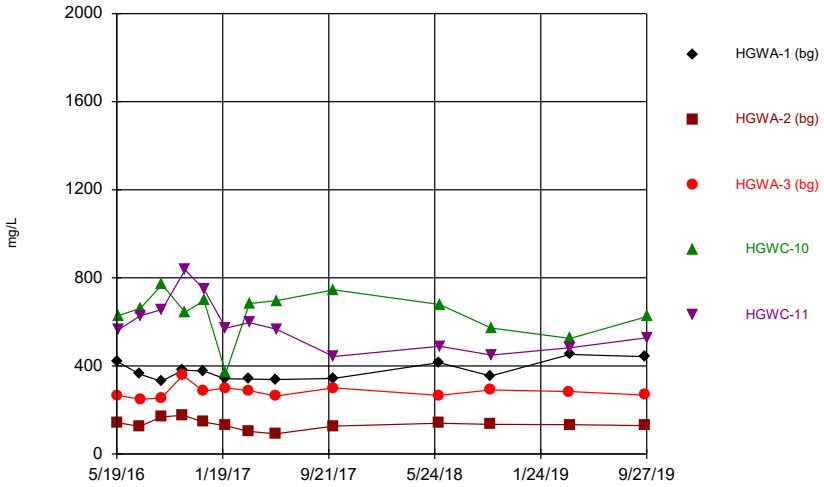
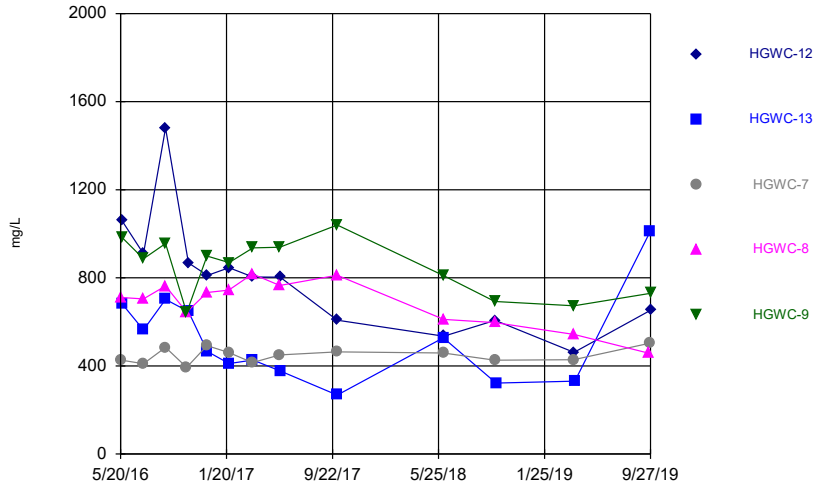
Time Series



Constituent: Total Dissolved Solids Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

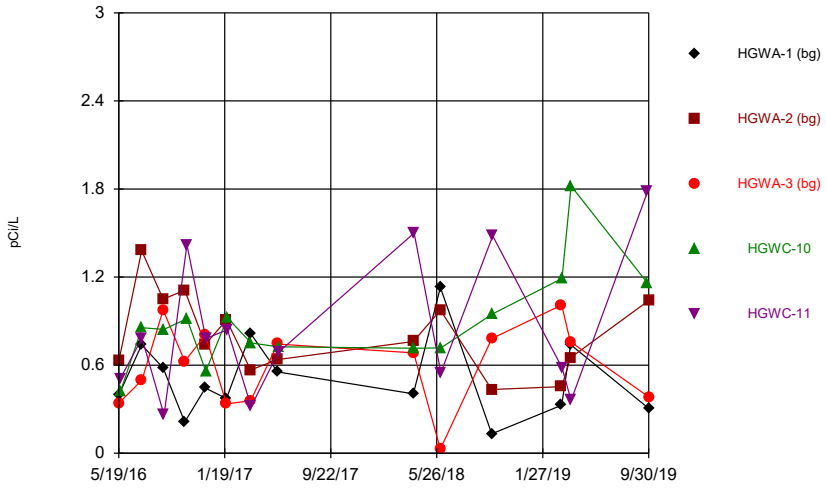
Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 12/16/2019 3:04 PM
Hammond AP Client: Georgia Power Data: Hammond AP-1

Time Series

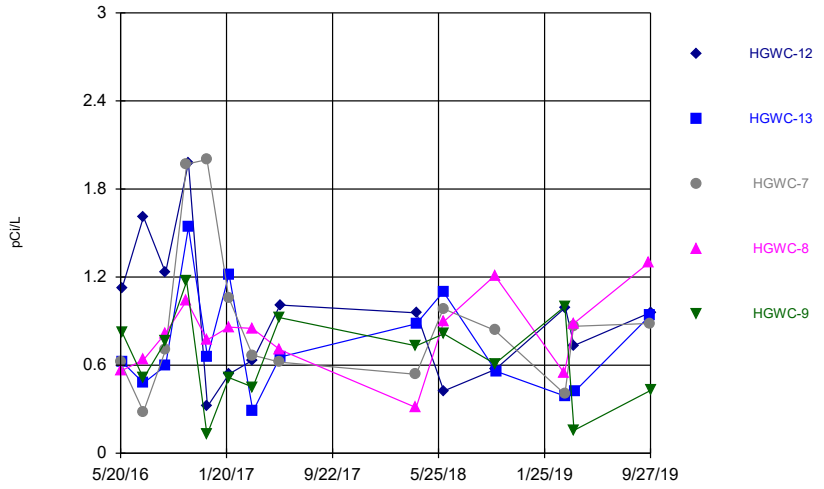


Constituent: Total Radium Analysis Run 12/16/2019 3:04 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Radium Analysis Run 12/16/2019 3:04 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Assessment Monitoring Program
Statistical Analysis Package
Plant Hammond Ash Pond 1 (AP-1)

April 2019 event (AM 01)

GA EPD Based Groundwater Protection Standards Statistical Analysis Package

AM 01

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 12:24 AM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	33	93.94	n/a	0.184	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	39	66.67	n/a	0.1353	NP Inter(NDs)
Barium (mg/L)	n/a	0.14	n/a	n/a	n/a	39	0	n/a	0.1353	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	33	75.76	n/a	0.184	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	33	84.85	n/a	0.184	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	33	90.91	n/a	0.184	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	33	63.64	n/a	0.184	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	42	28.57	n/a	0.116	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	30	86.67	n/a	0.2146	NP Inter(NDs)
Lithium (mg/L)	n/a	0.05	n/a	n/a	n/a	39	41.03	n/a	0.1353	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	30	93.33	n/a	0.2146	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	39	100	n/a	0.1353	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	39	100	n/a	0.1353	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	39	97.44	n/a	0.1353	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.341	n/a	n/a	n/a	39	0	No	0.01	Inter

Table E-2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS[1]
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.14	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt[2]	7440-48-4	mg/L	N/A	0.029	0.029
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead[2]	7439-92-1	mg/L	N/A	0.005	0.005
Lithium[2]	7439-93-2	mg/L	N/A	0.05	0.05
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum[2]	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.34	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

[1]GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

[2]Constituent without established EPA MCL.

Confidence Interval - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 12:35 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**HGWC-13**	**0.4136**	**0.3326**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-11**	**0.02769**	**0.01502**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-12**	**0.05099**	**0.04548**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-13**	**0.0378**	**0.02978**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-7**	**0.03754**	**0.03063**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-8**	**0.5051**	**0.4612**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-9**	**0.03**	**0.0219**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**NP (normality)**

Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 12:35 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	HGWC-10	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-11	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-12	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-13	0.0015	0.00021	0.006	No	11	81.82	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-7	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-8	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-9	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-10	0.0025	0.0025	0.01	No	13	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0053	0.0012	0.01	No	13	61.54	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004408	0.002577	0.01	No	13	15.38	No	0.01	Param.
Arsenic (mg/L)	**HGWC-13**	**0.4136**	**0.3326**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Arsenic (mg/L)	HGWC-7	0.0025	0.0019	0.01	No	13	92.31	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.0025	0.0025	0.01	No	13	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.0025	0.0008	0.01	No	13	84.62	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-10	0.09873	0.07101	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.06589	0.03153	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1261	0.0922	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.0964	0.07	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07738	0.0717	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08184	0.06803	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-9	0.1288	0.1045	2	No	13	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-10	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-11	0.0015	0.00009	0.004	No	11	72.73	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-12	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-13	0.0015	0.000062	0.004	No	11	90.91	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-7	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-8	0.0015	0.000074	0.004	No	11	90.91	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-9	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-10	0.0005	0.0001	0.005	No	11	36.36	No	0.006	NP (normality)
Cadmium (mg/L)	HGWC-11	0.0005	0.000096	0.005	No	11	72.73	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-12	0.0005	0.00009	0.005	No	11	72.73	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-13	0.0005	0.0005	0.005	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-7	0.0005	0.0001	0.005	No	11	63.64	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-8	0.0004919	0.0001335	0.005	No	11	9.091	ln(x)	0.01	Param.
Cadmium (mg/L)	HGWC-9	0.0005	0.00007	0.005	No	11	72.73	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-10	0.005	0.005	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-11	0.005	0.0003	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-12	0.005	0.0004	0.1	No	11	81.82	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-13	0.005	0.0004	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-7	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-8	0.005	0.0005	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-9	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-10	0.005	0.0006	0.0293	No	11	45.45	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-11	0.002567	0.001137	0.0293	No	11	18.18	No	0.01	Param.
Cobalt (mg/L)	HGWC-12	0.001767	0.001211	0.0293	No	11	18.18	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-13	0.003851	0.00226	0.0293	No	11	9.091	No	0.01	Param.
Cobalt (mg/L)	HGWC-7	0.0007331	0.0003532	0.0293	No	11	27.27	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-8	0.0026	0.0019	0.0293	No	11	9.091	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-9	0.005	0.0005	0.0293	No	11	18.18	No	0.006	NP (normality)
Fluoride (mg/L)	HGWC-10	0.3328	0.1145	4	No	14	14.29	No	0.01	Param.

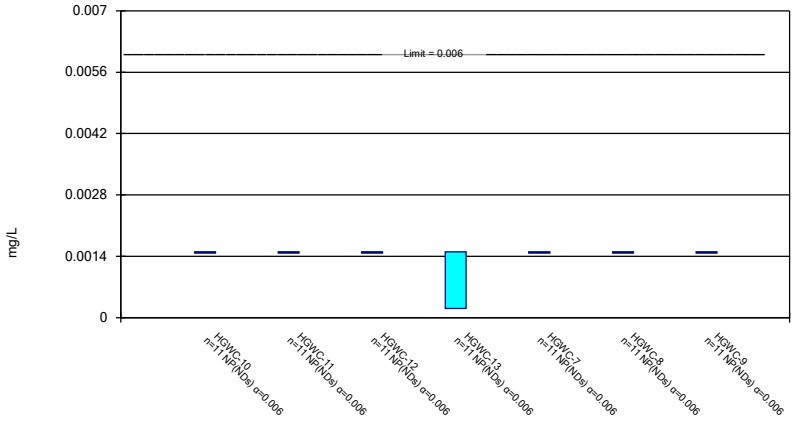
Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 12:35 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Fluoride (mg/L)	HGWC-11	0.5268	0.3079	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.5879	0.191	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.8014	0.5055	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.2628	0.1122	4	No	14	14.29	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.7712	0.4958	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.3665	0.1199	4	No	14	14.29	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.025	0.025	0.05	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-11	0.025	0.025	0.05	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-12	0.01178	0.008082	0.05	No	13	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.04004	0.02953	0.05	No	13	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.003	0.0021	0.05	No	13	7.692	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0023	0.05	No	13	7.692	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-9	0.005	0.004	0.05	No	13	7.692	No	0.01	NP (normality)
Molybdenum (mg/L)	HGWC-10	0.005	0.0014	0.01	No	13	69.23	No	0.01	NP (NDs)
Molybdenum (mg/L)	**HGWC-11**	**0.02769**	**0.01502**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-12**	**0.05099**	**0.04548**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-13**	**0.0378**	**0.02978**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-7**	**0.03754**	**0.03063**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-8**	**0.5051**	**0.4612**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-9**	**0.03**	**0.0219**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**NP (normality)**
Selenium (mg/L)	HGWC-10	0.005	0.0023	0.05	No	13	76.92	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01672	0.004369	0.05	No	13	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.005	0.0011	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-13	0.005	0.00018	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-7	0.005	0.005	0.05	No	13	100	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-8	0.005	0.0024	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-9	0.005	0.0037	0.05	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-11	0.0005	0.00008	0.002	No	13	84.62	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-12	0.0005	0.0001	0.002	No	13	76.92	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004169	0.0003259	0.002	No	13	0	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-8	0.0005	0.00008	0.002	No	13	76.92	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Total Radium (pCi/L)	HGWC-10	1.129	0.6216	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-11	1.097	0.4527	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-12	1.288	0.5771	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-13	0.9949	0.4523	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-7	1.284	0.493	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-8	0.9476	0.6041	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-9	0.8905	0.432	5	No	13	0	No	0.01	Param.

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

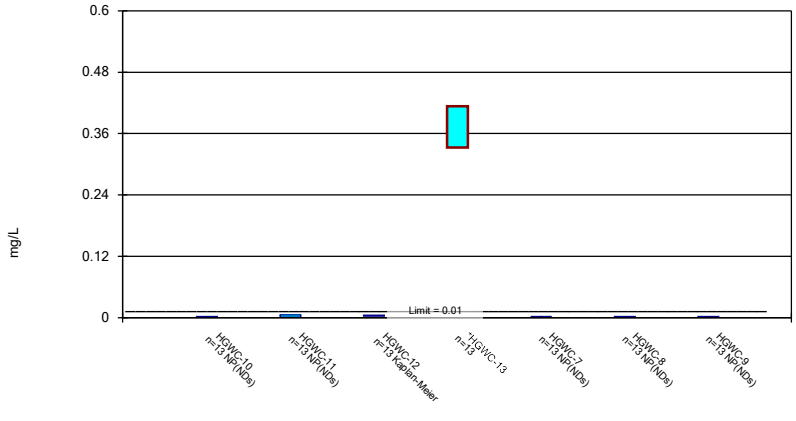


Constituent: Antimony Analysis Run 7/22/2019 12:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

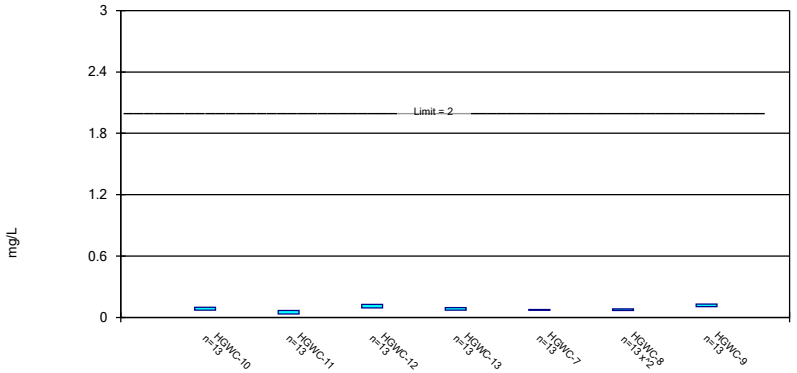


Constituent: Arsenic Analysis Run 7/22/2019 12:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

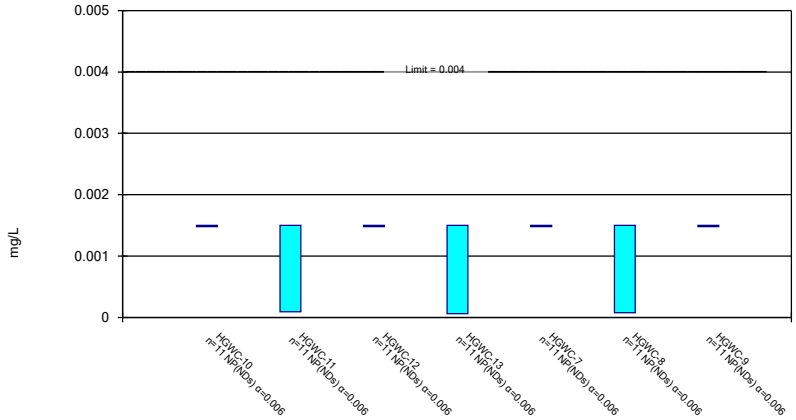


Constituent: Barium Analysis Run 7/22/2019 12:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 7/22/2019 12:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Antimony (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	0.0003 (J)	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	<0.003	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	<0.003		<0.003	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	<0.003	<0.003			<0.003	<0.003
4/5/2019				0.00021 (J)			
Mean	0.0015	0.0015	0.0015	0.001274	0.0015	0.0015	0.0015
Std. Dev.	0	0	0	0.000504	0	0	0
Upper Lim.	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Lower Lim.	0.0015	0.0015	0.0015	0.00021	0.0015	0.0015	0.0015

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
10/2/2018	<0.005				0.0019 (J)	<0.005	<0.005
10/3/2018		<0.005	0.0037 (J)				
10/5/2018				0.34			
3/12/2019						<0.005	
3/13/2019	<0.005	0.0024 (J)		0.42	<0.005		0.00075 (J)
3/14/2019			0.0026 (J)				
4/2/2019					<0.005		
4/3/2019	<0.005	0.00094 (J)	0.0022 (J)			<0.005	<0.005
4/5/2019				0.36			
Mean	0.0025	0.002411	0.003523	0.3731	0.002454	0.0025	0.002235
Std. Dev.	0	0.001036	0.001216	0.05444	0.0001664	0	0.0006479
Upper Lim.	0.0025	0.0053	0.004408	0.4136	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0012	0.002577	0.3326	0.0019	0.0025	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722	0.0791	
3/22/2017	0.0962	0.0346	0.112	0.0755			0.122
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075	0.065	0.1
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
10/2/2018	0.076				0.078	0.061	0.11
10/3/2018		0.033	0.087				
10/5/2018				0.076			
3/12/2019						0.062	
3/13/2019	0.044	0.024		0.1	0.083		0.1
3/14/2019			0.081				
4/2/2019					0.072		
4/3/2019	0.076	0.023	0.077			0.066	0.12
4/5/2019				0.079			
Mean	0.08487	0.04871	0.1092	0.0832	0.07454	0.07469	0.1167
Std. Dev.	0.01864	0.0231	0.0228	0.01775	0.003818	0.009549	0.01637
Upper Lim.	0.09873	0.06589	0.1261	0.0964	0.07738	0.08184	0.1288
Lower Lim.	0.07101	0.03153	0.0922	0.07	0.0717	0.06803	0.1045

Confidence Interval

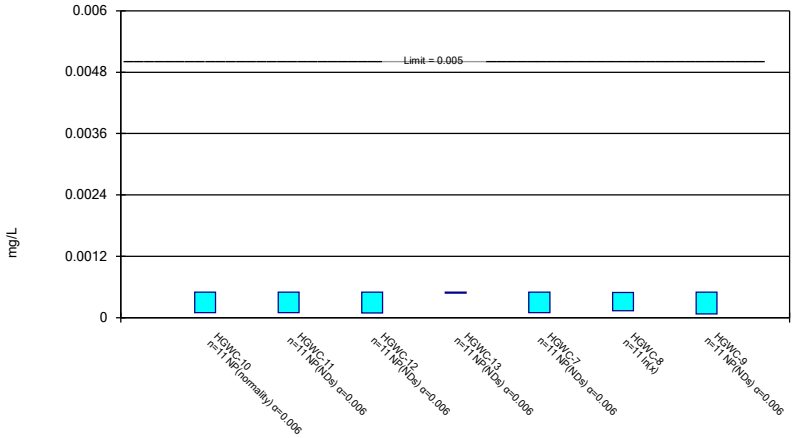
Constituent: Beryllium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	9E-05 (J)	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	0.0001 (J)		6.2E-05 (J)	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	0.00017 (J)	<0.003			7.4E-05 (J)	<0.003
4/5/2019				<0.003			
Mean	0.0015	0.001124	0.0015	0.001369	0.0015	0.00137	0.0015
Std. Dev.	0	0.0006449	0	0.0004336	0	0.00043	0
Upper Lim.	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Lower Lim.	0.0015	9E-05	0.0015	6.2E-05	0.0015	7.4E-05	0.0015

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

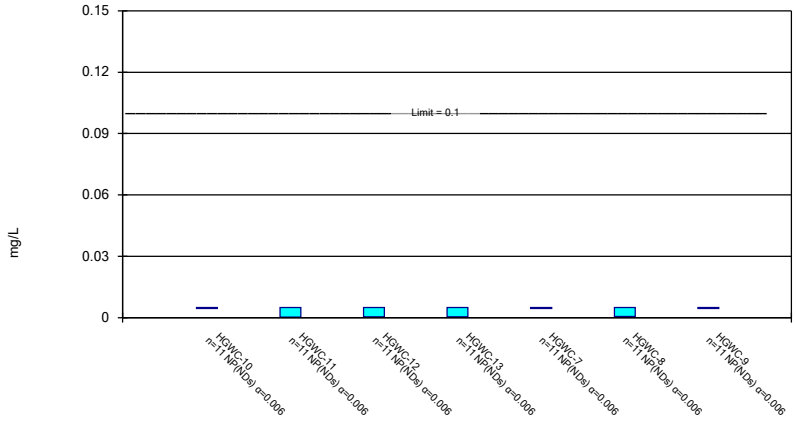


Constituent: Cadmium Analysis Run 7/22/2019 12:33 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

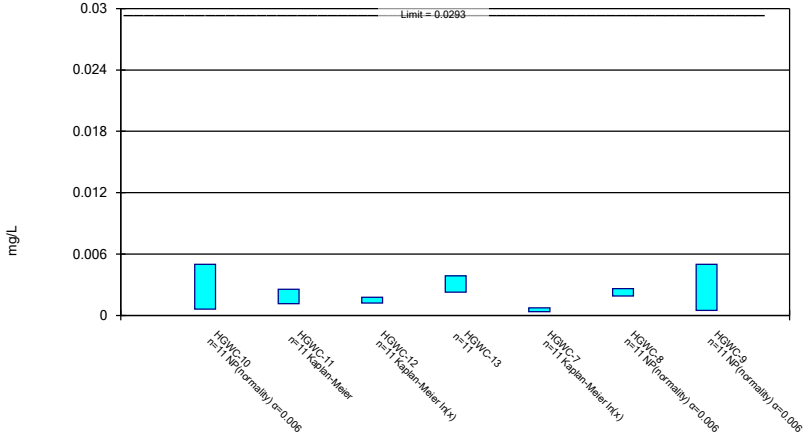


Constituent: Chromium Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

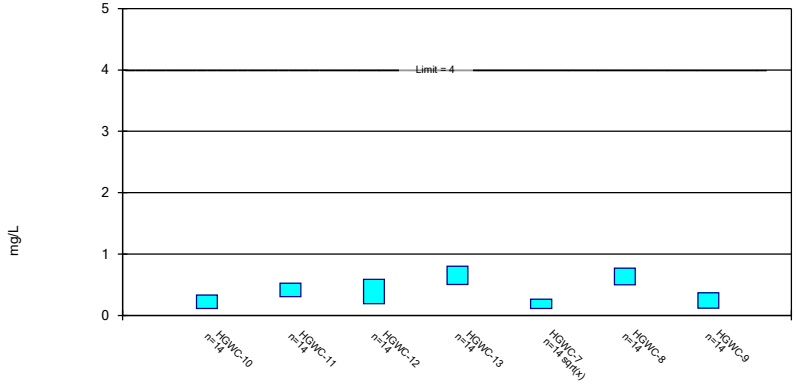


Constituent: Cobalt Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	0.00024 (J)	
5/23/2016	0.000115 (J)	<0.001	<0.001	<0.001			<0.001
7/12/2016	<0.001	<0.001	<0.001	<0.001	<0.001	0.0002 (J)	<0.001
9/1/2016	0.0001 (J)	<0.001	<0.001	<0.001	<0.001	0.0001 (J)	<0.001
10/20/2016					<0.001	0.0001 (J)	0.0002 (J)
10/24/2016	0.0001 (J)	<0.001	<0.001	<0.001			
12/6/2016					0.0002 (J)	0.0017	0.0001 (J)
12/7/2016	0.0001 (J)	0.0001 (J)	0.0002 (J)	<0.001			
1/25/2017					0.0002 (J)	0.0002 (J)	
1/26/2017	<0.001	<0.001	<0.001	<0.001			<0.001
3/21/2017					0.0002 (J)	0.0002 (J)	
3/22/2017	0.0001 (J)	0.0001 (J)	0.0003 (J)	<0.001			7E-05 (J)
5/23/2017					0.0001 (J)	0.0003 (J)	<0.001
5/24/2017	0.0002 (J)	<0.001	9E-05 (J)	<0.001			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	<0.001			
3/12/2019						0.0002 (J)	
3/13/2019	<0.001	<0.001		<0.001	<0.001		<0.001
3/14/2019			<0.001				
4/2/2019					<0.001		
4/3/2019	0.0001 (J)	9.6E-05 (J)	<0.001			0.00032 (J)	<0.001
4/5/2019				<0.001			
Mean	0.0002559	0.0003905	0.0004173	0.0005	0.0003818	0.0003691	0.0003973
Std. Dev.	0.0001957	0.0001875	0.0001493	0	0.0001662	0.0004551	0.0001786
Upper Lim.	0.0005	0.0005	0.0005	0.0005	0.0005	0.0004919	0.0005
Lower Lim.	0.0001	9.6E-05	9E-05	0.0005	0.0001	0.0001335	7E-05

Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	<0.01	<0.01	<0.01			<0.01
7/12/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	<0.01	<0.01	<0.01			
12/6/2016					<0.01	<0.01	<0.01
12/7/2016	<0.01	<0.01	<0.01	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	<0.01	<0.01	<0.01	<0.01			<0.01
3/21/2017					<0.01	0.0005 (J)	
3/22/2017	<0.01	0.0003 (J)	0.0004 (J)	0.0004 (J)			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	<0.01	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	<0.01	<0.01	<0.01			
3/12/2019						<0.01	
3/13/2019	<0.01	<0.01		<0.01	<0.01		<0.01
3/14/2019			0.0025 (J)				
4/2/2019					<0.01		
4/3/2019	0.02	<0.01	<0.01			<0.01	<0.01
4/5/2019				<0.01			
Mean	0.006364	0.004573	0.004355	0.004582	0.005	0.004591	0.005
Std. Dev.	0.004523	0.001417	0.001511	0.001387	0	0.001357	0
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.005	0.0003	0.0004	0.0004	0.005	0.0005	0.005

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	0.00207 (J)	
5/23/2016	<0.01	<0.01	<0.01	0.00361 (J)			<0.01
7/12/2016	0.0006 (J)	0.0021 (J)	0.0018 (J)	0.0032 (J)	0.0003 (J)	0.0019 (J)	0.0006 (J)
9/1/2016	0.0007 (J)	0.0025 (J)	0.0016 (J)	0.0033 (J)	<0.01	0.0023 (J)	0.0007 (J)
10/20/2016					0.0008 (J)	0.002 (J)	0.002 (J)
10/24/2016	0.0009 (J)	0.0032 (J)	0.0017 (J)	0.004 (J)			
12/6/2016					0.0009 (J)	0.0026 (J)	0.0011 (J)
12/7/2016	0.0012 (J)	0.003 (J)	0.0021 (J)	0.0034 (J)			
1/25/2017					0.0005 (J)	0.002 (J)	
1/26/2017	<0.01	0.0014 (J)	0.0016 (J)	0.0024 (J)			0.0006 (J)
3/21/2017					0.0005 (J)	0.0023 (J)	
3/22/2017	0.0006 (J)	0.0014 (J)	0.0018 (J)	0.0026 (J)			0.0005 (J)
5/23/2017					0.0005 (J)	0.0023 (J)	0.0006 (J)
5/24/2017	0.0006 (J)	0.0008 (J)	0.0015 (J)	0.0022 (J)			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	<0.01	<0.01	<0.01			
3/12/2019						0.002 (J)	
3/13/2019	<0.01	0.00098 (J)		0.0022 (J)	0.00067 (J)		0.00065 (J)
3/14/2019			0.0011 (J)				
4/2/2019					0.00069 (J)		
4/3/2019	<0.01	0.0018 (J)	0.0011 (J)			0.0019 (J)	0.00069 (J)
4/5/2019				0.0017 (J)			
Mean	0.002691	0.002471	0.002209	0.003055	0.001805	0.002397	0.001585
Std. Dev.	0.002217	0.001466	0.00141	0.0009549	0.002058	0.0008899	0.00174
Upper Lim.	0.005	0.002567	0.001767	0.003851	0.0007331	0.0026	0.005
Lower Lim.	0.0006	0.001137	0.001211	0.00226	0.0003532	0.0019	0.0005

Confidence Interval

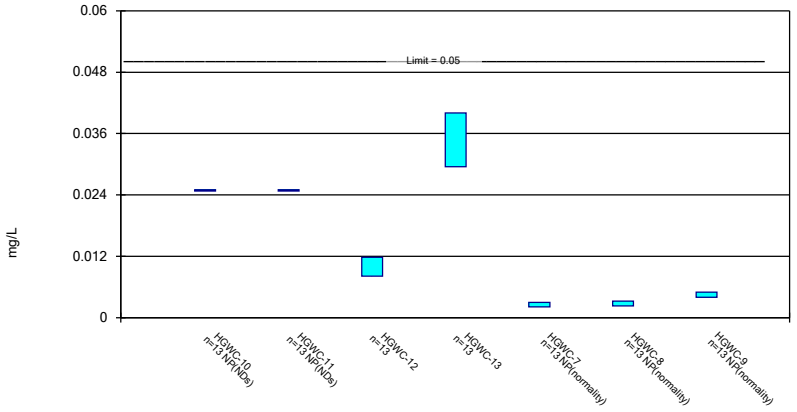
Constituent: Fluoride (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5	0.67	0.62	0.74	0.51	0.94	0.46
10/20/2016					0.4	0.56	0.56
10/24/2016	0.06 (J)	0.26 (J)	0.19 (J)	0.31			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44	0.55	0.73	1			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
10/2/2018	0.17 (J)				<0.3	0.51	0.031 (J)
10/3/2018		0.31	0.15 (J)				
10/5/2018				0.77			
3/12/2019						0.58	
3/13/2019	0.17 (J)	0.51		0.78	0.12 (J)		0.14 (J)
3/14/2019			1.1				
4/2/2019					0.097 (J)		
4/3/2019	0.082 (J)	0.43	0.3 (J)			0.63	0.14 (J)
4/5/2019				0.83			
Mean	0.2237	0.4174	0.3894	0.6535	0.1942	0.6335	0.2432
Std. Dev.	0.1541	0.1546	0.2802	0.2089	0.1242	0.1943	0.174
Upper Lim.	0.3328	0.5268	0.5879	0.8014	0.2628	0.7712	0.3665
Lower Lim.	0.1145	0.3079	0.191	0.5055	0.1122	0.4958	0.1199

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

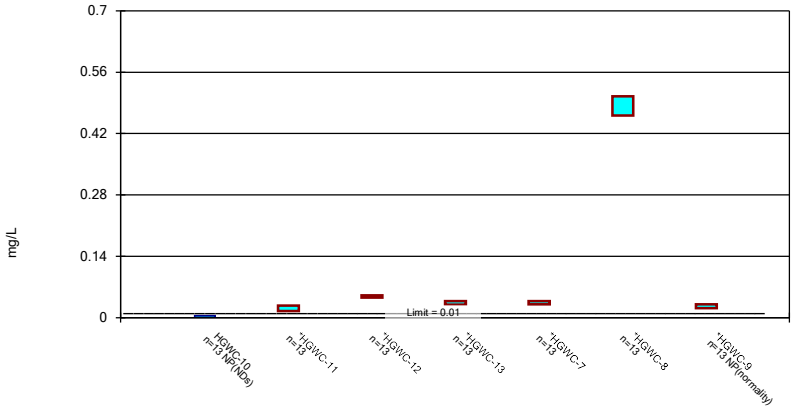


Constituent: Lithium Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

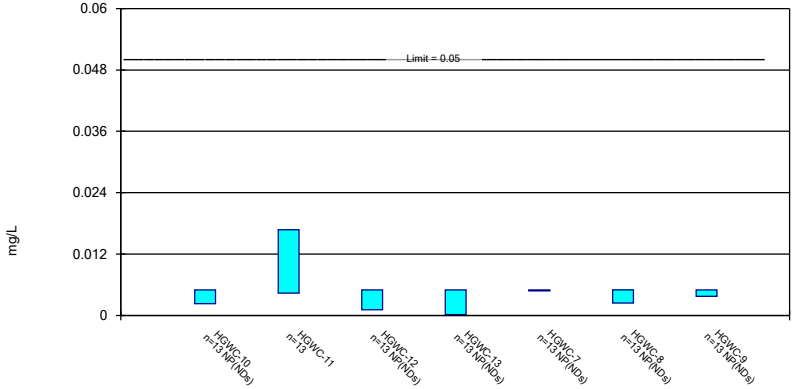


Constituent: Molybdenum Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

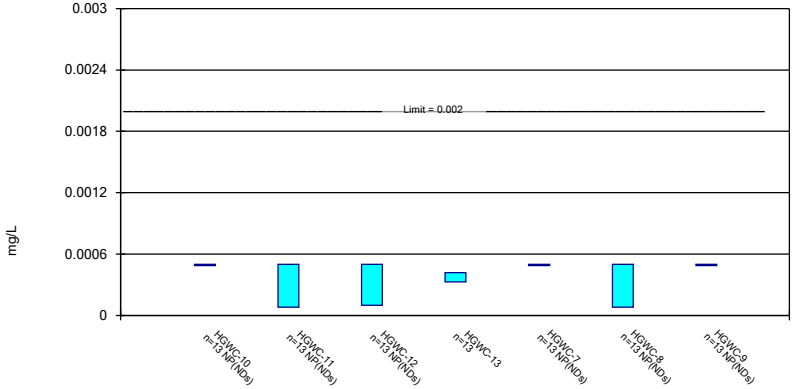


Constituent: Selenium Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 7/22/2019 12:34 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.05	<0.05	
5/23/2016	<0.05	<0.05	0.0107 (J)	0.0422 (J)			<0.05
7/12/2016	<0.05	<0.05	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.05	<0.05	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.05	<0.05	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.05	<0.05	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.05	<0.05	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.05	<0.05	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.05	<0.05	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.05	<0.05	0.008 (J)	0.031 (J)			
6/5/2018	<0.05	<0.05		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
10/2/2018	<0.05				0.003 (J)	0.0025 (J)	0.004 (J)
10/3/2018		<0.05	0.0083 (J)				
10/5/2018				0.027 (J)			
3/12/2019						0.0025 (J)	
3/13/2019	<0.05	<0.05		0.029 (J)	0.0024 (J)		0.004 (J)
3/14/2019			0.0058 (J)				
4/2/2019					0.002 (J)		
4/3/2019	<0.05	<0.05	0.0066 (J)			0.0025 (J)	0.004 (J)
4/5/2019				0.023 (J)			
Mean	0.025	0.025	0.009931	0.03478	0.004138	0.004369	0.005769
Std. Dev.	0	0	0.002487	0.007071	0.006274	0.006204	0.005803
Upper Lim.	0.025	0.025	0.01178	0.04004	0.003	0.0032	0.005
Lower Lim.	0.025	0.025	0.008082	0.02953	0.0021	0.0023	0.004

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472	0.477
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
10/2/2018	<0.01				0.039	0.47	0.028
10/3/2018		0.02	0.054				
10/5/2018				0.033			
3/12/2019						0.5	
3/13/2019	<0.01	0.012		0.033	0.04		0.028
3/14/2019			0.046				
4/2/2019					0.041		
4/3/2019	0.0021 (J)	0.01	0.049			0.5	0.03
4/5/2019				0.03			
Mean	0.003931	0.02135	0.04824	0.03379	0.03408	0.4832	0.05951
Std. Dev.	0.00168	0.008519	0.003706	0.005395	0.004641	0.02946	0.1255
Upper Lim.	0.005	0.02769	0.05099	0.0378	0.03754	0.5051	0.03
Lower Lim.	0.0014	0.01502	0.04548	0.02978	0.03063	0.4612	0.0219

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
10/2/2018	0.0023 (J)				<0.01	<0.01	<0.01
10/3/2018		0.009 (J)	<0.01				
10/5/2018				<0.01			
3/12/2019						<0.01	
3/13/2019	0.0015 (J)	0.023		<0.01	<0.01		<0.01
3/14/2019			<0.01				
4/2/2019					<0.01		
4/3/2019	<0.01	0.016	<0.01			<0.01	<0.01
4/5/2019				0.00018 (J)			
Mean	0.004454	0.01055	0.0047	0.004629	0.005	0.0048	0.0049
Std. Dev.	0.001172	0.008307	0.001082	0.001337	0	0.0007211	0.0003606
Upper Lim.	0.005	0.01672	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0023	0.004369	0.0011	0.00018	0.005	0.0024	0.0037

Confidence Interval

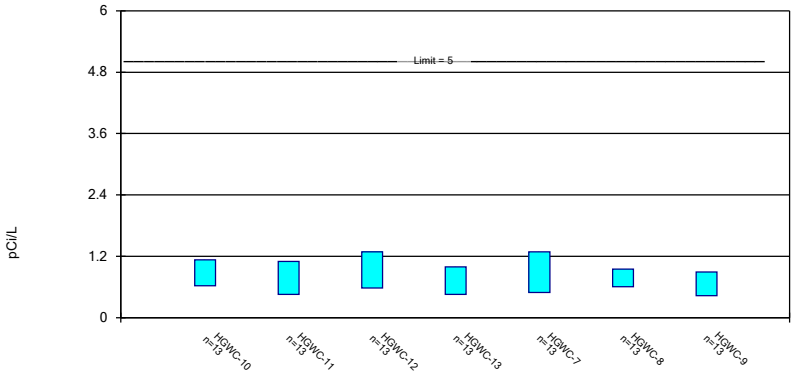
Constituent: Thallium (mg/L) Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	8E-05 (J)	0.0002 (J)	0.0004 (J)	<0.001	7E-05 (J)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
10/2/2018	<0.001				<0.001	<0.001	<0.001
10/3/2018		<0.001	<0.001				
10/5/2018				0.00025 (J)			
3/12/2019						<0.001	
3/13/2019	<0.001	<0.001		0.00039 (J)	<0.001		<0.001
3/14/2019			<0.001				
4/2/2019					<0.001		
4/3/2019	<0.001	<0.001	<0.001			<0.001	<0.001
4/5/2019				0.00034 (J)			
Mean	0.0005	0.0004354	0.0004146	0.0003714	0.0005	0.0004031	0.0005
Std. Dev.	0	0.0001577	0.0001641	6.12E-05	0	0.0001842	0
Upper Lim.	0.0005	0.0005	0.0005	0.0004169	0.0005	0.0005	0.0005
Lower Lim.	0.0005	8E-05	0.0001	0.0003259	0.0005	8E-05	0.0005

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 7/22/2019 12:35 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/22/2019 12:36 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.62 (U)	0.56 (U)	
5/23/2016	0.419 (U)	0.509 (U)	1.12	0.625 (U)			0.826 (U)
7/12/2016	0.855	0.784 (U)	1.61	0.478 (U)	0.283 (U)	0.636 (U)	0.511 (U)
9/1/2016	0.844 (U)	0.261 (U)	1.23	0.595 (U)	0.703 (U)	0.818 (U)	0.762 (U)
10/20/2016					1.97	1.04 (U)	1.17
10/24/2016	0.917 (U)	1.42	1.98	1.54			
12/6/2016					2	0.771 (U)	0.126 (U)
12/7/2016	0.558 (U)	0.781 (U)	0.319 (U)	0.657 (U)			
1/25/2017					1.06 (U)	0.859 (U)	
1/26/2017	0.922 (U)	0.842 (U)	0.54 (U)	1.22			0.515 (U)
3/21/2017					0.668 (U)	0.851 (U)	
3/22/2017	0.751 (U)	0.318 (U)	0.635 (U)	0.285 (U)			0.451 (U)
5/23/2017					0.621 (U)	0.705 (U)	0.924 (U)
5/24/2017	0.725 (U)	0.687 (U)	1.01	0.655 (U)			
4/3/2018					0.538 (U)	0.311 (U)	0.732 (U)
4/4/2018	0.715 (U)	1.5	0.956	0.882 (U)			
6/5/2018	0.718 (U)	0.549 (U)		1.1 (U)	0.985 (U)		
6/6/2018			0.424 (U)			0.896 (U)	0.813 (U)
10/2/2018	0.948				0.837 (U)	1.21	0.61 (U)
10/3/2018		1.48	0.57 (U)				
10/5/2018				0.558 (U)			
3/12/2019						0.544 (U)	
3/13/2019	1.19 (U)	0.584 (U)		0.39 (U)	0.403 (U)		1 (U)
3/14/2019			0.992 (U)				
4/2/2019					0.865 (U)		
4/3/2019	1.82 (U)	0.36 (U)	0.734 (U)			0.885 (U)	0.156 (U)
4/5/2019				0.422 (U)			
Mean	0.8755	0.775	0.9323	0.7236	0.8887	0.7758	0.6612
Std. Dev.	0.3415	0.4335	0.4777	0.3649	0.5322	0.2309	0.3083
Upper Lim.	1.129	1.097	1.288	0.9949	1.284	0.9476	0.8905
Lower Lim.	0.6216	0.4527	0.5771	0.4523	0.493	0.6041	0.432

USEPA Based Groundwater Protection Standards Statistical Analysis Package

AM 01

Tolerance Limit

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 1:01 AM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	33	93.94	n/a	0.184	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	39	66.67	n/a	0.1353	NP Inter(NDs)
Barium (mg/L)	n/a	0.14	n/a	n/a	n/a	39	0	n/a	0.1353	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	33	75.76	n/a	0.184	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	33	84.85	n/a	0.184	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	33	90.91	n/a	0.184	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0293	n/a	n/a	n/a	33	63.64	n/a	0.184	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	42	28.57	n/a	0.116	NP Inter(normal...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	30	86.67	n/a	0.2146	NP Inter(NDs)
Lithium (mg/L)	n/a	0.025	n/a	n/a	n/a	39	41.03	n/a	0.1353	NP Inter(normal...
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	30	93.33	n/a	0.2146	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	39	100	n/a	0.1353	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	39	100	n/a	0.1353	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	39	97.44	n/a	0.1353	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.341	n/a	n/a	n/a	39	0	No	0.01	Inter

Table E-2
USEPA Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS[1]
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.14	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt[2]	7440-48-4	mg/L	0.006	0.029	0.029
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead[3]	7439-92-1	mg/L	0.015	0.005	0.015
Lithium[2]	7439-93-2	mg/L	0.04	0.025	0.04
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum[2]	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.34	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

[1]GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

[2]Regional Screening Level applied for constituent per CCR Rule Ammendment, July 30, 2018.

[3]Currently, there is no EPA MCL established for lead. The value listed is the established EPA Action Level for drinking water.

Confidence Interval - Significant Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 1:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**HGWC-13**	**0.4136**	**0.3326**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-8**	**0.5051**	**0.4612**	**0.1**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**

Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 1:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	HGWC-10	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-11	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-12	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-13	0.0015	0.00021	0.006	No	11	81.82	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-7	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-8	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	HGWC-9	0.0015	0.0015	0.006	No	11	100	No	0.006	NP (NDs)
Arsenic (mg/L)	HGWC-10	0.0025	0.0025	0.01	No	13	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0053	0.0012	0.01	No	13	61.54	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004408	0.002577	0.01	No	13	15.38	No	0.01	Param.
Arsenic (mg/L)	**HGWC-13**	**0.4136**	**0.3326**	**0.01**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Arsenic (mg/L)	HGWC-7	0.0025	0.0019	0.01	No	13	92.31	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.0025	0.0025	0.01	No	13	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.0025	0.0008	0.01	No	13	84.62	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-10	0.09873	0.07101	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.06589	0.03153	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1261	0.0922	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.0964	0.07	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07738	0.0717	2	No	13	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08184	0.06803	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	HGWC-9	0.1288	0.1045	2	No	13	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-10	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-11	0.0015	0.00009	0.004	No	11	72.73	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-12	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-13	0.0015	0.000062	0.004	No	11	90.91	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-7	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-8	0.0015	0.000074	0.004	No	11	90.91	No	0.006	NP (NDs)
Beryllium (mg/L)	HGWC-9	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-10	0.0005	0.0001	0.005	No	11	36.36	No	0.006	NP (normality)
Cadmium (mg/L)	HGWC-11	0.0005	0.000096	0.005	No	11	72.73	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-12	0.0005	0.00009	0.005	No	11	72.73	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-13	0.0005	0.0005	0.005	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-7	0.0005	0.0001	0.005	No	11	63.64	No	0.006	NP (NDs)
Cadmium (mg/L)	HGWC-8	0.0004919	0.0001335	0.005	No	11	9.091	ln(x)	0.01	Param.
Cadmium (mg/L)	HGWC-9	0.0005	0.00007	0.005	No	11	72.73	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-10	0.005	0.005	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-11	0.005	0.0003	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-12	0.005	0.0004	0.1	No	11	81.82	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-13	0.005	0.0004	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-7	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-8	0.005	0.0005	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	HGWC-9	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Cobalt (mg/L)	HGWC-10	0.005	0.0006	0.0293	No	11	45.45	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-11	0.002567	0.001137	0.0293	No	11	18.18	No	0.01	Param.
Cobalt (mg/L)	HGWC-12	0.001767	0.001211	0.0293	No	11	18.18	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-13	0.003851	0.00226	0.0293	No	11	9.091	No	0.01	Param.
Cobalt (mg/L)	HGWC-7	0.0007331	0.0003532	0.0293	No	11	27.27	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-8	0.0026	0.0019	0.0293	No	11	9.091	No	0.006	NP (normality)
Cobalt (mg/L)	HGWC-9	0.005	0.0005	0.0293	No	11	18.18	No	0.006	NP (normality)
Fluoride (mg/L)	HGWC-10	0.3328	0.1145	4	No	14	14.29	No	0.01	Param.

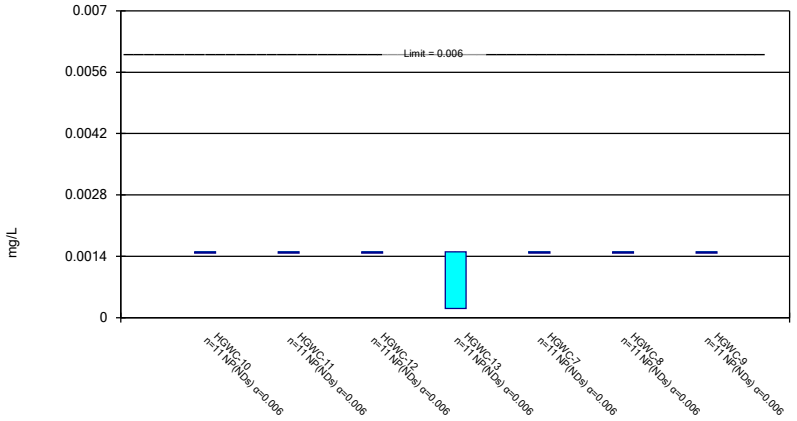
Confidence Interval - All Results

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1 Printed 7/22/2019, 1:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Fluoride (mg/L)	HGWC-11	0.5268	0.3079	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.5879	0.191	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.8014	0.5055	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.2628	0.1122	4	No	14	14.29	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.7712	0.4958	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.3665	0.1199	4	No	14	14.29	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.0125	0.0125	0.04	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-11	0.0125	0.0125	0.04	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-12	0.01178	0.008082	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.04004	0.02953	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.003	0.0021	0.04	No	13	7.692	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0023	0.04	No	13	7.692	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-9	0.005	0.004	0.04	No	13	7.692	No	0.01	NP (normality)
Molybdenum (mg/L)	HGWC-10	0.005	0.0014	0.1	No	13	69.23	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-11	0.02769	0.01502	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.05099	0.04548	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.0378	0.02978	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.03754	0.03063	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	**HGWC-8**	**0.5051**	**0.4612**	**0.1**	**Yes**	**13**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	HGWC-9	0.03	0.0219	0.1	No	13	0	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-10	0.005	0.0023	0.05	No	13	76.92	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01672	0.004369	0.05	No	13	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.005	0.0011	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-13	0.005	0.00018	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-7	0.005	0.005	0.05	No	13	100	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-8	0.005	0.0024	0.05	No	13	92.31	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-9	0.005	0.0037	0.05	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-11	0.0005	0.00008	0.002	No	13	84.62	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-12	0.0005	0.0001	0.002	No	13	76.92	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004169	0.0003259	0.002	No	13	0	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-8	0.0005	0.00008	0.002	No	13	76.92	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Total Radium (pCi/L)	HGWC-10	1.129	0.6216	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-11	1.097	0.4527	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-12	1.288	0.5771	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-13	0.9949	0.4523	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-7	1.284	0.493	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-8	0.9476	0.6041	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-9	0.8905	0.432	5	No	13	0	No	0.01	Param.

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

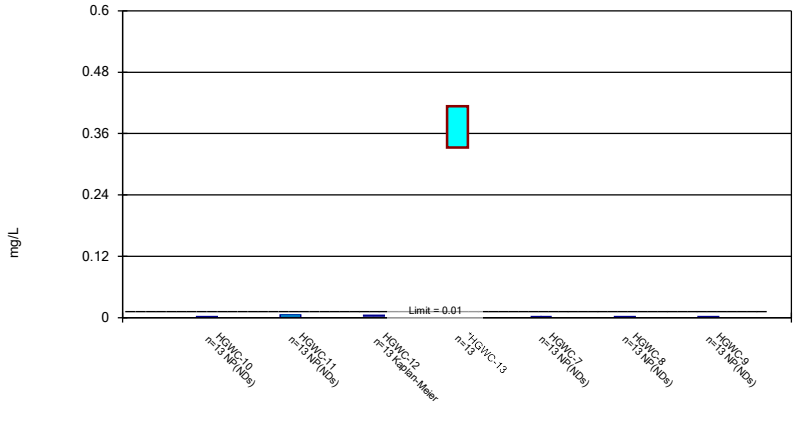


Constituent: Antimony Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

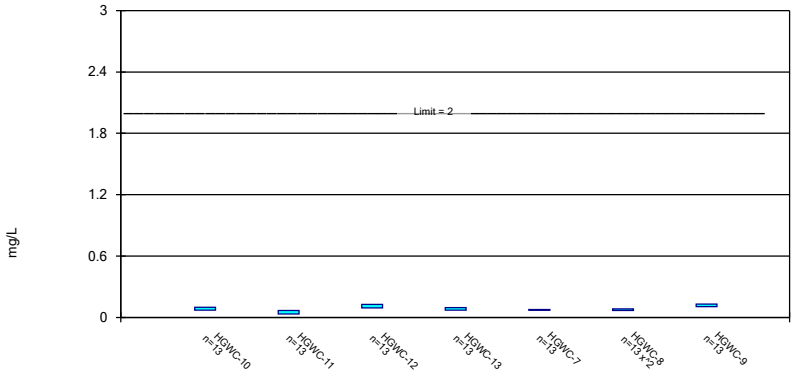


Constituent: Arsenic Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

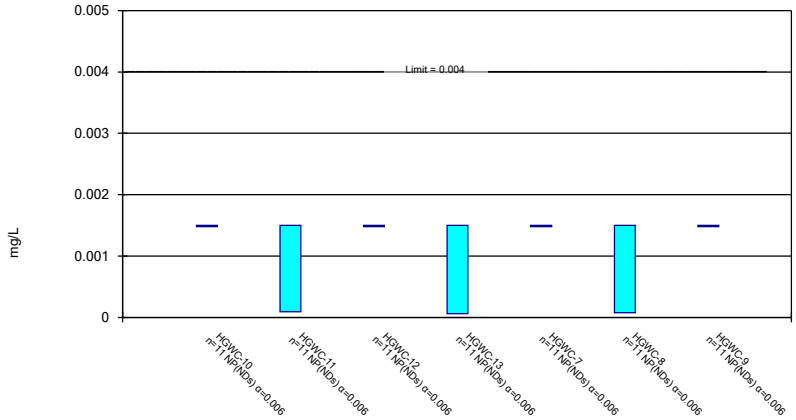


Constituent: Barium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Antimony (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	0.0003 (J)	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	<0.003	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	<0.003		<0.003	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	<0.003	<0.003			<0.003	<0.003
4/5/2019				0.00021 (J)			
Mean	0.0015	0.0015	0.0015	0.001274	0.0015	0.0015	0.0015
Std. Dev.	0	0	0	0.000504	0	0	0
Upper Lim.	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Lower Lim.	0.0015	0.0015	0.0015	0.00021	0.0015	0.0015	0.0015

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
10/2/2018	<0.005				0.0019 (J)	<0.005	<0.005
10/3/2018		<0.005	0.0037 (J)				
10/5/2018				0.34			
3/12/2019						<0.005	
3/13/2019	<0.005	0.0024 (J)		0.42	<0.005		0.00075 (J)
3/14/2019			0.0026 (J)				
4/2/2019					<0.005		
4/3/2019	<0.005	0.00094 (J)	0.0022 (J)			<0.005	<0.005
4/5/2019				0.36			
Mean	0.0025	0.002411	0.003523	0.3731	0.002454	0.0025	0.002235
Std. Dev.	0	0.001036	0.001216	0.05444	0.0001664	0	0.0006479
Upper Lim.	0.0025	0.0053	0.004408	0.4136	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0012	0.002577	0.3326	0.0019	0.0025	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722	0.0791	
3/22/2017	0.0962	0.0346	0.112	0.0755			0.122
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075	0.065	0.1
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
10/2/2018	0.076				0.078	0.061	0.11
10/3/2018		0.033	0.087				
10/5/2018				0.076			
3/12/2019						0.062	
3/13/2019	0.044	0.024		0.1	0.083		0.1
3/14/2019			0.081				
4/2/2019					0.072		
4/3/2019	0.076	0.023	0.077			0.066	0.12
4/5/2019				0.079			
Mean	0.08487	0.04871	0.1092	0.0832	0.07454	0.07469	0.1167
Std. Dev.	0.01864	0.0231	0.0228	0.01775	0.003818	0.009549	0.01637
Upper Lim.	0.09873	0.06589	0.1261	0.0964	0.07738	0.08184	0.1288
Lower Lim.	0.07101	0.03153	0.0922	0.07	0.0717	0.06803	0.1045

Confidence Interval

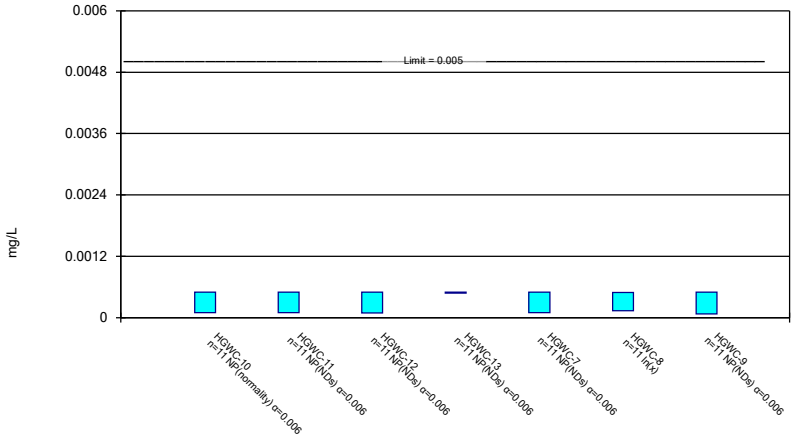
Constituent: Beryllium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	9E-05 (J)	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	0.0001 (J)		6.2E-05 (J)	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	0.00017 (J)	<0.003			7.4E-05 (J)	<0.003
4/5/2019				<0.003			
Mean	0.0015	0.001124	0.0015	0.001369	0.0015	0.00137	0.0015
Std. Dev.	0	0.0006449	0	0.0004336	0	0.00043	0
Upper Lim.	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Lower Lim.	0.0015	9E-05	0.0015	6.2E-05	0.0015	7.4E-05	0.0015

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

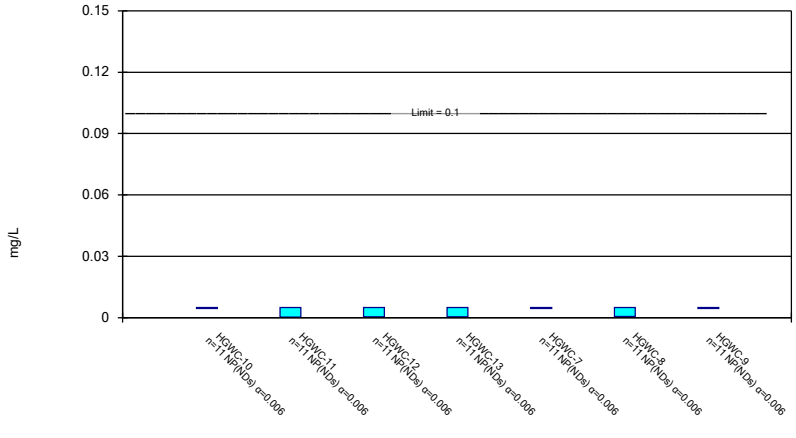


Constituent: Cadmium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

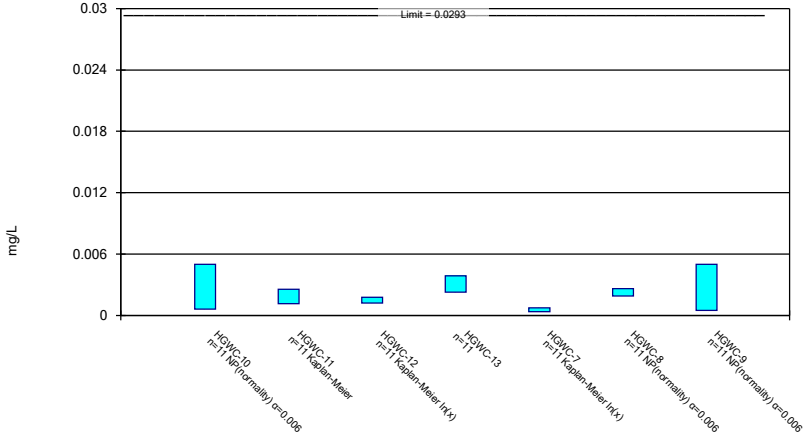


Constituent: Chromium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

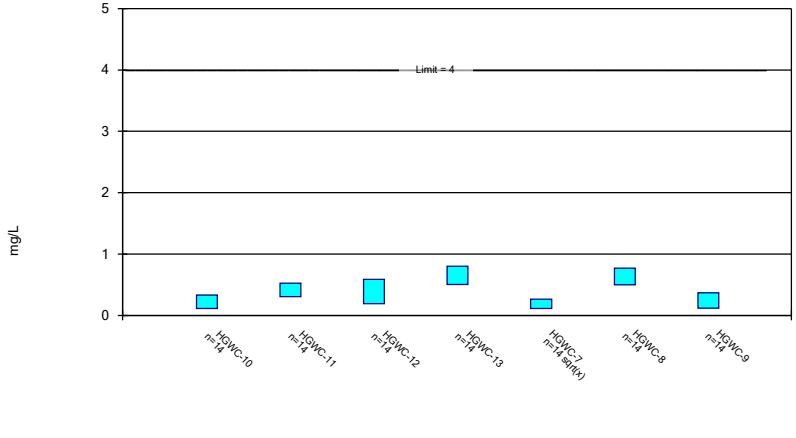


Constituent: Cobalt Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	0.00024 (J)	
5/23/2016	0.000115 (J)	<0.001	<0.001	<0.001			<0.001
7/12/2016	<0.001	<0.001	<0.001	<0.001	<0.001	0.0002 (J)	<0.001
9/1/2016	0.0001 (J)	<0.001	<0.001	<0.001	<0.001	0.0001 (J)	<0.001
10/20/2016					<0.001	0.0001 (J)	0.0002 (J)
10/24/2016	0.0001 (J)	<0.001	<0.001	<0.001			
12/6/2016					0.0002 (J)	0.0017	0.0001 (J)
12/7/2016	0.0001 (J)	0.0001 (J)	0.0002 (J)	<0.001			
1/25/2017					0.0002 (J)	0.0002 (J)	
1/26/2017	<0.001	<0.001	<0.001	<0.001			<0.001
3/21/2017					0.0002 (J)	0.0002 (J)	
3/22/2017	0.0001 (J)	0.0001 (J)	0.0003 (J)	<0.001			7E-05 (J)
5/23/2017					0.0001 (J)	0.0003 (J)	<0.001
5/24/2017	0.0002 (J)	<0.001	9E-05 (J)	<0.001			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	<0.001			
3/12/2019						0.0002 (J)	
3/13/2019	<0.001	<0.001		<0.001	<0.001		<0.001
3/14/2019			<0.001				
4/2/2019					<0.001		
4/3/2019	0.0001 (J)	9.6E-05 (J)	<0.001			0.00032 (J)	<0.001
4/5/2019				<0.001			
Mean	0.0002559	0.0003905	0.0004173	0.0005	0.0003818	0.0003691	0.0003973
Std. Dev.	0.0001957	0.0001875	0.0001493	0	0.0001662	0.0004551	0.0001786
Upper Lim.	0.0005	0.0005	0.0005	0.0005	0.0005	0.0004919	0.0005
Lower Lim.	0.0001	9.6E-05	9E-05	0.0005	0.0001	0.0001335	7E-05

Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	<0.01	<0.01	<0.01			<0.01
7/12/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	<0.01	<0.01	<0.01			
12/6/2016					<0.01	<0.01	<0.01
12/7/2016	<0.01	<0.01	<0.01	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	<0.01	<0.01	<0.01	<0.01			<0.01
3/21/2017					<0.01	0.0005 (J)	
3/22/2017	<0.01	0.0003 (J)	0.0004 (J)	0.0004 (J)			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	<0.01	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	<0.01	<0.01	<0.01			
3/12/2019						<0.01	
3/13/2019	<0.01	<0.01		<0.01	<0.01		<0.01
3/14/2019			0.0025 (J)				
4/2/2019					<0.01		
4/3/2019	0.02	<0.01	<0.01			<0.01	<0.01
4/5/2019				<0.01			
Mean	0.006364	0.004573	0.004355	0.004582	0.005	0.004591	0.005
Std. Dev.	0.004523	0.001417	0.001511	0.001387	0	0.001357	0
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.005	0.0003	0.0004	0.0004	0.005	0.0005	0.005

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	0.00207 (J)	
5/23/2016	<0.01	<0.01	<0.01	0.00361 (J)			<0.01
7/12/2016	0.0006 (J)	0.0021 (J)	0.0018 (J)	0.0032 (J)	0.0003 (J)	0.0019 (J)	0.0006 (J)
9/1/2016	0.0007 (J)	0.0025 (J)	0.0016 (J)	0.0033 (J)	<0.01	0.0023 (J)	0.0007 (J)
10/20/2016					0.0008 (J)	0.002 (J)	0.002 (J)
10/24/2016	0.0009 (J)	0.0032 (J)	0.0017 (J)	0.004 (J)			
12/6/2016					0.0009 (J)	0.0026 (J)	0.0011 (J)
12/7/2016	0.0012 (J)	0.003 (J)	0.0021 (J)	0.0034 (J)			
1/25/2017					0.0005 (J)	0.002 (J)	
1/26/2017	<0.01	0.0014 (J)	0.0016 (J)	0.0024 (J)			0.0006 (J)
3/21/2017					0.0005 (J)	0.0023 (J)	
3/22/2017	0.0006 (J)	0.0014 (J)	0.0018 (J)	0.0026 (J)			0.0005 (J)
5/23/2017					0.0005 (J)	0.0023 (J)	0.0006 (J)
5/24/2017	0.0006 (J)	0.0008 (J)	0.0015 (J)	0.0022 (J)			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	<0.01	<0.01	<0.01			
3/12/2019						0.002 (J)	
3/13/2019	<0.01	0.00098 (J)		0.0022 (J)	0.00067 (J)		0.00065 (J)
3/14/2019			0.0011 (J)				
4/2/2019					0.00069 (J)		
4/3/2019	<0.01	0.0018 (J)	0.0011 (J)			0.0019 (J)	0.00069 (J)
4/5/2019				0.0017 (J)			
Mean	0.002691	0.002471	0.002209	0.003055	0.001805	0.002397	0.001585
Std. Dev.	0.002217	0.001466	0.00141	0.0009549	0.002058	0.0008899	0.00174
Upper Lim.	0.005	0.002567	0.001767	0.003851	0.0007331	0.0026	0.005
Lower Lim.	0.0006	0.001137	0.001211	0.00226	0.0003532	0.0019	0.0005

Confidence Interval

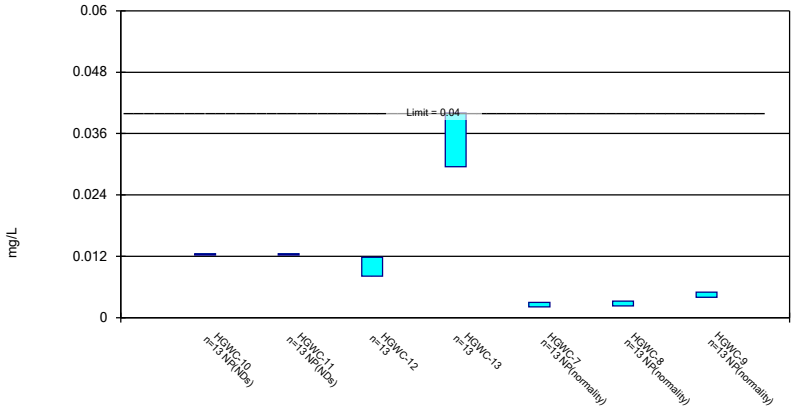
Constituent: Fluoride (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5	0.67	0.62	0.74	0.51	0.94	0.46
10/20/2016					0.4	0.56	0.56
10/24/2016	0.06 (J)	0.26 (J)	0.19 (J)	0.31			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44	0.55	0.73	1			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
10/2/2018	0.17 (J)				<0.3	0.51	0.031 (J)
10/3/2018		0.31	0.15 (J)				
10/5/2018				0.77			
3/12/2019						0.58	
3/13/2019	0.17 (J)	0.51		0.78	0.12 (J)		0.14 (J)
3/14/2019			1.1				
4/2/2019					0.097 (J)		
4/3/2019	0.082 (J)	0.43	0.3 (J)			0.63	0.14 (J)
4/5/2019				0.83			
Mean	0.2237	0.4174	0.3894	0.6535	0.1942	0.6335	0.2432
Std. Dev.	0.1541	0.1546	0.2802	0.2089	0.1242	0.1943	0.174
Upper Lim.	0.3328	0.5268	0.5879	0.8014	0.2628	0.7712	0.3665
Lower Lim.	0.1145	0.3079	0.191	0.5055	0.1122	0.4958	0.1199

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

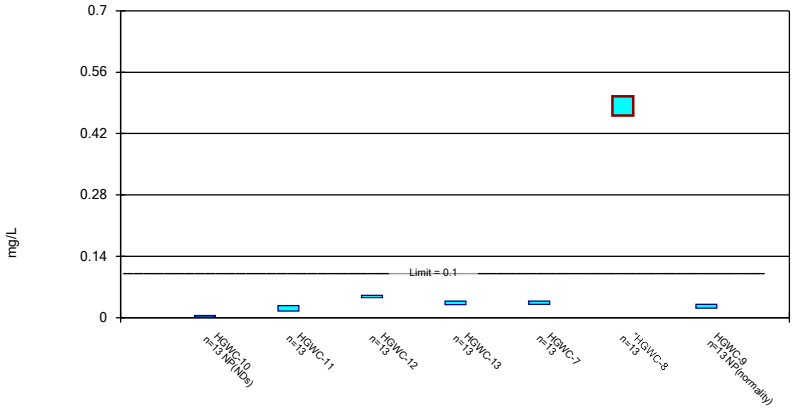


Constituent: Lithium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

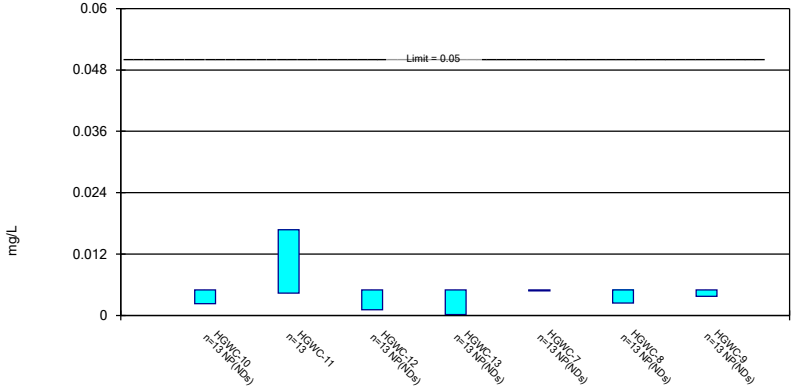


Constituent: Molybdenum Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

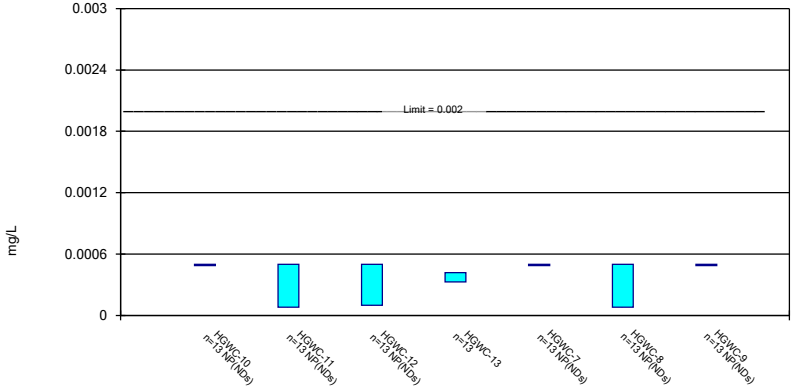


Constituent: Selenium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.025	<0.025	
5/23/2016	<0.025	<0.025	0.0107 (J)	0.0422 (J)			<0.025
7/12/2016	<0.025	<0.025	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.025	<0.025	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.025	<0.025	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.025	<0.025	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.025	<0.025	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.025	<0.025	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.025	<0.025	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.025	<0.025	0.008 (J)	0.031 (J)			
6/5/2018	<0.025	<0.025		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
10/2/2018	<0.025				0.003 (J)	0.0025 (J)	0.004 (J)
10/3/2018		<0.025	0.0083 (J)				
10/5/2018				0.027 (J)			
3/12/2019						0.0025 (J)	
3/13/2019	<0.025	<0.025		0.029 (J)	0.0024 (J)		0.004 (J)
3/14/2019			0.0058 (J)				
4/2/2019					0.002 (J)		
4/3/2019	<0.025	<0.025	0.0066 (J)			0.0025 (J)	0.004 (J)
4/5/2019				0.023 (J)			
Mean	0.0125	0.0125	0.009931	0.03478	0.003177	0.003408	0.004808
Std. Dev.	0	0	0.002487	0.007071	0.002814	0.002745	0.002373
Upper Lim.	0.0125	0.0125	0.01178	0.04004	0.003	0.0032	0.005
Lower Lim.	0.0125	0.0125	0.008082	0.02953	0.0021	0.0023	0.004

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472	0.477
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
10/2/2018	<0.01				0.039	0.47	0.028
10/3/2018		0.02	0.054				
10/5/2018				0.033			
3/12/2019						0.5	
3/13/2019	<0.01	0.012		0.033	0.04		0.028
3/14/2019			0.046				
4/2/2019					0.041		
4/3/2019	0.0021 (J)	0.01	0.049			0.5	0.03
4/5/2019				0.03			
Mean	0.003931	0.02135	0.04824	0.03379	0.03408	0.4832	0.05951
Std. Dev.	0.00168	0.008519	0.003706	0.005395	0.004641	0.02946	0.1255
Upper Lim.	0.005	0.02769	0.05099	0.0378	0.03754	0.5051	0.03
Lower Lim.	0.0014	0.01502	0.04548	0.02978	0.03063	0.4612	0.0219

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
10/2/2018	0.0023 (J)				<0.01	<0.01	<0.01
10/3/2018		0.009 (J)	<0.01				
10/5/2018				<0.01			
3/12/2019						<0.01	
3/13/2019	0.0015 (J)	0.023		<0.01	<0.01		<0.01
3/14/2019			<0.01				
4/2/2019					<0.01		
4/3/2019	<0.01	0.016	<0.01			<0.01	<0.01
4/5/2019				0.00018 (J)			
Mean	0.004454	0.01055	0.0047	0.004629	0.005	0.0048	0.0049
Std. Dev.	0.001172	0.008307	0.001082	0.001337	0	0.0007211	0.0003606
Upper Lim.	0.005	0.01672	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.0023	0.004369	0.0011	0.00018	0.005	0.0024	0.0037

Confidence Interval

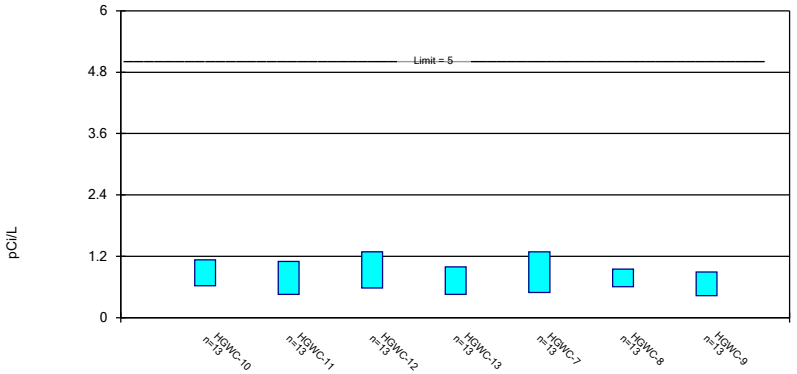
Constituent: Thallium (mg/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	8E-05 (J)	0.0002 (J)	0.0004 (J)	<0.001	7E-05 (J)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
10/2/2018	<0.001				<0.001	<0.001	<0.001
10/3/2018		<0.001	<0.001				
10/5/2018				0.00025 (J)			
3/12/2019						<0.001	
3/13/2019	<0.001	<0.001		0.00039 (J)	<0.001		<0.001
3/14/2019			<0.001				
4/2/2019					<0.001		
4/3/2019	<0.001	<0.001	<0.001			<0.001	<0.001
4/5/2019				0.00034 (J)			
Mean	0.0005	0.0004354	0.0004146	0.0003714	0.0005	0.0004031	0.0005
Std. Dev.	0	0.0001577	0.0001641	6.12E-05	0	0.0001842	0
Upper Lim.	0.0005	0.0005	0.0005	0.0004169	0.0005	0.0005	0.0005
Lower Lim.	0.0005	8E-05	0.0001	0.0003259	0.0005	8E-05	0.0005

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 7/22/2019 1:15 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/22/2019 1:16 AM

Plant Hammond Client: Georgia Power Company Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.62 (U)	0.56 (U)	
5/23/2016	0.419 (U)	0.509 (U)	1.12	0.625 (U)			0.826 (U)
7/12/2016	0.855	0.784 (U)	1.61	0.478 (U)	0.283 (U)	0.636 (U)	0.511 (U)
9/1/2016	0.844 (U)	0.261 (U)	1.23	0.595 (U)	0.703 (U)	0.818 (U)	0.762 (U)
10/20/2016					1.97	1.04 (U)	1.17
10/24/2016	0.917 (U)	1.42	1.98	1.54			
12/6/2016					2	0.771 (U)	0.126 (U)
12/7/2016	0.558 (U)	0.781 (U)	0.319 (U)	0.657 (U)			
1/25/2017					1.06 (U)	0.859 (U)	
1/26/2017	0.922 (U)	0.842 (U)	0.54 (U)	1.22			0.515 (U)
3/21/2017					0.668 (U)	0.851 (U)	
3/22/2017	0.751 (U)	0.318 (U)	0.635 (U)	0.285 (U)			0.451 (U)
5/23/2017					0.621 (U)	0.705 (U)	0.924 (U)
5/24/2017	0.725 (U)	0.687 (U)	1.01	0.655 (U)			
4/3/2018					0.538 (U)	0.311 (U)	0.732 (U)
4/4/2018	0.715 (U)	1.5	0.956	0.882 (U)			
6/5/2018	0.718 (U)	0.549 (U)		1.1 (U)	0.985 (U)		
6/6/2018			0.424 (U)			0.896 (U)	0.813 (U)
10/2/2018	0.948				0.837 (U)	1.21	0.61 (U)
10/3/2018		1.48	0.57 (U)				
10/5/2018				0.558 (U)			
3/12/2019						0.544 (U)	
3/13/2019	1.19 (U)	0.584 (U)		0.39 (U)	0.403 (U)		1 (U)
3/14/2019			0.992 (U)				
4/2/2019					0.865 (U)		
4/3/2019	1.82 (U)	0.36 (U)	0.734 (U)			0.885 (U)	0.156 (U)
4/5/2019				0.422 (U)			
Mean	0.8755	0.775	0.9323	0.7236	0.8887	0.7758	0.6612
Std. Dev.	0.3415	0.4335	0.4777	0.3649	0.5322	0.2309	0.3083
Upper Lim.	1.129	1.097	1.288	0.9949	1.284	0.9476	0.8905
Lower Lim.	0.6216	0.4527	0.5771	0.4523	0.493	0.6041	0.432

September 2019 event (AM 02)

GA EPD Based Groundwater Protection Standards Statistical Analysis Package

AM 02

Tolerance Limit (EPD)

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 12:10 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	36	94.44	n/a	0.1578	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	42	61.9	n/a	0.116	NP Inter(NDs)
Barium (mg/L)	n/a	0.14	n/a	n/a	n/a	42	0	n/a	0.116	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	36	75	n/a	0.1578	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	36	86.11	n/a	0.1578	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	36	88.89	n/a	0.1578	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	n/a	n/a	n/a	36	63.89	n/a	0.1578	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	45	31.11	n/a	0.09944	NP Inter(normality)
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	33	81.82	n/a	0.184	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	42	38.1	n/a	0.116	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	30	93.33	n/a	0.2146	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	42	100	n/a	0.116	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	42	100	n/a	0.116	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	42	97.62	n/a	0.116	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.334	n/a	n/a	n/a	42	0	No	0.01	Inter

Table E-2
EPD Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS[1]
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.14	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.003	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt[2]	7440-48-4	mg/L	N/A	0.038	0.038
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead[2]	7439-92-1	mg/L	N/A	0.005	0.005
Lithium[2]	7439-93-2	mg/L	N/A	0.03	0.03
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum[2]	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.33	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

[1]GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

[2]Constituent without established EPA MCL.

Confidence Interval (EPD) - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:48 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**HGWC-13**	**0.417**	**0.3387**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-11**	**0.02686**	**0.01509**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-12**	**0.05113**	**0.04589**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-13**	**0.03719**	**0.02928**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-7**	**0.039**	**0.03101**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-8**	**0.51**	**0.4645**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-9**	**0.03**	**0.0229**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**NP (normality)**

Confidence Interval (EPD) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:48 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	HGWC-10	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-11	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-12	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-13	0.003	0.0003	0.006	No	12	83.33	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-7	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-8	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-9	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-10	0.005	0.005	0.01	No	14	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0053	0.0015	0.01	No	14	57.14	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004997	0.003131	0.01	No	14	14.29	No	0.01	Param.
Arsenic (mg/L)	**HGWC-13**	**0.417**	**0.3387**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Arsenic (mg/L)	HGWC-7	0.005	0.0019	0.01	No	14	92.86	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.005	0.005	0.01	No	14	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.005	0.0008	0.01	No	14	78.57	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-10	0.09713	0.07163	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.06359	0.03158	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1239	0.0925	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.09822	0.07201	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07722	0.06992	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08083	0.06546	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-9	0.1274	0.105	2	No	14	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-10	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-11	0.003	0.00009	0.004	No	12	66.67	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-12	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-13	0.003	0.00011	0.004	No	12	83.33	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-7	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-8	0.003	0.000074	0.004	No	12	91.67	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-9	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-10	0.0025	0.0001	0.005	No	12	41.67	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-11	0.0025	0.0001	0.005	No	12	75	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-12	0.0025	0.0002	0.005	No	12	75	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-13	0.0025	0.0025	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-7	0.0025	0.0001	0.005	No	12	66.67	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-8	0.0017	0.0001	0.005	No	12	8.333	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-9	0.0025	0.0001	0.005	No	12	75	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-10	0.02	0.01	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-11	0.01	0.0003	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-12	0.01	0.0025	0.1	No	12	83.33	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-13	0.01	0.0004	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-7	0.071	0.01	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-8	0.01	0.0005	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-9	0.01	0.01	0.1	No	12	100	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-10	0.005	0.0006	0.038	No	12	50	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-11	0.00243	0.001034	0.038	No	12	16.67	No	0.01	Param.
Cobalt (mg/L)	HGWC-12	0.005	0.0011	0.038	No	12	16.67	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-13	0.003911	0.002391	0.038	No	12	8.333	No	0.01	Param.
Cobalt (mg/L)	HGWC-7	0.001022	0.0003639	0.038	No	12	25	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-8	0.0026	0.0019	0.038	No	12	8.333	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-9	0.005	0.00057	0.038	No	12	16.67	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-10	0.3211	0.1191	4	No	15	13.33	No	0.01	Param.

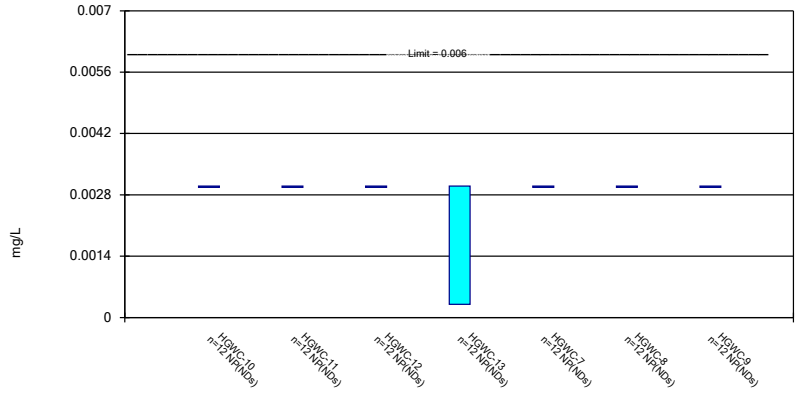
Confidence Interval (EPD) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:48 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Fluoride (mg/L)	HGWC-11	0.5185	0.3166	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.5651	0.1965	4	No	15	6.667	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.789	0.5162	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.2506	0.1106	4	No	15	13.33	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.7533	0.4946	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.358	0.1307	4	No	15	13.33	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.03	0.03	0.03	No	14	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-11	0.03	0.03	0.03	No	14	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-12	0.01171	0.008303	0.03	No	14	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.03961	0.02999	0.03	No	14	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.003	0.002	0.03	No	14	7.143	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0024	0.03	No	14	7.143	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-9	0.0048	0.004	0.03	No	14	7.143	No	0.01	NP (normality)
Mercury (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-11	0.0005	0.0005	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-12	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-13	0.0005	0.00005	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-8	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	HGWC-10	0.005	0.0014	0.01	No	14	64.29	No	0.01	NP (NDs)
Molybdenum (mg/L)	**HGWC-11**	**0.02686**	**0.01509**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-12**	**0.05113**	**0.04589**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-13**	**0.03719**	**0.02928**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-7**	**0.039**	**0.03101**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-8**	**0.51**	**0.4645**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-9**	**0.03**	**0.0229**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**NP (normality)**
Selenium (mg/L)	HGWC-10	0.01	0.0041	0.05	No	14	78.57	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01639	0.005049	0.05	No	14	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.01	0.0011	0.05	No	14	92.86	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-13	0.01	0.00018	0.05	No	14	92.86	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-7	0.01	0.01	0.05	No	14	100	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-8	0.01	0.0024	0.05	No	14	92.86	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-9	0.01	0.0037	0.05	No	14	92.86	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-10	0.001	0.001	0.002	No	14	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-11	0.001	0.00008	0.002	No	14	85.71	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-12	0.001	0.0001	0.002	No	14	71.43	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004145	0.0003309	0.002	No	14	0	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.001	0.001	0.002	No	14	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-8	0.001	0.00009	0.002	No	14	71.43	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-9	0.001	0.001	0.002	No	14	100	No	0.01	NP (NDs)
Total Radium (pCi/L)	HGWC-10	1.134	0.6573	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-11	1.198	0.4958	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-12	1.259	0.609	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-13	0.9906	0.4874	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-7	1.185	0.5387	5	No	14	0	sqrt(x)	0.01	Param.
Total Radium (pCi/L)	HGWC-8	0.9991	0.6274	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-9	0.859	0.4302	5	No	14	0	No	0.01	Param.

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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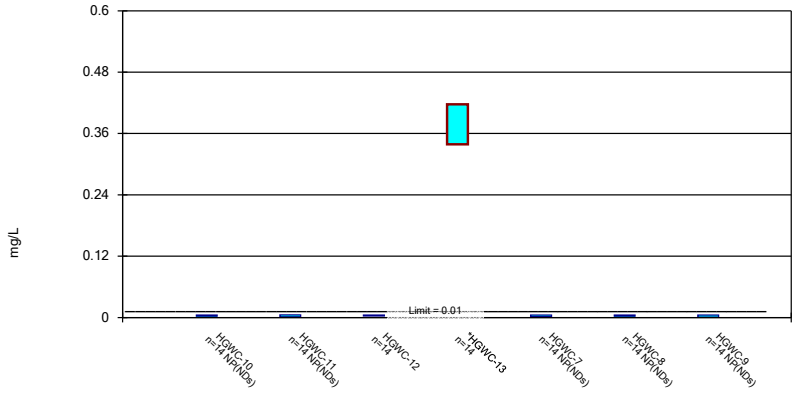
Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



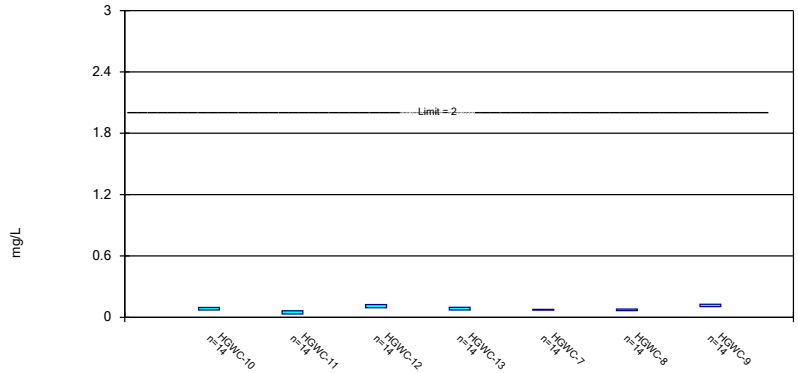
Constituent: Arsenic Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



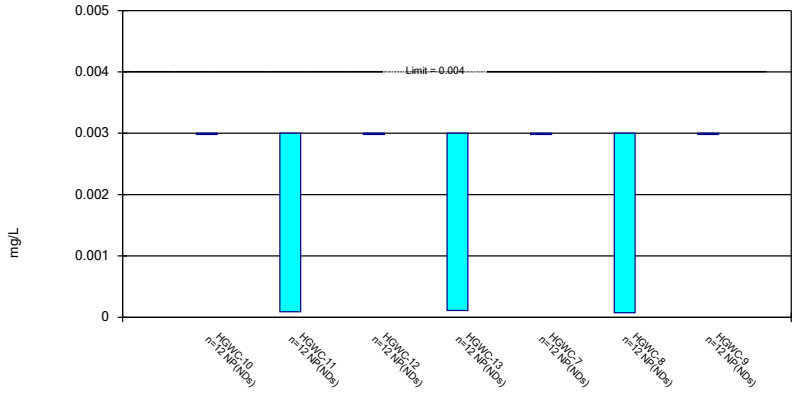
Constituent: Barium Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Antimony (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	0.0003 (J)	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	<0.003	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	<0.003		<0.003	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	<0.003	<0.003			<0.003	<0.003
4/5/2019				0.00021 (J)			
9/24/2019						<0.003	
9/25/2019					<0.003		
9/26/2019				<0.003			
9/27/2019	<0.003	<0.003	<0.003				<0.003
Mean	0.003	0.003	0.003	0.002543	0.003	0.003	0.003
Std. Dev.	0	0	0	0.001069	0	0	0
Upper Lim.	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Lower Lim.	0.003	0.003	0.003	0.0003	0.003	0.003	0.003

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
10/2/2018	<0.005				0.0019 (J)	<0.005	<0.005
10/3/2018		<0.005	0.0037 (J)				
10/5/2018				0.34			
3/12/2019						<0.005	
3/13/2019	<0.005	0.0024 (J)		0.42	<0.005		0.00075 (J)
3/14/2019			0.0026 (J)				
4/2/2019					<0.005		
4/3/2019	<0.005	0.00094 (J)	0.0022 (J)			<0.005	<0.005
4/5/2019				0.36			
9/24/2019						<0.005	
9/25/2019					<0.005		
9/26/2019				0.44			
9/27/2019	<0.005	0.0018 (J)	0.0061				0.00037 (J)
Mean	0.005	0.003796	0.004064	0.3779	0.004779	0.005	0.004066
Std. Dev.	0	0.001753	0.001317	0.05528	0.0008285	0	0.001859
Upper Lim.	0.005	0.0053	0.004997	0.417	0.005	0.005	0.005
Lower Lim.	0.005	0.0015	0.003131	0.3387	0.0019	0.005	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722	0.0791	
3/22/2017	0.0962	0.0346	0.112	0.0755			0.122
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075	0.065	0.1
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
10/2/2018	0.076				0.078	0.061	0.11
10/3/2018		0.033	0.087				
10/5/2018				0.076			
3/12/2019						0.062	
3/13/2019	0.044	0.024		0.1	0.083		0.1
3/14/2019			0.081				
4/2/2019					0.072		
4/3/2019	0.076	0.023	0.077			0.066	0.12
4/5/2019				0.079			
9/24/2019						0.053	
9/25/2019					0.061		
9/26/2019				0.11			
9/27/2019	0.078	0.033	0.096				0.11
Mean	0.08438	0.04759	0.1082	0.08511	0.07357	0.07314	0.1162
Std. Dev.	0.018	0.02259	0.02218	0.0185	0.005153	0.01085	0.01583
Upper Lim.	0.09713	0.06359	0.1239	0.09822	0.07722	0.08083	0.1274
Lower Lim.	0.07163	0.03158	0.0925	0.07201	0.06992	0.06546	0.105

Confidence Interval

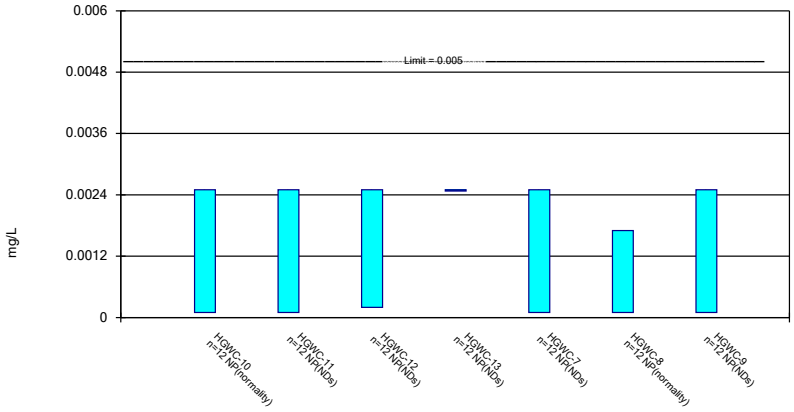
Constituent: Beryllium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	9E-05 (J)	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	0.0001 (J)		6.2E-05 (J)	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	0.00017 (J)	<0.003			7.4E-05 (J)	<0.003
4/5/2019				<0.003			
9/24/2019						<0.003	
9/25/2019					<0.003		
9/26/2019				0.00011 (J)			
9/27/2019	<0.003	8.6E-05 (J)	<0.003				<0.003
Mean	0.003	0.002037	0.003	0.002514	0.003	0.002756	0.003
Std. Dev.	0	0.001422	0	0.001134	0	0.0008447	0
Upper Lim.	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Lower Lim.	0.003	9E-05	0.003	0.00011	0.003	7.4E-05	0.003

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

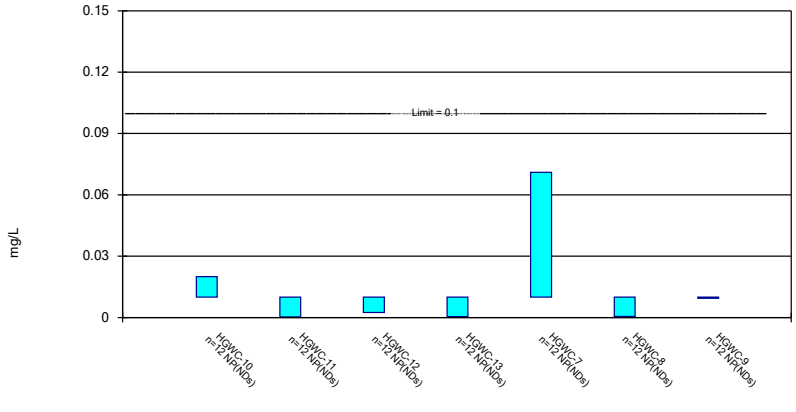


Constituent: Cadmium Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

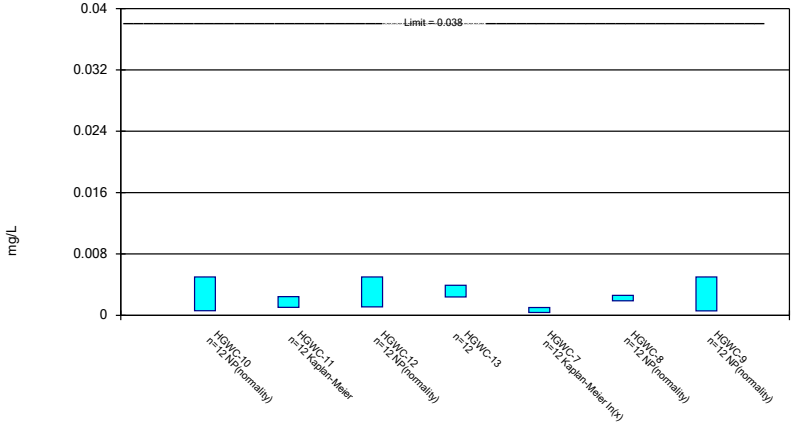


Constituent: Chromium Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

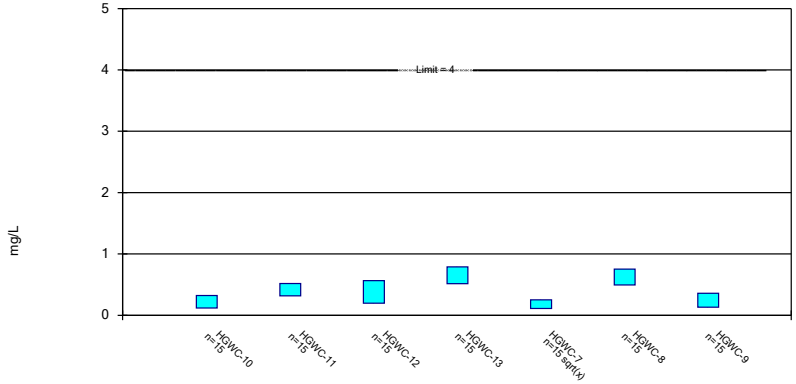


Constituent: Cobalt Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 12/16/2019 2:46 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.0025	0.00024 (J)	
5/23/2016	0.000115 (J)	<0.0025	<0.0025	<0.0025			<0.0025
7/12/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0002 (J)	<0.0025
9/1/2016	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025	0.0001 (J)	<0.0025
10/20/2016					<0.0025	0.0001 (J)	0.0002 (J)
10/24/2016	0.0001 (J)	<0.0025	<0.0025	<0.0025			
12/6/2016					0.0002 (J)	0.0017	0.0001 (J)
12/7/2016	0.0001 (J)	0.0001 (J)	0.0002 (J)	<0.0025			
1/25/2017					0.0002 (J)	0.0002 (J)	
1/26/2017	<0.0025	<0.0025	<0.0025	<0.0025			<0.0025
3/21/2017					0.0002 (J)	0.0002 (J)	
3/22/2017	0.0001 (J)	0.0001 (J)	0.0003 (J)	<0.0025			7E-05 (J)
5/23/2017					0.0001 (J)	0.0003 (J)	<0.0025
5/24/2017	0.0002 (J)	<0.0025	9E-05 (J)	<0.0025			
4/3/2018					<0.0025	<0.0025	<0.0025
4/4/2018	<0.0025	<0.0025	<0.0025	<0.0025			
3/12/2019						0.0002 (J)	
3/13/2019	<0.0025	<0.0025		<0.0025	<0.0025		<0.0025
3/14/2019			<0.0025				
4/2/2019					<0.0025		
4/3/2019	0.0001 (J)	9.6E-05 (J)	<0.0025			0.00032 (J)	<0.0025
4/5/2019				<0.0025			
9/24/2019						0.0002 (J)	
9/25/2019					<0.0025		
9/26/2019				<0.0025			
9/27/2019	<0.0025	<0.0025	<0.0025				<0.0025
Mean	0.00111	0.0019	0.001924	0.0025	0.001725	0.0005217	0.001906
Std. Dev.	0.001228	0.001086	0.001043	0	0.001145	0.0007594	0.001075
Upper Lim.	0.0025	0.0025	0.0025	0.0025	0.0025	0.0017	0.0025
Lower Lim.	0.0001	0.0001	0.0002	0.0025	0.0001	0.0001	0.0001

Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	<0.01	<0.01	<0.01			<0.01
7/12/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	<0.01	<0.01	<0.01			
12/6/2016					<0.01	<0.01	<0.01
12/7/2016	<0.01	<0.01	<0.01	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	<0.01	<0.01	<0.01	<0.01			<0.01
3/21/2017					<0.01	0.0005 (J)	
3/22/2017	<0.01	0.0003 (J)	0.0004 (J)	0.0004 (J)			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	<0.01	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	<0.01	<0.01	<0.01			
3/12/2019						<0.01	
3/13/2019	<0.01	<0.01		<0.01	<0.01		<0.01
3/14/2019			0.0025 (J)				
4/2/2019					<0.01		
4/3/2019	0.02	<0.01	<0.01			<0.01	<0.01
4/5/2019				<0.01			
9/24/2019						<0.01	
9/25/2019					0.071		
9/26/2019				<0.01			
9/27/2019	<0.01	<0.01	<0.01				<0.01
Mean	0.01083	0.009192	0.008575	0.0092	0.01508	0.009208	0.01
Std. Dev.	0.002887	0.0028	0.003358	0.002771	0.01761	0.002742	0
Upper Lim.	0.02	0.01	0.01	0.01	0.071	0.01	0.01
Lower Lim.	0.01	0.0003	0.0025	0.0004	0.01	0.0005	0.01

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	0.00207 (J)	
5/23/2016	<0.005	<0.005	<0.005	0.00361 (J)			<0.005
7/12/2016	0.0006 (J)	0.0021 (J)	0.0018 (J)	0.0032 (J)	0.0003 (J)	0.0019 (J)	0.0006 (J)
9/1/2016	0.0007 (J)	0.0025 (J)	0.0016 (J)	0.0033 (J)	<0.005	0.0023 (J)	0.0007 (J)
10/20/2016					0.0008 (J)	0.002 (J)	0.002 (J)
10/24/2016	0.0009 (J)	0.0032 (J)	0.0017 (J)	0.004 (J)			
12/6/2016					0.0009 (J)	0.0026 (J)	0.0011 (J)
12/7/2016	0.0012 (J)	0.003 (J)	0.0021 (J)	0.0034 (J)			
1/25/2017					0.0005 (J)	0.002 (J)	
1/26/2017	<0.005	0.0014 (J)	0.0016 (J)	0.0024 (J)			0.0006 (J)
3/21/2017					0.0005 (J)	0.0023 (J)	
3/22/2017	0.0006 (J)	0.0014 (J)	0.0018 (J)	0.0026 (J)			0.0005 (J)
5/23/2017					0.0005 (J)	0.0023 (J)	0.0006 (J)
5/24/2017	0.0006 (J)	0.0008 (J)	0.0015 (J)	0.0022 (J)			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	<0.005			
3/12/2019						0.002 (J)	
3/13/2019	<0.005	0.00098 (J)		0.0022 (J)	0.00067 (J)		0.00065 (J)
3/14/2019			0.0011 (J)				
4/2/2019					0.00069 (J)		
4/3/2019	<0.005	0.0018 (J)	0.0011 (J)			0.0019 (J)	0.00069 (J)
4/5/2019				0.0017 (J)			
9/24/2019						0.0015 (J)	
9/25/2019					0.0026		
9/26/2019				0.0042			
9/27/2019	<0.005	0.00071 (J)	0.0012 (J)				0.00057 (J)
Mean	0.002883	0.002324	0.002125	0.003151	0.001872	0.002322	0.001501
Std. Dev.	0.002217	0.001488	0.001376	0.0009686	0.001976	0.0008871	0.001685
Upper Lim.	0.005	0.00243	0.005	0.003911	0.001022	0.0026	0.005
Lower Lim.	0.0006	0.001034	0.0011	0.002391	0.0003639	0.0019	0.00057

Confidence Interval

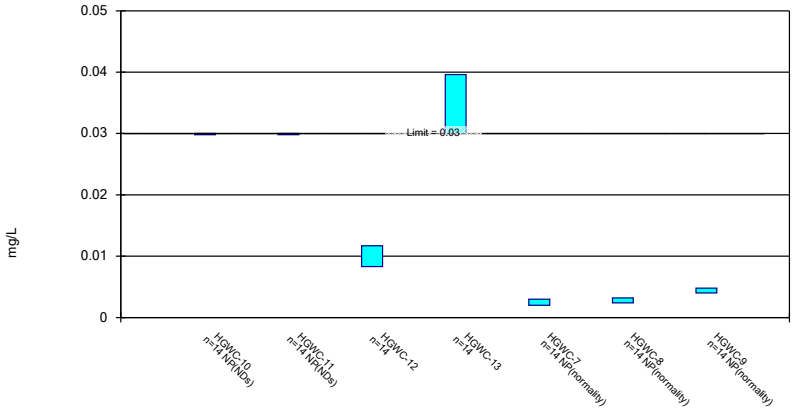
Constituent: Fluoride (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5	0.67	0.62	0.74	0.51	0.94	0.46
10/20/2016					0.4	0.56	0.56
10/24/2016	0.06 (J)	0.26 (J)	0.19 (J)	0.31			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44	0.55	0.73	1			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
10/2/2018	0.17 (J)				<0.3	0.51	0.031 (J)
10/3/2018		0.31	0.15 (J)				
10/5/2018				0.77			
3/12/2019						0.58	
3/13/2019	0.17 (J)	0.51		0.78	0.12 (J)		0.14 (J)
3/14/2019			1.1				
4/2/2019					0.097 (J)		
4/3/2019	0.082 (J)	0.43	0.3 (J)			0.63	0.14 (J)
4/5/2019				0.83			
9/24/2019						0.49	
9/25/2019					0.1 (J)		
9/26/2019				0.64			
9/27/2019	0.17 (J)	0.42	0.26 (J)				0.26 (J)
Mean	0.2201	0.4175	0.3808	0.6526	0.1879	0.6239	0.2443
Std. Dev.	0.1491	0.1489	0.272	0.2013	0.1222	0.1909	0.1678
Upper Lim.	0.3211	0.5185	0.5651	0.789	0.2506	0.7533	0.358
Lower Lim.	0.1191	0.3166	0.1965	0.5162	0.1106	0.4946	0.1307

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

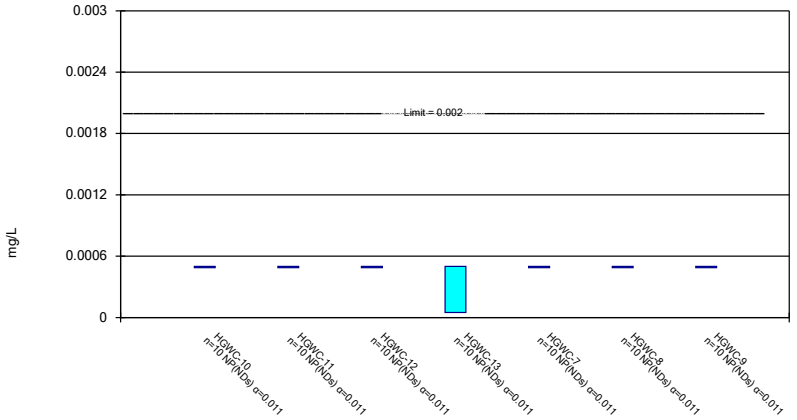


Constituent: Lithium Analysis Run 12/16/2019 2:47 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

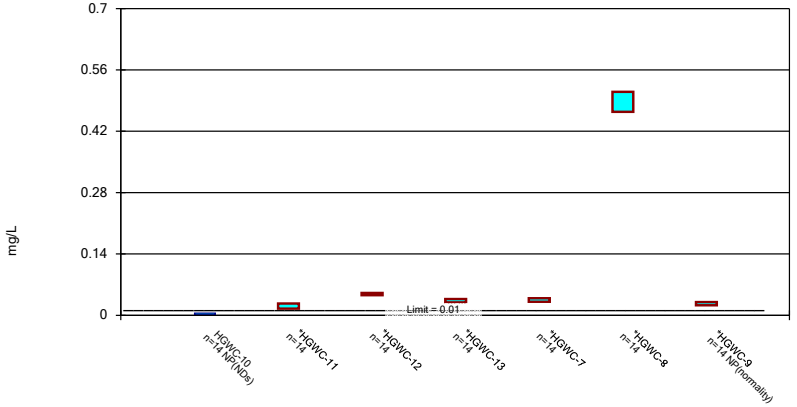


Constituent: Mercury Analysis Run 12/16/2019 2:47 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

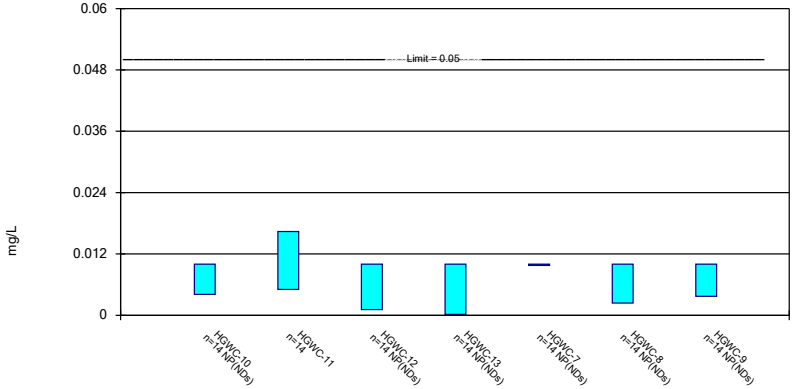


Constituent: Molybdenum Analysis Run 12/16/2019 2:47 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 12/16/2019 2:47 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.03	<0.03	
5/23/2016	<0.03	<0.03	0.0107 (J)	0.0422 (J)			<0.03
7/12/2016	<0.03	<0.03	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.03	<0.03	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.03	<0.03	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.03	<0.03	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.03	<0.03	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.03	<0.03	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.03	<0.03	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.03	<0.03	0.008 (J)	0.031 (J)			
6/5/2018	<0.03	<0.03		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
10/2/2018	<0.03				0.003 (J)	0.0025 (J)	0.004 (J)
10/3/2018		<0.03	0.0083 (J)				
10/5/2018				0.027 (J)			
3/12/2019						0.0025 (J)	
3/13/2019	<0.03	<0.03		0.029 (J)	0.0024 (J)		0.004 (J)
3/14/2019			0.0058 (J)				
4/2/2019					0.002 (J)		
4/3/2019	<0.03	<0.03	0.0066 (J)			0.0025 (J)	0.004 (J)
4/5/2019				0.023 (J)			
9/24/2019						0.0024 (J)	
9/25/2019					0.0019 (J)		
9/26/2019				0.035			
9/27/2019	<0.03	<0.03	0.011				0.0044 (J)
Mean	0.03	0.03	0.01001	0.0348	0.004336	0.004586	0.006029
Std. Dev.	0	0	0.002406	0.006794	0.007392	0.007319	0.006919
Upper Lim.	0.03	0.03	0.01171	0.03961	0.003	0.0032	0.0048
Lower Lim.	0.03	0.03	0.008303	0.02999	0.002	0.0024	0.004

Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.0005	<0.0005	
5/23/2016	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005
7/12/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
9/1/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10/20/2016					<0.0005	<0.0005	<0.0005
10/24/2016	<0.0005	<0.0005	<0.0005	<0.0005			
12/6/2016					<0.0005	<0.0005	<0.0005
12/7/2016	<0.0005	<0.0005	<0.0005	<0.0005			
1/25/2017					<0.0005	<0.0005	
1/26/2017	5E-05 (J)	5E-05 (J)	<0.0005	4E-05 (J)			4E-05 (J)
3/21/2017					<0.0005	<0.0005	
3/22/2017	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005
5/23/2017					<0.0005	<0.0005	<0.0005
5/24/2017	<0.0005	<0.0005	<0.0005	5E-05 (J)			
4/3/2018					<0.0005	<0.0005	<0.0005
4/4/2018	<0.0005	<0.0005	<0.0005	<0.0005			
3/12/2019						<0.0005	
3/13/2019	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005
3/14/2019			<0.0005				
Mean	0.000455	0.000455	0.0005	0.000409	0.0005	0.0005	0.000454
Std. Dev.	0.0001423	0.0001423	0	0.0001919	0	0	0.0001455
Upper Lim.	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.0005	0.0005	0.0005	5E-05	0.0005	0.0005	0.0005

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472	0.477
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
10/2/2018	<0.01				0.039	0.47	0.028
10/3/2018		0.02	0.054				
10/5/2018				0.033			
3/12/2019						0.5	
3/13/2019	<0.01	0.012		0.033	0.04		0.028
3/14/2019			0.046				
4/2/2019					0.041		
4/3/2019	0.0021 (J)	0.01	0.049			0.5	0.03
4/5/2019				0.03			
9/24/2019						0.54	
9/25/2019					0.047		
9/26/2019				0.026			
9/27/2019	0.0014 (J)	0.016	0.052				0.033
Mean	0.00375	0.02097	0.04851	0.03324	0.03501	0.4872	0.05761
Std. Dev.	0.00175	0.008309	0.0037	0.005586	0.005639	0.03212	0.1208
Upper Lim.	0.005	0.02686	0.05113	0.03719	0.039	0.51	0.03
Lower Lim.	0.0014	0.01509	0.04589	0.02928	0.03101	0.4645	0.0229

Confidence Interval

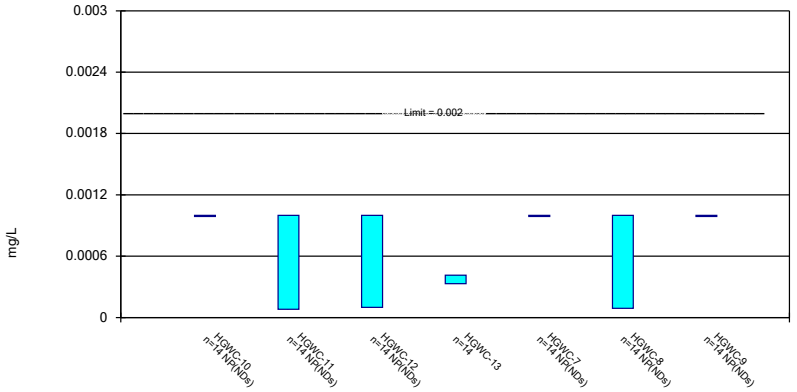
Constituent: Selenium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
10/2/2018	0.0023 (J)				<0.01	<0.01	<0.01
10/3/2018		0.009 (J)	<0.01				
10/5/2018				<0.01			
3/12/2019						<0.01	
3/13/2019	0.0015 (J)	0.023		<0.01	<0.01		<0.01
3/14/2019			<0.01				
4/2/2019					<0.01		
4/3/2019	<0.01	0.016	<0.01			<0.01	<0.01
4/5/2019				0.00018 (J)			
9/24/2019						<0.01	
9/25/2019					<0.01		
9/26/2019				<0.01			
9/27/2019	<0.01	0.013	<0.01				<0.01
Mean	0.008421	0.01072	0.009364	0.009299	0.01	0.009457	0.00955
Std. Dev.	0.00318	0.008008	0.002379	0.002625	0	0.002031	0.001684
Upper Lim.	0.01	0.01639	0.01	0.01	0.01	0.01	0.01
Lower Lim.	0.0041	0.005049	0.0011	0.00018	0.01	0.0024	0.0037

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 12/16/2019 2:47 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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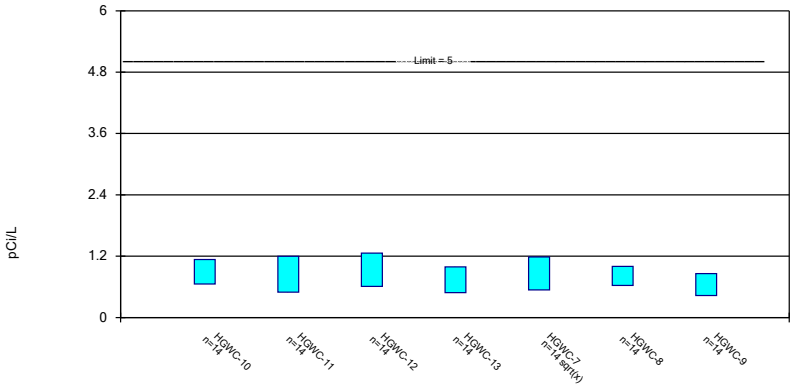
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 12/16/2019 2:47 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	8E-05 (J)	0.0002 (J)	0.0004 (J)	<0.001	7E-05 (J)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
10/2/2018	<0.001				<0.001	<0.001	<0.001
10/3/2018		<0.001	<0.001				
10/5/2018				0.00025 (J)			
3/12/2019						<0.001	
3/13/2019	<0.001	<0.001		0.00039 (J)	<0.001		<0.001
3/14/2019			<0.001				
4/2/2019					<0.001		
4/3/2019	<0.001	<0.001	<0.001			<0.001	<0.001
4/5/2019				0.00034 (J)			
9/24/2019						0.00011 (J)	
9/25/2019					<0.001		
9/26/2019				0.00039 (J)			
9/27/2019	<0.001	<0.001	8.8E-05 (J)				<0.001
Mean	0.001	0.0008686	0.0007484	0.0003727	0.001	0.0007393	0.001
Std. Dev.	0	0.0003341	0.0004136	5.901E-05	0	0.0004279	0
Upper Lim.	0.001	0.001	0.001	0.0004145	0.001	0.001	0.001
Lower Lim.	0.001	8E-05	0.0001	0.0003309	0.001	9E-05	0.001

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 12/16/2019 2:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.62 (U)	0.56 (U)	
5/23/2016	0.419 (U)	0.509 (U)	1.12	0.625 (U)			0.826 (U)
7/12/2016	0.855	0.784 (U)	1.61	0.478 (U)	0.283 (U)	0.636 (U)	0.511 (U)
9/1/2016	0.844 (U)	0.261 (U)	1.23	0.595 (U)	0.703 (U)	0.818 (U)	0.762 (U)
10/20/2016					1.97	1.04 (U)	1.17
10/24/2016	0.917 (U)	1.42	1.98	1.54			
12/6/2016					2	0.771 (U)	0.126 (U)
12/7/2016	0.558 (U)	0.781 (U)	0.319 (U)	0.657 (U)			
1/25/2017					1.06 (U)	0.859 (U)	
1/26/2017	0.922 (U)	0.842 (U)	0.54 (U)	1.22			0.515 (U)
3/21/2017					0.668 (U)	0.851 (U)	
3/22/2017	0.751 (U)	0.318 (U)	0.635 (U)	0.285 (U)			0.451 (U)
5/23/2017					0.621 (U)	0.705 (U)	0.924 (U)
5/24/2017	0.725 (U)	0.687 (U)	1.01	0.655 (U)			
4/3/2018					0.538 (U)	0.311 (U)	0.732 (U)
4/4/2018	0.715 (U)	1.5	0.956	0.882 (U)			
6/5/2018	0.718 (U)	0.549 (U)		1.1 (U)	0.985 (U)		
6/6/2018			0.424 (U)			0.896 (U)	0.813 (U)
10/2/2018	0.948				0.837 (U)	1.21	0.61 (U)
10/3/2018		1.48	0.57 (U)				
10/5/2018				0.558 (U)			
3/12/2019						0.544 (U)	
3/13/2019	1.19 (U)	0.584 (U)		0.39 (U)	0.403 (U)		1 (U)
3/14/2019			0.992 (U)				
4/2/2019					0.865 (U)		
4/3/2019	1.82 (U)	0.36 (U)	0.734 (U)			0.885 (U)	0.156 (U)
4/5/2019				0.422 (U)			
9/24/2019						1.3	
9/25/2019					0.884 (U)		
9/26/2019				0.939 (U)			
9/27/2019	1.16 (U)	1.78	0.958 (U)				0.428 (U)
Mean	0.8959	0.8468	0.9341	0.739	0.8884	0.8133	0.6446
Std. Dev.	0.3368	0.4956	0.459	0.3552	0.5113	0.2624	0.3027
Upper Lim.	1.134	1.198	1.259	0.9906	1.185	0.9991	0.859
Lower Lim.	0.6573	0.4958	0.609	0.4874	0.5387	0.6274	0.4302

USEPA Based Groundwater Protection Standards Statistical Analysis Package

AM 02

Tolerance Limit (USEPA)

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:06 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	36	94.44	n/a	0.1578	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	42	61.9	n/a	0.116	NP Inter(NDs)
Barium (mg/L)	n/a	0.14	n/a	n/a	n/a	42	0	n/a	0.116	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	36	75	n/a	0.1578	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	36	86.11	n/a	0.1578	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	36	88.89	n/a	0.1578	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	n/a	n/a	n/a	36	63.89	n/a	0.1578	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.36	n/a	n/a	n/a	45	31.11	n/a	0.09944	NP Inter(normality)
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	33	81.82	n/a	0.184	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	42	38.1	n/a	0.116	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	30	93.33	n/a	0.2146	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	42	100	n/a	0.116	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	42	100	n/a	0.116	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	42	97.62	n/a	0.116	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.334	n/a	n/a	n/a	42	0	No	0.01	Inter

Table D-2
USEPA Based Groundwater Protection Standards
Plant Hammond - Ash Pond 1
Floyd County, Georgia

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS[1]
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.14	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.003	0.005
Chromium (III+VI)	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt[2]	7440-48-4	mg/L	0.006	0.038	0.038
Fluoride	16984-48-8	mg/L	4	0.36	4
Lead[3]	7439-92-1	mg/L	0.015	0.005	0.015
Lithium[2]	7439-93-2	mg/L	0.04	0.03	0.04
Mercury	7439-97-6	mg/L	0.002	0.0005	0.002
Molybdenum[2]	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.33	5

Notes:

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

[1]GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

[2]Regional Screening Level applied for constituent per CCR Rule Ammendment, July 30, 2018.

[3]Currently, there is no EPA MCL established for lead. The value listed is the established EPA Action Level for drinking water.

Confidence Interval (USEPA) - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:44 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**HGWC-13**	**0.417**	**0.3387**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**HGWC-8**	**0.51**	**0.4645**	**0.1**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**

Confidence Interval (USEPA) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:44 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	HGWC-10	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-11	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-12	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-13	0.003	0.0003	0.006	No	12	83.33	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-7	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-8	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Antimony (mg/L)	HGWC-9	0.003	0.003	0.006	No	12	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-10	0.005	0.005	0.01	No	14	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-11	0.0053	0.0015	0.01	No	14	57.14	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-12	0.004997	0.003131	0.01	No	14	14.29	No	0.01	Param.
Arsenic (mg/L)	**HGWC-13**	**0.417**	**0.3387**	**0.01**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Arsenic (mg/L)	HGWC-7	0.005	0.0019	0.01	No	14	92.86	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-8	0.005	0.005	0.01	No	14	100	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-9	0.005	0.0008	0.01	No	14	78.57	No	0.01	NP (NDs)
Barium (mg/L)	HGWC-10	0.09713	0.07163	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-11	0.06359	0.03158	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-12	0.1239	0.0925	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-13	0.09822	0.07201	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-7	0.07722	0.06992	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-8	0.08083	0.06546	2	No	14	0	No	0.01	Param.
Barium (mg/L)	HGWC-9	0.1274	0.105	2	No	14	0	No	0.01	Param.
Beryllium (mg/L)	HGWC-10	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-11	0.003	0.00009	0.004	No	12	66.67	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-12	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-13	0.003	0.00011	0.004	No	12	83.33	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-7	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-8	0.003	0.000074	0.004	No	12	91.67	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-9	0.003	0.003	0.004	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-10	0.0025	0.0001	0.005	No	12	41.67	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-11	0.0025	0.0001	0.005	No	12	75	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-12	0.0025	0.0002	0.005	No	12	75	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-13	0.0025	0.0025	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-7	0.0025	0.0001	0.005	No	12	66.67	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-8	0.0017	0.0001	0.005	No	12	8.333	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-9	0.0025	0.0001	0.005	No	12	75	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-10	0.02	0.01	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-11	0.01	0.0003	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-12	0.01	0.0025	0.1	No	12	83.33	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-13	0.01	0.0004	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-7	0.071	0.01	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-8	0.01	0.0005	0.1	No	12	91.67	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-9	0.01	0.01	0.1	No	12	100	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-10	0.005	0.0006	0.038	No	12	50	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-11	0.00243	0.001034	0.038	No	12	16.67	No	0.01	Param.
Cobalt (mg/L)	HGWC-12	0.005	0.0011	0.038	No	12	16.67	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-13	0.003911	0.002391	0.038	No	12	8.333	No	0.01	Param.
Cobalt (mg/L)	HGWC-7	0.001022	0.0003639	0.038	No	12	25	ln(x)	0.01	Param.
Cobalt (mg/L)	HGWC-8	0.0026	0.0019	0.038	No	12	8.333	No	0.01	NP (normality)
Cobalt (mg/L)	HGWC-9	0.005	0.00057	0.038	No	12	16.67	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-10	0.3211	0.1191	4	No	15	13.33	No	0.01	Param.

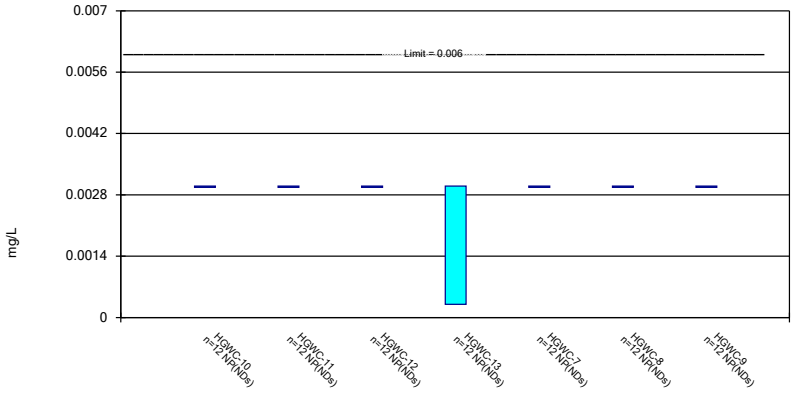
Confidence Interval (USEPA) - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-1 Printed 12/16/2019, 2:44 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Fluoride (mg/L)	HGWC-11	0.5185	0.3166	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-12	0.5651	0.1965	4	No	15	6.667	No	0.01	Param.
Fluoride (mg/L)	HGWC-13	0.789	0.5162	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-7	0.2506	0.1106	4	No	15	13.33	sqrt(x)	0.01	Param.
Fluoride (mg/L)	HGWC-8	0.7533	0.4946	4	No	15	0	No	0.01	Param.
Fluoride (mg/L)	HGWC-9	0.358	0.1307	4	No	15	13.33	No	0.01	Param.
Lithium (mg/L)	HGWC-10	0.03	0.03	0.04	No	14	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-11	0.03	0.03	0.04	No	14	100	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-12	0.01171	0.008303	0.04	No	14	0	No	0.01	Param.
Lithium (mg/L)	HGWC-13	0.03961	0.02999	0.04	No	14	0	No	0.01	Param.
Lithium (mg/L)	HGWC-7	0.003	0.002	0.04	No	14	7.143	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-8	0.0032	0.0024	0.04	No	14	7.143	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-9	0.0048	0.004	0.04	No	14	7.143	No	0.01	NP (normality)
Mercury (mg/L)	HGWC-10	0.0005	0.0005	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-11	0.0005	0.0005	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-12	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-13	0.0005	0.00005	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-7	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-8	0.0005	0.0005	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	HGWC-9	0.0005	0.0005	0.002	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	HGWC-10	0.005	0.0014	0.1	No	14	64.29	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-11	0.02686	0.01509	0.1	No	14	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-12	0.05113	0.04589	0.1	No	14	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-13	0.03719	0.02928	0.1	No	14	0	No	0.01	Param.
Molybdenum (mg/L)	HGWC-7	0.039	0.03101	0.1	No	14	0	No	0.01	Param.
Molybdenum (mg/L)	**HGWC-8**	**0.51**	**0.4645**	**0.1**	**Yes**	**14**	**0**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	HGWC-9	0.03	0.0229	0.1	No	14	0	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-10	0.01	0.0041	0.05	No	14	78.57	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-11	0.01639	0.005049	0.05	No	14	0	No	0.01	Param.
Selenium (mg/L)	HGWC-12	0.01	0.0011	0.05	No	14	92.86	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-13	0.01	0.00018	0.05	No	14	92.86	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-7	0.01	0.01	0.05	No	14	100	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-8	0.01	0.0024	0.05	No	14	92.86	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-9	0.01	0.0037	0.05	No	14	92.86	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-10	0.001	0.001	0.002	No	14	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-11	0.001	0.00008	0.002	No	14	85.71	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-12	0.001	0.0001	0.002	No	14	71.43	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-13	0.0004145	0.0003309	0.002	No	14	0	No	0.01	Param.
Thallium (mg/L)	HGWC-7	0.001	0.001	0.002	No	14	100	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-8	0.001	0.00009	0.002	No	14	71.43	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-9	0.001	0.001	0.002	No	14	100	No	0.01	NP (NDs)
Total Radium (pCi/L)	HGWC-10	1.134	0.6573	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-11	1.198	0.4958	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-12	1.259	0.609	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-13	0.9906	0.4874	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-7	1.185	0.5387	5	No	14	0	sqrt(x)	0.01	Param.
Total Radium (pCi/L)	HGWC-8	0.9991	0.6274	5	No	14	0	No	0.01	Param.
Total Radium (pCi/L)	HGWC-9	0.859	0.4302	5	No	14	0	No	0.01	Param.

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



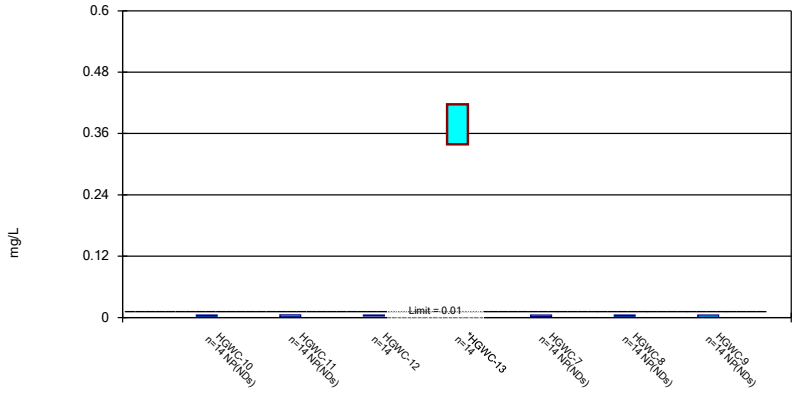
Constituent: Antimony Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



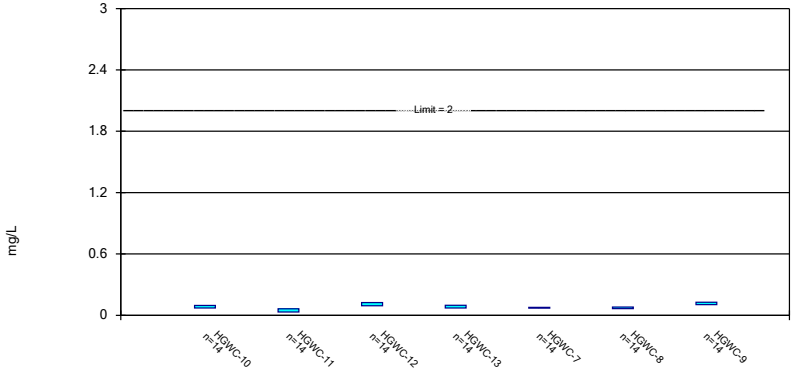
Constituent: Arsenic Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



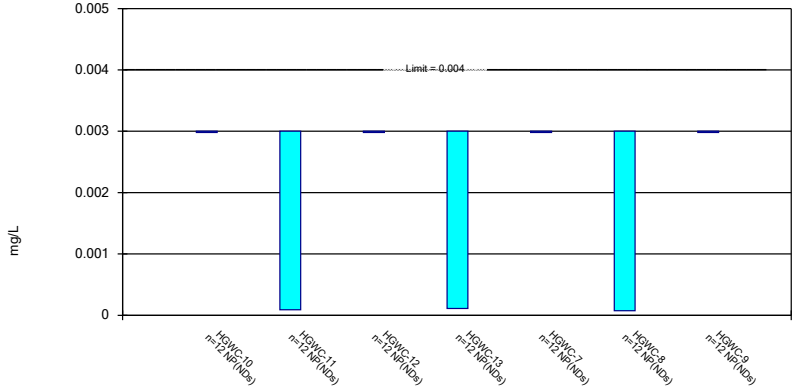
Constituent: Barium Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Antimony (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	0.0003 (J)	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	<0.003	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	<0.003		<0.003	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	<0.003	<0.003			<0.003	<0.003
4/5/2019				0.00021 (J)			
9/24/2019						<0.003	
9/25/2019					<0.003		
9/26/2019				<0.003			
9/27/2019	<0.003	<0.003	<0.003				<0.003
Mean	0.003	0.003	0.003	0.002543	0.003	0.003	0.003
Std. Dev.	0	0	0	0.001069	0	0	0
Upper Lim.	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Lower Lim.	0.003	0.003	0.003	0.0003	0.003	0.003	0.003

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	<0.005	
5/23/2016	<0.005	<0.005	0.0046 (J)	0.329			<0.005
7/12/2016	<0.005	0.0015 (J)	0.005	0.297	<0.005	<0.005	<0.005
9/1/2016	<0.005	<0.005	0.0043 (J)	0.314	<0.005	<0.005	<0.005
10/20/2016					<0.005	<0.005	<0.005
10/24/2016	<0.005	<0.005	0.0049 (J)	0.334			
12/6/2016					<0.005	<0.005	<0.005
12/7/2016	<0.005	<0.005	0.0046 (J)	0.35			
1/25/2017					<0.005	<0.005	
1/26/2017	<0.005	<0.005	<0.005	0.424			<0.005
3/21/2017					<0.005	<0.005	
3/22/2017	<0.005	0.0053	0.0019 (J)	0.419			0.0008 (J)
5/23/2017					<0.005	<0.005	<0.005
5/24/2017	<0.005	<0.005	0.0022 (J)	0.393			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	0.49			
6/5/2018	<0.005	0.0012 (J)		0.38	<0.005		
6/6/2018			0.0048 (J)			<0.005	<0.005
10/2/2018	<0.005				0.0019 (J)	<0.005	<0.005
10/3/2018		<0.005	0.0037 (J)				
10/5/2018				0.34			
3/12/2019						<0.005	
3/13/2019	<0.005	0.0024 (J)		0.42	<0.005		0.00075 (J)
3/14/2019			0.0026 (J)				
4/2/2019					<0.005		
4/3/2019	<0.005	0.00094 (J)	0.0022 (J)			<0.005	<0.005
4/5/2019				0.36			
9/24/2019						<0.005	
9/25/2019					<0.005		
9/26/2019				0.44			
9/27/2019	<0.005	0.0018 (J)	0.0061				0.00037 (J)
Mean	0.005	0.003796	0.004064	0.3779	0.004779	0.005	0.004066
Std. Dev.	0	0.001753	0.001317	0.05528	0.0008285	0	0.001859
Upper Lim.	0.005	0.0053	0.004997	0.417	0.005	0.005	0.005
Lower Lim.	0.005	0.0015	0.003131	0.3387	0.0019	0.005	0.0008

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0687	0.0808	
5/23/2016	0.0877	0.0466	0.133	0.0779			0.117
7/12/2016	0.0926	0.0616	0.135	0.0697	0.0731	0.083	0.13
9/1/2016	0.0994	0.0497	0.123	0.07	0.0747	0.0829	0.13
10/20/2016					0.072	0.0811	0.0806
10/24/2016	0.101	0.0794	0.135	0.0882			
12/6/2016					0.0752	0.0845	0.128
12/7/2016	0.107	0.1	0.13	0.0798			
1/25/2017					0.0747	0.078	
1/26/2017	0.0538	0.0696	0.127	0.0738			0.142
3/21/2017					0.0722	0.0791	
3/22/2017	0.0962	0.0346	0.112	0.0755			0.122
5/23/2017					0.0794	0.0846	0.127
5/24/2017	0.0996	0.0437	0.106	0.0627			
4/3/2018					0.075	0.065	0.1
4/4/2018	0.084	0.029	0.083	0.099			
6/5/2018	0.086	0.039		0.13	0.071		
6/6/2018			0.09			0.063	0.11
10/2/2018	0.076				0.078	0.061	0.11
10/3/2018		0.033	0.087				
10/5/2018				0.076			
3/12/2019						0.062	
3/13/2019	0.044	0.024		0.1	0.083		0.1
3/14/2019			0.081				
4/2/2019					0.072		
4/3/2019	0.076	0.023	0.077			0.066	0.12
4/5/2019				0.079			
9/24/2019						0.053	
9/25/2019					0.061		
9/26/2019				0.11			
9/27/2019	0.078	0.033	0.096				0.11
Mean	0.08438	0.04759	0.1082	0.08511	0.07357	0.07314	0.1162
Std. Dev.	0.018	0.02259	0.02218	0.0185	0.005153	0.01085	0.01583
Upper Lim.	0.09713	0.06359	0.1239	0.09822	0.07722	0.08083	0.1274
Lower Lim.	0.07163	0.03158	0.0925	0.07201	0.06992	0.06546	0.105

Confidence Interval

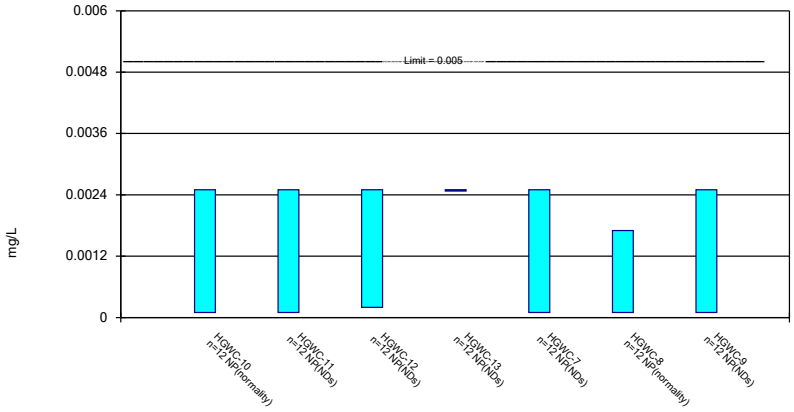
Constituent: Beryllium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.003	<0.003	
5/23/2016	<0.003	<0.003	<0.003	<0.003			<0.003
7/12/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
9/1/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
10/20/2016					<0.003	<0.003	<0.003
10/24/2016	<0.003	<0.003	<0.003	<0.003			
12/6/2016					<0.003	<0.003	<0.003
12/7/2016	<0.003	<0.003	<0.003	<0.003			
1/25/2017					<0.003	<0.003	
1/26/2017	<0.003	<0.003	<0.003	<0.003			<0.003
3/21/2017					<0.003	<0.003	
3/22/2017	<0.003	9E-05 (J)	<0.003	<0.003			<0.003
5/23/2017					<0.003	<0.003	<0.003
5/24/2017	<0.003	<0.003	<0.003	<0.003			
4/3/2018					<0.003	<0.003	<0.003
4/4/2018	<0.003	<0.003	<0.003	<0.003			
3/12/2019						<0.003	
3/13/2019	<0.003	0.0001 (J)		6.2E-05 (J)	<0.003		<0.003
3/14/2019			<0.003				
4/2/2019					<0.003		
4/3/2019	<0.003	0.00017 (J)	<0.003			7.4E-05 (J)	<0.003
4/5/2019				<0.003			
9/24/2019						<0.003	
9/25/2019					<0.003		
9/26/2019				0.00011 (J)			
9/27/2019	<0.003	8.6E-05 (J)	<0.003				<0.003
Mean	0.003	0.002037	0.003	0.002514	0.003	0.002756	0.003
Std. Dev.	0	0.001422	0	0.001134	0	0.0008447	0
Upper Lim.	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Lower Lim.	0.003	9E-05	0.003	0.00011	0.003	7.4E-05	0.003

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

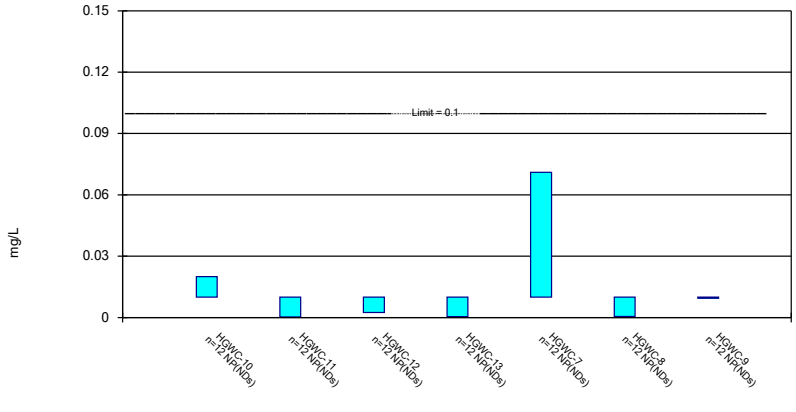


Constituent: Cadmium Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

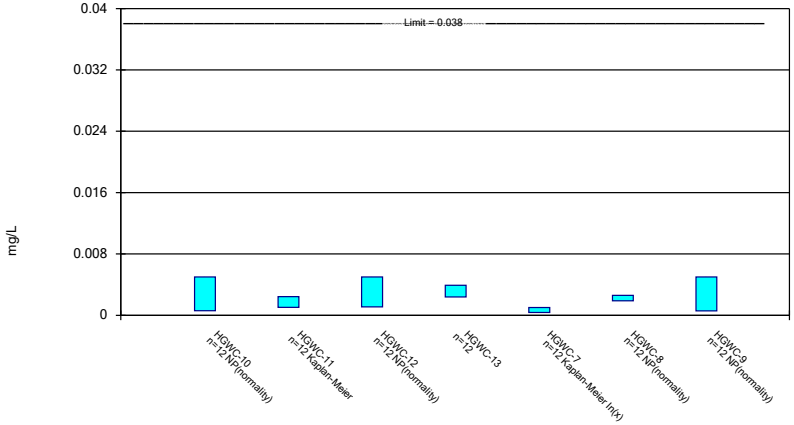


Constituent: Chromium Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

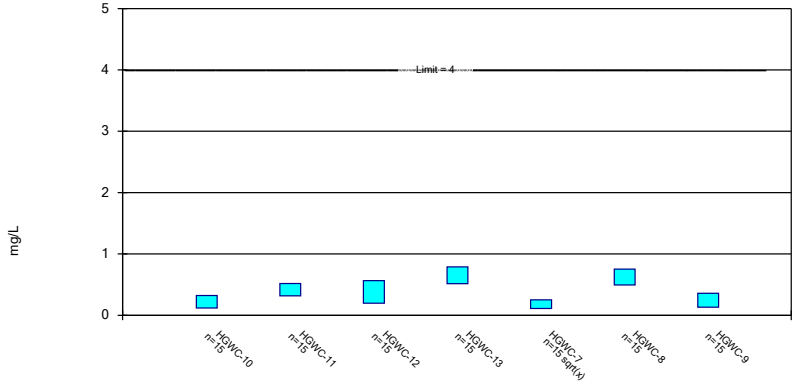


Constituent: Cobalt Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.0025	0.00024 (J)	
5/23/2016	0.000115 (J)	<0.0025	<0.0025	<0.0025			<0.0025
7/12/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0002 (J)	<0.0025
9/1/2016	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025	0.0001 (J)	<0.0025
10/20/2016					<0.0025	0.0001 (J)	0.0002 (J)
10/24/2016	0.0001 (J)	<0.0025	<0.0025	<0.0025			
12/6/2016					0.0002 (J)	0.0017	0.0001 (J)
12/7/2016	0.0001 (J)	0.0001 (J)	0.0002 (J)	<0.0025			
1/25/2017					0.0002 (J)	0.0002 (J)	
1/26/2017	<0.0025	<0.0025	<0.0025	<0.0025			<0.0025
3/21/2017					0.0002 (J)	0.0002 (J)	
3/22/2017	0.0001 (J)	0.0001 (J)	0.0003 (J)	<0.0025			7E-05 (J)
5/23/2017					0.0001 (J)	0.0003 (J)	<0.0025
5/24/2017	0.0002 (J)	<0.0025	9E-05 (J)	<0.0025			
4/3/2018					<0.0025	<0.0025	<0.0025
4/4/2018	<0.0025	<0.0025	<0.0025	<0.0025			
3/12/2019						0.0002 (J)	
3/13/2019	<0.0025	<0.0025		<0.0025	<0.0025		<0.0025
3/14/2019			<0.0025				
4/2/2019					<0.0025		
4/3/2019	0.0001 (J)	9.6E-05 (J)	<0.0025			0.00032 (J)	<0.0025
4/5/2019				<0.0025			
9/24/2019						0.0002 (J)	
9/25/2019					<0.0025		
9/26/2019				<0.0025			
9/27/2019	<0.0025	<0.0025	<0.0025				<0.0025
Mean	0.00111	0.0019	0.001924	0.0025	0.001725	0.0005217	0.001906
Std. Dev.	0.001228	0.001086	0.001043	0	0.001145	0.0007594	0.001075
Upper Lim.	0.0025	0.0025	0.0025	0.0025	0.0025	0.0017	0.0025
Lower Lim.	0.0001	0.0001	0.0002	0.0025	0.0001	0.0001	0.0001

Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	<0.01	<0.01	<0.01			<0.01
7/12/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	<0.01	<0.01	<0.01			
12/6/2016					<0.01	<0.01	<0.01
12/7/2016	<0.01	<0.01	<0.01	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	<0.01	<0.01	<0.01	<0.01			<0.01
3/21/2017					<0.01	0.0005 (J)	
3/22/2017	<0.01	0.0003 (J)	0.0004 (J)	0.0004 (J)			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	<0.01	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	<0.01	<0.01	<0.01			
3/12/2019						<0.01	
3/13/2019	<0.01	<0.01		<0.01	<0.01		<0.01
3/14/2019			0.0025 (J)				
4/2/2019					<0.01		
4/3/2019	0.02	<0.01	<0.01			<0.01	<0.01
4/5/2019				<0.01			
9/24/2019						<0.01	
9/25/2019					0.071		
9/26/2019				<0.01			
9/27/2019	<0.01	<0.01	<0.01				<0.01
Mean	0.01083	0.009192	0.008575	0.0092	0.01508	0.009208	0.01
Std. Dev.	0.002887	0.0028	0.003358	0.002771	0.01761	0.002742	0
Upper Lim.	0.02	0.01	0.01	0.01	0.071	0.01	0.01
Lower Lim.	0.01	0.0003	0.0025	0.0004	0.01	0.0005	0.01

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.005	0.00207 (J)	
5/23/2016	<0.005	<0.005	<0.005	0.00361 (J)			<0.005
7/12/2016	0.0006 (J)	0.0021 (J)	0.0018 (J)	0.0032 (J)	0.0003 (J)	0.0019 (J)	0.0006 (J)
9/1/2016	0.0007 (J)	0.0025 (J)	0.0016 (J)	0.0033 (J)	<0.005	0.0023 (J)	0.0007 (J)
10/20/2016					0.0008 (J)	0.002 (J)	0.002 (J)
10/24/2016	0.0009 (J)	0.0032 (J)	0.0017 (J)	0.004 (J)			
12/6/2016					0.0009 (J)	0.0026 (J)	0.0011 (J)
12/7/2016	0.0012 (J)	0.003 (J)	0.0021 (J)	0.0034 (J)			
1/25/2017					0.0005 (J)	0.002 (J)	
1/26/2017	<0.005	0.0014 (J)	0.0016 (J)	0.0024 (J)			0.0006 (J)
3/21/2017					0.0005 (J)	0.0023 (J)	
3/22/2017	0.0006 (J)	0.0014 (J)	0.0018 (J)	0.0026 (J)			0.0005 (J)
5/23/2017					0.0005 (J)	0.0023 (J)	0.0006 (J)
5/24/2017	0.0006 (J)	0.0008 (J)	0.0015 (J)	0.0022 (J)			
4/3/2018					<0.005	<0.005	<0.005
4/4/2018	<0.005	<0.005	<0.005	<0.005			
3/12/2019						0.002 (J)	
3/13/2019	<0.005	0.00098 (J)		0.0022 (J)	0.00067 (J)		0.00065 (J)
3/14/2019			0.0011 (J)				
4/2/2019					0.00069 (J)		
4/3/2019	<0.005	0.0018 (J)	0.0011 (J)			0.0019 (J)	0.00069 (J)
4/5/2019				0.0017 (J)			
9/24/2019						0.0015 (J)	
9/25/2019					0.0026		
9/26/2019				0.0042			
9/27/2019	<0.005	0.00071 (J)	0.0012 (J)				0.00057 (J)
Mean	0.002883	0.002324	0.002125	0.003151	0.001872	0.002322	0.001501
Std. Dev.	0.002217	0.001488	0.001376	0.0009686	0.001976	0.0008871	0.001685
Upper Lim.	0.005	0.00243	0.005	0.003911	0.001022	0.0026	0.005
Lower Lim.	0.0006	0.001034	0.0011	0.002391	0.0003639	0.0019	0.00057

Confidence Interval

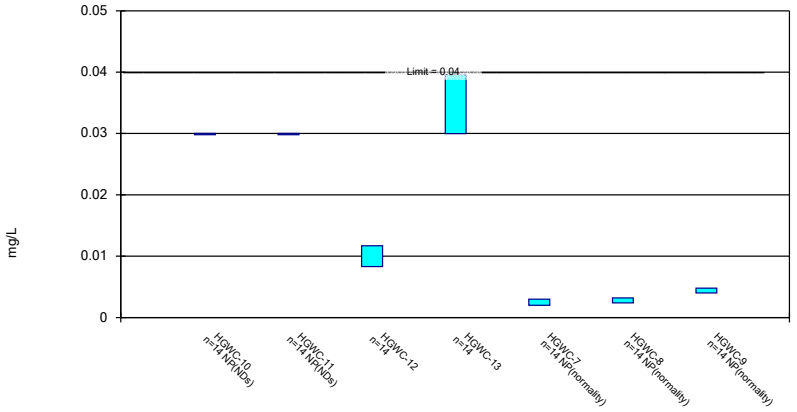
Constituent: Fluoride (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.0828 (J)	0.499	
5/23/2016	0.0394 (J)	0.203 (J)	0.212 (J)	0.2587 (J)			<0.3
7/12/2016	0.15 (J)	0.44	0.31	0.53	0.2 (J)	0.67	0.24 (J)
9/1/2016	0.5	0.67	0.62	0.74	0.51	0.94	0.46
10/20/2016					0.4	0.56	0.56
10/24/2016	0.06 (J)	0.26 (J)	0.19 (J)	0.31			
12/6/2016					0.26 (J)	0.76	0.31
12/7/2016	0.44	0.55	0.73	1			
1/25/2017					0.24 (J)	1.1	
1/26/2017	0.29 (J)	0.27 (J)	0.12 (J)	0.68			0.004 (J)
3/21/2017					0.13 (J)	0.46	
3/22/2017	0.34	0.66	0.44	0.76			0.28 (J)
5/23/2017					0.11 (J)	0.65	0.29 (J)
5/24/2017	0.13 (J)	0.35	0.34	0.54			
10/3/2017	0.46	0.56	0.58	0.83	0.17 (J)	0.66	0.53
4/3/2018					<0.3	0.39	<0.3
4/4/2018	<0.3	0.39	<0.3	0.65			
6/5/2018	<0.3	0.24 (J)		0.47	0.099 (J)		
6/6/2018			0.21 (J)			0.46	0.12 (J)
10/2/2018	0.17 (J)				<0.3	0.51	0.031 (J)
10/3/2018		0.31	0.15 (J)				
10/5/2018				0.77			
3/12/2019						0.58	
3/13/2019	0.17 (J)	0.51		0.78	0.12 (J)		0.14 (J)
3/14/2019			1.1				
4/2/2019					0.097 (J)		
4/3/2019	0.082 (J)	0.43	0.3 (J)			0.63	0.14 (J)
4/5/2019				0.83			
9/24/2019						0.49	
9/25/2019					0.1 (J)		
9/26/2019				0.64			
9/27/2019	0.17 (J)	0.42	0.26 (J)				0.26 (J)
Mean	0.2201	0.4175	0.3808	0.6526	0.1879	0.6239	0.2443
Std. Dev.	0.1491	0.1489	0.272	0.2013	0.1222	0.1909	0.1678
Upper Lim.	0.3211	0.5185	0.5651	0.789	0.2506	0.7533	0.358
Lower Lim.	0.1191	0.3166	0.1965	0.5162	0.1106	0.4946	0.1307

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

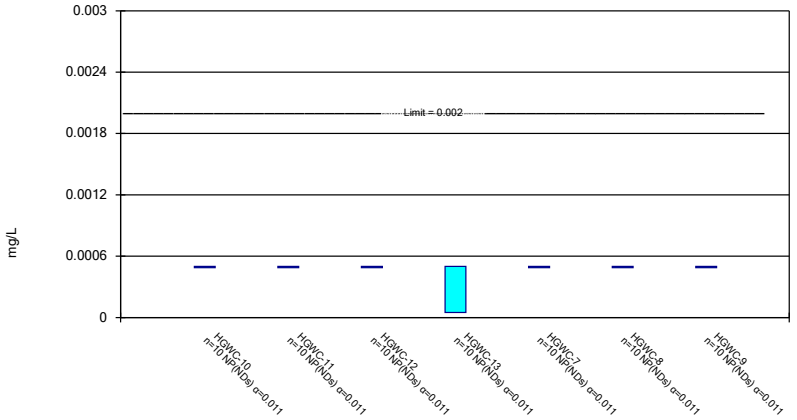


Constituent: Lithium Analysis Run 12/16/2019 2:43 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

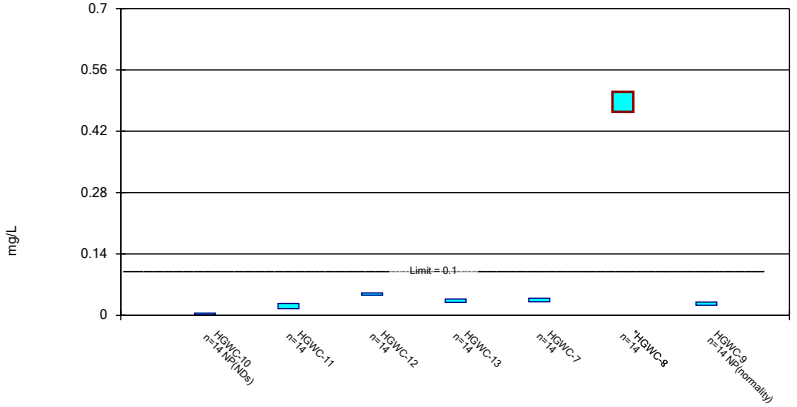


Constituent: Mercury Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

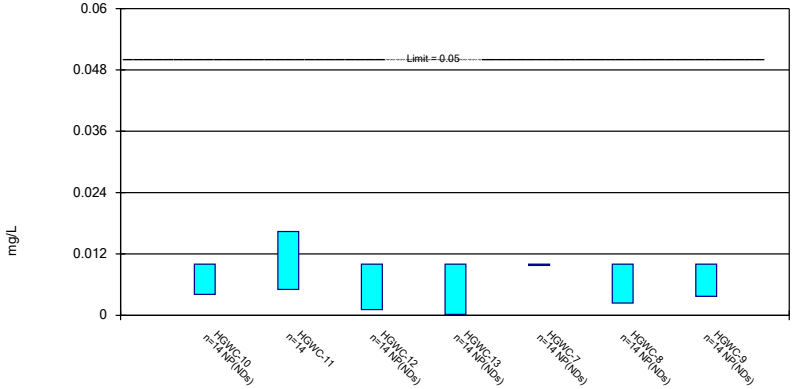


Constituent: Molybdenum Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.03	<0.03	
5/23/2016	<0.03	<0.03	0.0107 (J)	0.0422 (J)			<0.03
7/12/2016	<0.03	<0.03	0.0113 (J)	0.0366 (J)	0.0021 (J)	0.0023 (J)	0.004 (J)
9/1/2016	<0.03	<0.03	0.0118 (J)	0.04 (J)	0.0025 (J)	0.0029 (J)	0.0044 (J)
10/20/2016					0.0021 (J)	0.0027 (J)	0.0027 (J)
10/24/2016	<0.03	<0.03	0.0114 (J)	0.0435 (J)			
12/6/2016					0.0026 (J)	0.0032 (J)	0.005 (J)
12/7/2016	<0.03	<0.03	0.0155 (J)	0.0477 (J)			
1/25/2017					0.0024 (J)	0.0026 (J)	
1/26/2017	<0.03	<0.03	0.0099 (J)	0.0342 (J)			0.0042 (J)
3/21/2017					0.0026 (J)	0.0029 (J)	
3/22/2017	<0.03	<0.03	0.0098 (J)	0.0353 (J)			0.0043 (J)
5/23/2017					0.0026 (J)	0.0029 (J)	0.0048 (J)
5/24/2017	<0.03	<0.03	0.0105 (J)	0.0317 (J)			
4/3/2018					0.0023 (J)	0.0025 (J)	0.0043 (J)
4/4/2018	<0.03	<0.03	0.008 (J)	0.031 (J)			
6/5/2018	<0.03	<0.03		0.031 (J)	0.0022 (J)		
6/6/2018			0.0095 (J)			0.0023 (J)	0.0043 (J)
10/2/2018	<0.03				0.003 (J)	0.0025 (J)	0.004 (J)
10/3/2018		<0.03	0.0083 (J)				
10/5/2018				0.027 (J)			
3/12/2019						0.0025 (J)	
3/13/2019	<0.03	<0.03		0.029 (J)	0.0024 (J)		0.004 (J)
3/14/2019			0.0058 (J)				
4/2/2019					0.002 (J)		
4/3/2019	<0.03	<0.03	0.0066 (J)			0.0025 (J)	0.004 (J)
4/5/2019				0.023 (J)			
9/24/2019						0.0024 (J)	
9/25/2019					0.0019 (J)		
9/26/2019				0.035			
9/27/2019	<0.03	<0.03	0.011				0.0044 (J)
Mean	0.03	0.03	0.01001	0.0348	0.004336	0.004586	0.006029
Std. Dev.	0	0	0.002406	0.006794	0.007392	0.007319	0.006919
Upper Lim.	0.03	0.03	0.01171	0.03961	0.003	0.0032	0.0048
Lower Lim.	0.03	0.03	0.008303	0.02999	0.002	0.0024	0.004

Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.0005	<0.0005	
5/23/2016	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005
7/12/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
9/1/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10/20/2016					<0.0005	<0.0005	<0.0005
10/24/2016	<0.0005	<0.0005	<0.0005	<0.0005			
12/6/2016					<0.0005	<0.0005	<0.0005
12/7/2016	<0.0005	<0.0005	<0.0005	<0.0005			
1/25/2017					<0.0005	<0.0005	
1/26/2017	5E-05 (J)	5E-05 (J)	<0.0005	4E-05 (J)			4E-05 (J)
3/21/2017					<0.0005	<0.0005	
3/22/2017	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005
5/23/2017					<0.0005	<0.0005	<0.0005
5/24/2017	<0.0005	<0.0005	<0.0005	5E-05 (J)			
4/3/2018					<0.0005	<0.0005	<0.0005
4/4/2018	<0.0005	<0.0005	<0.0005	<0.0005			
3/12/2019						<0.0005	
3/13/2019	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005
3/14/2019			<0.0005				
Mean	0.000455	0.000455	0.0005	0.000409	0.0005	0.0005	0.000454
Std. Dev.	0.0001423	0.0001423	0	0.0001919	0	0	0.0001455
Upper Lim.	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.0005	0.0005	0.0005	5E-05	0.0005	0.0005	0.0005

Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.028	0.446	
5/23/2016	<0.01	0.0164	0.0413 (J)	0.027			0.0187
7/12/2016	0.0013 (J)	0.0251	0.0484	0.0316	0.0273	0.455	0.0229
9/1/2016	<0.01	0.0259	0.0474	0.0336	0.0274	0.481	0.0239
10/20/2016					0.036	0.472	0.477
10/24/2016	<0.01	0.0293	0.047	0.0352			
12/6/2016					0.0365	0.52	0.0236
12/7/2016	<0.01	0.0209	0.0432	0.0383			
1/25/2017					0.0317	0.478	
1/26/2017	<0.01	0.0277	0.0484	0.041			0.0234
3/21/2017					0.0346	0.547	
3/22/2017	0.0013 (J)	0.011	0.0494	0.0426			0.0219
5/23/2017					0.0336	0.482	0.0242
5/24/2017	0.0014 (J)	0.0373	0.047	0.04			
4/3/2018					0.032	0.44	0.025
4/4/2018	<0.01	0.013	0.052	0.027			
6/5/2018	<0.01	0.029		0.027	0.036		
6/6/2018			0.054			0.49	0.027
10/2/2018	<0.01				0.039	0.47	0.028
10/3/2018		0.02	0.054				
10/5/2018				0.033			
3/12/2019						0.5	
3/13/2019	<0.01	0.012		0.033	0.04		0.028
3/14/2019			0.046				
4/2/2019					0.041		
4/3/2019	0.0021 (J)	0.01	0.049			0.5	0.03
4/5/2019				0.03			
9/24/2019						0.54	
9/25/2019					0.047		
9/26/2019				0.026			
9/27/2019	0.0014 (J)	0.016	0.052				0.033
Mean	0.00375	0.02097	0.04851	0.03324	0.03501	0.4872	0.05761
Std. Dev.	0.00175	0.008309	0.0037	0.005586	0.005639	0.03212	0.1208
Upper Lim.	0.005	0.02686	0.05113	0.03719	0.039	0.51	0.03
Lower Lim.	0.0014	0.01509	0.04589	0.02928	0.03101	0.4645	0.0229

Confidence Interval

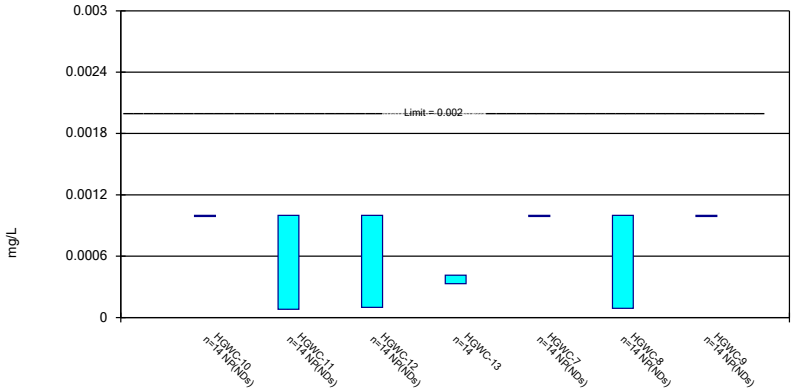
Constituent: Selenium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.01	<0.01	
5/23/2016	<0.01	0.0106	<0.01	<0.01			<0.01
7/12/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
9/1/2016	<0.01	0.0057 (J)	<0.01	<0.01	<0.01	<0.01	<0.01
10/20/2016					<0.01	<0.01	<0.01
10/24/2016	<0.01	0.0021 (J)	<0.01	<0.01			
12/6/2016					<0.01	0.0024 (J)	0.0037 (J)
12/7/2016	<0.01	0.0015 (J)	0.0011 (J)	<0.01			
1/25/2017					<0.01	<0.01	
1/26/2017	0.0041 (J)	0.0062 (J)	<0.01	<0.01			<0.01
3/21/2017					<0.01	<0.01	
3/22/2017	<0.01	0.0263	<0.01	<0.01			<0.01
5/23/2017					<0.01	<0.01	<0.01
5/24/2017	<0.01	0.0038 (J)	<0.01	<0.01			
4/3/2018					<0.01	<0.01	<0.01
4/4/2018	<0.01	0.021	<0.01	<0.01			
6/5/2018	<0.01	0.0062 (J)		<0.01	<0.01		
6/6/2018			<0.01			<0.01	<0.01
10/2/2018	0.0023 (J)				<0.01	<0.01	<0.01
10/3/2018		0.009 (J)	<0.01				
10/5/2018				<0.01			
3/12/2019						<0.01	
3/13/2019	0.0015 (J)	0.023		<0.01	<0.01		<0.01
3/14/2019			<0.01				
4/2/2019					<0.01		
4/3/2019	<0.01	0.016	<0.01			<0.01	<0.01
4/5/2019				0.00018 (J)			
9/24/2019						<0.01	
9/25/2019					<0.01		
9/26/2019				<0.01			
9/27/2019	<0.01	0.013	<0.01				<0.01
Mean	0.008421	0.01072	0.009364	0.009299	0.01	0.009457	0.00955
Std. Dev.	0.00318	0.008008	0.002379	0.002625	0	0.002031	0.001684
Upper Lim.	0.01	0.01639	0.01	0.01	0.01	0.01	0.01
Lower Lim.	0.0041	0.005049	0.0011	0.00018	0.01	0.0024	0.0037

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

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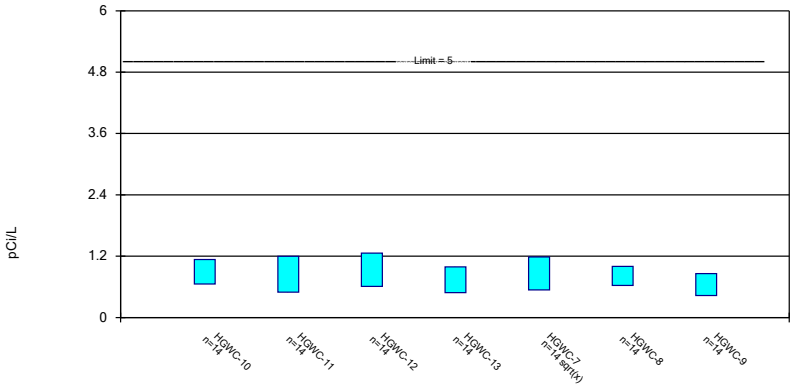
Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 12/16/2019 2:44 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					<0.001	<0.001	
5/23/2016	<0.001	<0.001	<0.001	0.000378 (J)			<0.001
7/12/2016	<0.001	8E-05 (J)	0.0002 (J)	0.0004 (J)	<0.001	7E-05 (J)	<0.001
9/1/2016	<0.001	<0.001	<0.001	0.0004 (J)	<0.001	<0.001	<0.001
10/20/2016					<0.001	<0.001	<0.001
10/24/2016	<0.001	<0.001	<0.001	0.0005 (J)			
12/6/2016					<0.001	<0.001	<0.001
12/7/2016	<0.001	<0.001	<0.001	0.0004 (J)			
1/25/2017					<0.001	<0.001	
1/26/2017	<0.001	<0.001	<0.001	0.0004 (J)			<0.001
3/21/2017					<0.001	9E-05 (J)	
3/22/2017	<0.001	<0.001	0.0001 (J)	0.0004 (J)			<0.001
5/23/2017					<0.001	8E-05 (J)	<0.001
5/24/2017	<0.001	8E-05 (J)	9E-05 (J)	0.0003 (J)			
4/3/2018					<0.001	<0.001	<0.001
4/4/2018	<0.001	<0.001	<0.001	0.00032 (J)			
6/5/2018	<0.001	<0.001		0.00035 (J)	<0.001		
6/6/2018			<0.001			<0.001	<0.001
10/2/2018	<0.001				<0.001	<0.001	<0.001
10/3/2018		<0.001	<0.001				
10/5/2018				0.00025 (J)			
3/12/2019						<0.001	
3/13/2019	<0.001	<0.001		0.00039 (J)	<0.001		<0.001
3/14/2019			<0.001				
4/2/2019					<0.001		
4/3/2019	<0.001	<0.001	<0.001			<0.001	<0.001
4/5/2019				0.00034 (J)			
9/24/2019						0.00011 (J)	
9/25/2019					<0.001		
9/26/2019				0.00039 (J)			
9/27/2019	<0.001	<0.001	8.8E-05 (J)				<0.001
Mean	0.001	0.0008686	0.0007484	0.0003727	0.001	0.0007393	0.001
Std. Dev.	0	0.0003341	0.0004136	5.901E-05	0	0.0004279	0
Upper Lim.	0.001	0.001	0.001	0.0004145	0.001	0.001	0.001
Lower Lim.	0.001	8E-05	0.0001	0.0003309	0.001	9E-05	0.001

Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 12/16/2019 2:45 PM

Hammond AP Client: Georgia Power Data: Hammond AP-1

	HGWC-10	HGWC-11	HGWC-12	HGWC-13	HGWC-7	HGWC-8	HGWC-9
5/20/2016					0.62 (U)	0.56 (U)	
5/23/2016	0.419 (U)	0.509 (U)	1.12	0.625 (U)			0.826 (U)
7/12/2016	0.855	0.784 (U)	1.61	0.478 (U)	0.283 (U)	0.636 (U)	0.511 (U)
9/1/2016	0.844 (U)	0.261 (U)	1.23	0.595 (U)	0.703 (U)	0.818 (U)	0.762 (U)
10/20/2016					1.97	1.04 (U)	1.17
10/24/2016	0.917 (U)	1.42	1.98	1.54			
12/6/2016					2	0.771 (U)	0.126 (U)
12/7/2016	0.558 (U)	0.781 (U)	0.319 (U)	0.657 (U)			
1/25/2017					1.06 (U)	0.859 (U)	
1/26/2017	0.922 (U)	0.842 (U)	0.54 (U)	1.22			0.515 (U)
3/21/2017					0.668 (U)	0.851 (U)	
3/22/2017	0.751 (U)	0.318 (U)	0.635 (U)	0.285 (U)			0.451 (U)
5/23/2017					0.621 (U)	0.705 (U)	0.924 (U)
5/24/2017	0.725 (U)	0.687 (U)	1.01	0.655 (U)			
4/3/2018					0.538 (U)	0.311 (U)	0.732 (U)
4/4/2018	0.715 (U)	1.5	0.956	0.882 (U)			
6/5/2018	0.718 (U)	0.549 (U)		1.1 (U)	0.985 (U)		
6/6/2018			0.424 (U)			0.896 (U)	0.813 (U)
10/2/2018	0.948				0.837 (U)	1.21	0.61 (U)
10/3/2018		1.48	0.57 (U)				
10/5/2018				0.558 (U)			
3/12/2019						0.544 (U)	
3/13/2019	1.19 (U)	0.584 (U)		0.39 (U)	0.403 (U)		1 (U)
3/14/2019			0.992 (U)				
4/2/2019					0.865 (U)		
4/3/2019	1.82 (U)	0.36 (U)	0.734 (U)			0.885 (U)	0.156 (U)
4/5/2019				0.422 (U)			
9/24/2019						1.3	
9/25/2019					0.884 (U)		
9/26/2019				0.939 (U)			
9/27/2019	1.16 (U)	1.78	0.958 (U)				0.428 (U)
Mean	0.8959	0.8468	0.9341	0.739	0.8884	0.8133	0.6446
Std. Dev.	0.3368	0.4956	0.459	0.3552	0.5113	0.2624	0.3027
Upper Lim.	1.134	1.198	1.259	0.9906	1.185	0.9991	0.859
Lower Lim.	0.6573	0.4958	0.609	0.4874	0.5387	0.6274	0.4302