Prepared for



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2019 SEMIANNUAL GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT – REVISION 01 GEORGIA POWER COMPANY PLANT HAMMOND ASH POND 4 (AP-4)

Prepared by



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Project Number GW6581

March 2020

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CERTIFICATION STATEMENT

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



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<u>March 13, 2020</u> Date

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LIST OF ACRONYMS

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

1.0 INTRODUCTION

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

Groundwater monitoring and reporting for the CCR unit is performed in accordance with the monitoring requirements of 40 CFR § 257.90 through 257.95 of the Federal CCR rule, and GA EPD Rules for Solid Waste Management 391-3-4-.10(6). To specify groundwater monitoring requirements, GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the USEPA CCR Rule. For ease of reference, the USEPA CCR rules are cited within this report.

AP-4 was closed in 2012; therefore, AP-4 is not subject to the Federal monitoring requirements. A permit application for AP-4 was submitted to GA EPD in November 2018 and is currently under review. Groundwater monitoring has been initiated in order to meet the GA EPD CCR requirements. This report documents groundwater monitoring activities completed for AP-4 from August 2019 through December 2019. This report includes the results of the initial annual monitoring event for Appendix IV of 40 CFR § 257 conducted in August 2019 and the semiannual monitoring event conducted in October 2019.

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-4 was commissioned in 1986 as a surface impoundment with a corresponding surface area of approximately 54 acres. Dry ash stacking operations in AP-4 began in 1994 and

continued until 2010; AP-4 received both fly ash and bottom ash during this period. AP-4 was capped in place in 2011-2012 in accordance with the GA EPD regulations regarding landfill closures. AP-4 was graded, engineered with drainage, and capped with a geosynthetic clay liner (GCL) and soil cover.

1.2 <u>Regional Geology & Hydrogeologic Setting</u>

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

1.2.1 Regional and Site Geology

The Site is located 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-4 is underlain by the lower units of the Cambrian age Conasauga Formation, consisting of mostly calcareous shale. Based on review of subsurface investigations, the bedrock underneath AP-4 was described as predominantly shale. AP-4 is underlain primarily by five lithologic units: (i) terrace alluvium, (ii) colluvium, (iii) residuum, (iv) partially weathered shale bedrock, and (v) unweathered shale bedrock.

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



1.2.2 Hydrogeologic Setting

The uppermost aquifer at AP-4 is a regional groundwater aquifer that occurs primarily in the alluvium, colluvium, and residuum, but also to some degree within the weathered and fractured bedrock. Based on observations of alluvium, colluvium, and residuum soil types and horizontal conductivity values, the movement of groundwater in the soil can be characterized as low-to moderate permeability, porous media flow. The groundwater flow in the shallow underlying bedrock is characterized as fracture flow, and due to the preponderance of shale beneath AP-4, is expected to be very low permeability. Groundwater flow direction is generally from north to south.

1.3 Groundwater Monitoring Well Network

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

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

After the initial Appendix IV assessment monitoring event, GPC reclassified groundwater level monitoring piezometer GWC-2 as compliance monitoring well HGWC-102. The reclassification was done in support of a recommendation issued by GA EPD to refine the ability to monitor groundwater quality conditions between the southern boundary of AP-4 and the Coosa River. HGWC-102 was sampled for the first background monitoring event in October 2019.

2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR § 257.90(e), the following describes groundwater monitoringrelated activities performed for AP-4 during the second semiannual period of 2019. All groundwater sampling was performed in accordance with 40 CFR § 257.93.

2.1 <u>Monitoring Well Installation and Maintenance</u>

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 the August and October 2019 events are provided in **Appendix A**.

In addition to completing routine maintenance of the well network in 2019, dedicated QED bladder pumps were installed by Geosyntec at wells HGWA-111, HGWA-112, HGWA-113, HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, and HGWC-118 in September 2019.

2.2 Assessment Monitoring

Appendix III constituents exhibited statistically significant increases (SSIs) over background during the first detection monitoring event conducted in April 2019. Analytical results and statistical evaluation of those results were provided in the *2019 Annual Groundwater and Corrective Action Monitoring Report* (Geosyntec, 2019). An Assessment Monitoring Program Notification was prepared for AP-4 on November 13, 2019, pursuant to 40 CFR § 257.94(e)(3) and placed in the Operating Records of the ash pond as required by 40 CFR § 257.105(h)(5).

Pursuant to 40 CFR § 257.95(b), the compliance monitoring well network (**Figure 2**) was sampled for the full suite of Appendix IV parameters in August 2019, within 90 days of initiating the assessment monitoring program. Pursuant to 40 CFR §257.95(d)(1), the AP-4 compliance wells were resampled within 90 days of receiving the August 2019 data, occurring October 2019. The groundwater samples were analyzed for Appendix III parameters and the following Appendix IV constituents that were detected during the August 2019 event: arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, and combined radium 226/228. The October 2019 sampling event served as the first semiannual groundwater assessment monitoring event, as required by 40 CFR

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§257.95(d)(1). Pursuant to 40 CFR § 257.90(e)(3), laboratory and field data reports for the August and October 2019 sampling events are included in **Appendix B**. The number of AP-4 groundwater samples collected for analysis and the sample collection dates are summarized in **Table 2**.

3.0 SAMPLING METHODOLOGY & ANALYSES

Two monitoring events were conducted during this monitoring period: (1) an initial assessment monitoring event was conducted in August 2019 as a result of statistical exceedances during the first detection monitoring event, and (2) the subsequent assessment event conducted in October 2019, which served as the semiannual compliance monitoring event for the year. The following sections describe the methods used to conduct groundwater monitoring at the Site.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth-to-groundwater level measurements were recorded from the AP-4 wells and piezometers and used to calculate the groundwater elevations. The calculated groundwater elevations for the August and October 2019 sampling events are presented in **Table 3**. The groundwater elevations for the August event ranged from 583.94 feet (ft) (referenced to the North American Vertical Datum of 1988) in well GWA-14 to 564.27 ft in well HGWC-107. The groundwater elevations for the October 2019 event ranged from 583.30 ft in piezometer GWA-14 to 562.04 ft in piezometer HGWC-105. The elevations reported for these two events are representative of the prior monitoring events.

The groundwater elevation data were used to prepare potentiometric surface contour maps for the August and October 2019 events, which are presented on **Figures 3** and **4**, respectively. Groundwater in the AP-4 area flows under the influence of topography from slightly higher ground surface elevations on the northern side of AP-4 towards lower elevations to the south of AP-4 along the Coosa River.

3.2 Groundwater Gradient and Flow Velocity

The representative groundwater hydraulic gradients within the uppermost aquifer beneath AP-4 were calculated using the August and October 2019 groundwater elevation data. Given the surface area covered by AP-4, hydraulic gradients were calculated along the eastern, central, and western portions of the unit. The well pairs correlating to these flow areas are, respectively: GWA-14 and HGWC-118; HGWA-113 and HGWC-103; HGWA-111 and HGWC-107. The calculated gradients from the three portions were averaged for the August and October 2019 sampling events to provide a representative gradient of 0.014 feet per foot (ft/ft) across AP-4.

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

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

where:

$$V = Groundwater flow velocity \left(\frac{feet}{day}\right)$$
$$K = Average hydraulic conductivity \left(\frac{feet}{day}\right)$$
$$i = Horizontal hydraulic gradient \left(\frac{feet}{feet}\right)$$
$$n_e = Effective porosity$$

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

The groundwater flow velocity calculation is performed using the geometric mean for K_h of 1.67 ft/day. An estimated effective porosity of 0.15 is used to represent average conditions for the silty clay alluvium/colluvium, derived based on review of literature, observed site lithology, and professional judgement. With these variables determined, and accounting for the representative hydraulic gradient discussed above, the representative groundwater flow velocity underneath AP-4 was calculated to be 0.16 ft/day.

3.3 Groundwater Sampling Procedures

Groundwater samples were collected from the compliance monitoring network using low-flow sampling procedures in accordance with 40 CFR § 257.93(a). For the August 2019 event, the wells were purged and sampled using a peristaltic pump equipped with new disposable polyethylene tubing. For the October 2019 event, a dedicated bladder

pump equipped with dedicated tubing was used to sample the compliance wells, except for newly reclassified well HGWC-102, which was sampled using a peristaltic pump. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters listed below during well purging to verify stabilization prior to sampling. Turbidity was measured using a LaMotte 2020we® portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

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

Following purging, and 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 in August and October 2019 are provided in **Appendix B**.

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 B**.

The groundwater analytical results from the August 2019 and October 2019 monitoring events are summarized in **Table 5**. The associated Pace Analytical laboratory reports are provided in **Appendix B**.

3.5 **Quality Assurance & Quality Control Summary**

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

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

4.0 STATISTICAL ANALYSIS

The following section summarizes the statistical analysis of Appendix III groundwater monitoring data performed pursuant to 40 CFR § 257.93. Pursuant to 40 CFR § 257.95(d)(2), GPC will establish groundwater protection standards for the Appendix IV monitoring parameters and complete statistical analysis of the Appendix IV groundwater monitoring data obtained during the first semiannual assessment monitoring event within 90 days of obtaining the results. GPC will complete the assessment monitoring and statistical analysis in accordance with 40 CFR § 257.95 and report the results in the Annual Groundwater Monitoring and Corrective Action Report, due August 1, 2020.

4.1 <u>Statistical Method</u>

Based on guidance from GA EPD, 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 PLs pool upgradient well data from wells HGWA-111, HGWA-112, and HGWA-113 to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are SSIs. The most recent sample from the same well is compared to its respective background. An "initial exceedance" occurs when any downgradient well data exceed the PL.

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

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

Newly reclassified well HGWC-102 was not included in the statistical analyses given that October 2019 was the first background sampling event. Following the Unified Guidance recommendation, the well should be sampled a minimum of four times before performing a statistical analysis of its data.

4.2 <u>Appendix III Statistical Analyses Results</u>

Statistical analysis of the October 2019 groundwater data was performed to determine if Appendix III constituents have returned to background levels. **Table C-1** in **Appendix C** presents a summarized comparison of the interwell PLs to the October 2019 semiannual monitoring data.

No newly suspected outliers or extreme trending data were identified in the dataset for Appendix III constituents during this reporting period. Based on review of the Appendix III statistical analysis presented in **Appendix C**, the following parameters represent SSIs over background interwell PLs:

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

The October 2019 statistical evaluation results are overall consistent with the 2019 Annual Groundwater and Corrective Action Monitoring Report (Geosyntec, 2019) statistical results, with the following exceptions:

- New SSIs of chloride at HGWC-103 and HGWC-117.
- No SSIs of fluoride were identified at AP-4.

4.3 Appendix IV Statistical Analyses Results

Pursuant to 40 CFR § 257.95 and Georgia EPD rule 391-3-4-.10(6)(a), Appendix IV groundwater quality data will be statistically analyzed and compared to groundwater protection standards within 90 days of receiving data from the first (October 2019) semiannual assessment monitoring event. GPC will complete the assessment monitoring and statistical analysis in accordance with 40 CFR § 257.95 and report the results in the Annual Groundwater Monitoring and Corrective Action Report, due August 1, 2020.

5.0 MONITORING PROGRAM STATUS

Based on the statistical evaluation results presented, SSIs of Appendix III parameters have not returned to background levels. Pursuant to 40 CFR § 257.94(e), GPC will continue to monitor groundwater at AP-4 in accordance with the assessment monitoring program regulations of 40 CFR § 257.95. As part of the initial phases of the assessment monitoring program, GPC is currently evaluating Appendix IV data collected from AP-4 compliance wells to statistically establish GWPS for these constituents pursuant to 40 CFR § 257.95.

6.0 CONCLUSIONS & FUTURE ACTIONS

This 2019 Semiannual Groundwater Monitoring & Corrective Action Report for GPC's Plant Hammond AP-4 was prepared to fulfill the requirements of GA EPD Rules for Solid Waste Management 391-3-4-.10, and indirectly by reference the USEPA's CCR Rule. Statistical evaluations of the October 2019 groundwater monitoring data identified SSIs of Appendix III groundwater monitoring parameters in each of the seven established downgradient compliance wells (i.e., excluding HGWC-102).

GPC initiated assessment monitoring in accordance with the requirements of 40 CFR § 257.95. The next scheduled sampling event for AP-4 is scheduled for March 2020. During the next semiannual reporting period of 2020, GPC will establish groundwater protection standards for Appendix IV constituents in accordance with 40 CFR § 257.95 and report the results in the Annual Groundwater Monitoring and Corrective Action Report, due August 1, 2020.

7.0 **REFERENCES**

- Geosyntec Consultants, 2019. 2019 Annual Groundwater Monitoring & Corrective Action Report – Georgia Power Company, Plant Hammond Ash Pond 4 (AP-4). July 2019.
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TABLES

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

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Top of Casing Elevation ⁽²⁾ (ft NAVD88)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Elevation (ft NAVD88)	Well Depth (ft BTOC) ⁽³⁾	Screen Interval Length
Compliance Monitoring We	ll								
HGWA-111	Upgradient	8/21/2012	1548832.95	1935222.98	592.24	558.97	548.97	43.67	10
HGWA-112	Upgradient	8/21/2012	1548884.32	1935647.24	596.75	567.00	557.00	40.15	10
HGWA-113	Upgradient	10/2/2012	1548943.20	1935990.30	595.13	569.00	559.00	36.53	10
HGWC-101	Downgradient	8/7/2012	1547726.28	1936368.99	579.26	551.72	541.72	37.94	10
HGWC-102	Downgradient	8/7/2012	1547714.61	1936033.63	577.91	550.88	540.88	37.43	10
HGWC-103	Downgradient	8/8/2012	1547849.94	1935733.30	581.16	553.88	543.88	37.68	10
HGWC-105	Downgradient	8/8/2012	1547856.65	1935110.32	582.46	548.09	538.09	44.67	10
HGWC-107	Downgradient	8/8/2012	1547911.01	1934442.88	579.76	551.96	541.96	38.20	10
HGWC-109	Downgradient	8/15/2012	1548626.80	1934361.54	577.33	556.37	546.37	31.36	10
HGWC-117	Downgradient	8/14/2012	1548099.53	1937180.31	582.32	552.46	542.46	40.26	10
HGWC-118	Downgradient	10/1/2012	1547981.61	1936946.80	579.48	548.58	538.58	40.90	10
Groundwater Level Monitor	ring Piezometer								
MW-12	Downgradient	10/21/2014	1547862.70	1937521.75	584.33	556.90	546.90	37.83	10
GWC-4	Downgradient	8/8/2012	1547899.28	1935398.50	581.02	543.84	533.84	47.58	10
GWC-6	Downgradient	8/13/2012	1547844.88	1934800.39	582.01	554.28	544.28	38.13	10
GWC-8	Downgradient	8/9/2012	1548167.13	1934344.12	580.50	549.98	539.98	40.92	10
GWA-14	Upgradient	10/2/2012	1548981.33	1936642.14	592.58	562.10	552.10	40.88	10
GWA-15	Upgradient	8/22/2012	1548765.12	1936807.85	592.03	571.91	561.91	30.52	10
GWA-16	Upgradient	8/21/2012	1548591.94	1937209.89	583.04	570.43	560.43	23.01	10
GWC-19	Upgradient	8/14/2012	1547893.59	1936571.97	581.31	555.52	545.52	36.19	10

Notes:

ft = feet

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 American Vertical Datum of 1988 (NAVD88).

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

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

Well ID	Hydraulic Location	Aug 21-23, 2019	Oct 21-23, 2019	Status of Monitoring Well
Purpose of S	ampling Event:	Initial App. IV Annual	Assessment	wontoning wen
HGWA-111	Upgradient	S01	A01	Assessment
HGWA-112	Upgradient	S01	A01	Assessment
HGWA-113	Upgradient	S01	A01	Assessment
HGWC-101	Downgradient	S01	A01	Assessment
HGWC-102	Downgradient		BG01	Assessment
HGWC-103	Downgradient	S01	A01	Assessment
HGWC-105	Downgradient	S01	A01	Assessment
HGWC-107	Downgradient	S01	A01	Assessment
HGWC-109	Downgradient	S01	A01	Assessment
HGWC-117	Downgradient	S01	A01	Assessment
HGWC-118	Downgradient	S01	A01	Assessment

Notes:

-- = Not applicable

BG## = Background monitoring event number

S## = Initial annual Appendix IV sampling event number since initiation of the assessment monitoring program.

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

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

	Top of Casing	Aug 2	1, 2019	Oct 2	1, 2019
Well ID	Elevation ⁽¹⁾ (ft NAVD88)	Depth to Water (ft BTOC)	Groundwater Elevations (ft NAVD88)	Depth to Water (ft BTOC)	Groundwater Elevations (ft NAVD88)
Compliance Mo	nitoring Well				
HGWA-111	592.24	14.61	577.63	15.95	576.29
HGWA-112	596.75	15.18	581.57	16.90	579.85
HGWA-113	595.13	12.45	582.68	14.05	581.08
HGWC-101	579.26	13.70	565.56	15.23	564.03
HGWC-102	577.91	13.31	564.60	15.56	562.35
HGWC-103	581.16	14.41	566.75	15.64	565.52
HGWC-105	582.46	18.18	564.28	20.42	562.04
HGWC-107	579.76	15.49	564.27	17.60	562.16
HGWC-109	577.33	10.06	567.27	11.45	565.88
HGWC-117	582.32	17.00	565.32	18.89	563.43
HGWC-118	579.48	13.85	565.63	15.54	563.94
Groundwater Le	evel Monitoring I	Piezometer			
MW-12	584.33	18.97	565.36	20.72	563.61
GWC-4	581.02	14.21	566.81	16.41	564.61
GWC-6	582.01	17.62	564.39	19.68	562.33
GWC-8	580.50	15.05	565.45	16.25	564.25
GWA-14	592.58	8.64	583.94	9.28	583.30
GWA-15	592.03	11.27	580.76	11.25	580.78
GWA-16	583.04	5.32	577.72	(dry)	-
GWC-19	581.31	13.74	567.57	15.05	566.26

Notes:

ft = feet

ft BTOC = feet below top of casing

(1) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

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

	H	ydraulic Gr	adient - Aug	gust 21, 2019	Data	Hydraulic Gradient - October 21, 2019 Data				
Flow Path Direction ⁽¹⁾	h ₁ (ft)	h ₂ (ft)	Δl (ft)	Δh/Δl (ft/ft)	Avg Δh/Δl (ft/ft)	h ₁ (ft)	h ₂ (ft)	Δl (ft)	Δh/Δl (ft/ft)	Avg Δh/Δl (ft/ft)
Eastern Flow Path (GWA-14 to HGWC-118)	583.94	565.63	1,050	0.017		583.30	563.94	1,050	0.018	
Central Flow Path (HGWA-113 to HGWC-103)	582.68	566.75	1,110	0.014	0.014	581.08	565.52	1,110	0.014	0.014
Western Flow Path (HGWA-111 to HGWC-107)	577.63	564.27	1,250	0.011		576.29	562.16	1,250	0.011]

			Averaged for	or Fall 2019
Flow Path Direction ⁽¹⁾	K (ft/d)	n	Δh/Δl (ft/ft)	$V (ft/d)^{(2)}$
Eastern Flow Path (GWA-14 to HGWC-118)				
Central Flow Path (HGWA-113 to HGWC-103)	1.67	0.15	0.014	0.16
Western Flow Path (HGWA-111 to HGWC-107)				

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

 $h_1, h_2 =$ groundwater elevation for identified location

 $\Delta h/\Delta l = hydraulic gradient$

K = hydraulic conductivity

 Δl = distance between identified location 1 and 2

n = effective porosity

V = groundwater flow velocity

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

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

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

	Well ID:	HGWA-111	HGWA-111	HGWA-112	HGWA-112	HGWA-113	HGWA-113	HGWC-101	HGWC-101	HGWC-102	HGWC-103	HGWC-103
	Sample Date:	8/21/2019	10/21/2019	8/21/2019	10/22/2019	8/21/2019	10/22/2019	8/22/2019	10/23/2019	10/23/2019	8/22/2019	10/23/2019
	Parameter ^(1,2)											
	Boron		ND (0.0097 J)		ND (0.016 J)		ND (0.010 J)		0.10	3.1		2.3
Ξ	Calcium		51.0		6.3		7.2		21.9	136		86.5
	Chloride		3.9		5.5		1.9		5.5	7.9		6.1
ND	Fluoride	ND (0.048 J)	ND (0.12 J)	ND	ND (0.050 J)	ND (0.11 J)	ND (0.18 J)	ND	ND	ND (0.22 J)	ND	ND
APPENDIX	рН ⁽³⁾	6.60	7.02	5.80	5.70	6.05	5.98	5.39	5.33	5.68	5.55	5.49
AI	Sulfate		1.8		ND (0.60 J)		6.8		101	ND		248
	TDS		187		81.0		95		221	736		507
	Antimony	ND		ND		ND		ND		ND	ND	
	Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Barium	0.029	0.033	0.027	0.028	0.027	0.027	0.043	0.043	0.037	0.036	0.039
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND (0.000075 J)	ND	ND	ND
	Cadmium	ND	ND	ND	ND	ND	ND	ND (0.00014 J)	ND (0.00020 J)	ND (0.00026 J)	ND (0.00080 J)	ND (0.00091 J)
2	Chromium	ND (0.00061 J)	ND (0.0012 J)	ND (0.0039 J)	ND (0.0040 J)	ND (0.0022 J)	ND (0.0023 J)	ND (0.00064 J)	ND	ND	ND (0.00063 J)	ND (0.0015 J)
	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND (0.0023 J)	ND (0.0018 J)	ND (0.0019 J)	ND (0.0021 J)
APPENDIX	Fluoride	ND (0.048 J)	ND (0.12 J)	ND	ND (0.050 J)	ND (0.11 J)	ND (0.18 J)	ND	ND	ND (0.22 J)	ND	ND
PPE	Lead	ND	ND (0.00016 J)	ND	ND	ND (0.000071 J)	ND (0.000073 J)	ND	ND	ND	ND	ND (0.00043 J)
Α	Lithium	ND (0.0018 J)	ND (0.0026 J)	ND	ND	ND (0.0011 J)	ND (0.0011 J)	ND	ND	ND (0.0012 J)	ND (0.0015 J)	ND (0.0020 J)
	Mercury	ND		ND		ND		ND		ND	ND	
	Molybdenum	ND		ND		ND		ND		ND	ND	
	Radium	0.553 U	0.351 U	0.514 U	0.828 U	0.492 U	0.523 U	0.474 U	0.776 U	0.858 U	0.946 U	0.571 U
	Selenium	ND		ND		ND (0.0025 J)		ND		ND	ND	
	Thallium	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 minimum detection concentration (MDC, specific to combined radium)

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

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.(3) The pH value presented was recorded at the time of sample collection in the field.

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

	Well ID:	HGWC-105	HGWC-105	HGWC-107	HGWC-107	HGWC-109	HGWC-109	HGWC-117	HGWC-117	HGWC-118	HGWC-118
Sample Date:		8/22/2019	10/23/2019	8/23/2019	10/22/2019	8/23/2019	10/22/2019	8/22/2019	10/22/2019	8/22/2019	10/22/2019
	Parameter ^(1,2)					·					
	Boron		1.3		0.91		0.32		1.0		0.65
Η	Calcium		89.4		58.1		42.6		70.9		84.2
	Chloride		3.6		3.6		4.6		12.1		4.5
APPENDIX	Fluoride	ND	ND	ND	ND (0.047 J)	ND (0.034 J)	ND (0.099 J)	ND	ND (0.042 J)	ND (0.070 J)	ND (0.087 J)
PE	рН ⁽³⁾	6.04	6.46	6.26	6.19	6.76	6.58	5.53	6.17	6.93	7.03
Ν	Sulfate		162		123		23.2		133		80.9
	TDS		419		308		212		348		354
	Antimony	ND		ND		ND		ND		ND	
	Arsenic	ND	ND	ND	ND	ND (0.0035 J)	ND (0.0019 J)	ND	ND	ND	ND
	Barium	0.066	0.066	0.038	0.039	0.088	0.087	0.036	0.049	0.052	0.054
	Beryllium	ND	ND	ND	ND	ND	ND	ND (0.000079 J)	ND	ND	ND
	Cadmium	ND	ND	ND (0.00011 J)	ND	ND	ND	ND (0.00064 J)	ND (0.00068 J)	ND	ND
N	Chromium	ND	ND (0.00040 J)	ND	ND	ND	ND (0.00062 J)	ND	ND	ND	ND (0.00066 J)
IX	Cobalt	ND	ND (0.00038 J)	ND	ND	ND (0.0027 J)	ND (0.0022 J)	0.012	0.0064	ND (0.00030 J)	ND (0.00061 J)
QN	Fluoride	ND	ND	ND	ND (0.047 J)	ND (0.034 J)	ND (0.099 J)	ND	ND (0.042 J)	ND (0.070 J)	ND (0.087 J)
APPENDIX	Lead	ND	ND (0.000068 J)	ND	ND (0.000079 J)	ND (0.000058 J)	ND (0.000054 J)	ND	ND (0.00016 J)	ND	ND (0.00025 J)
Ν	Lithium	ND (0.0040 J)	ND (0.0039 J)	ND (0.00092 J)	ND (0.00094 J)	ND (0.00090 J)	ND (0.00088 J)	ND (0.0012 J)	ND (0.0028 J)	ND (0.0018 J)	ND (0.0027 J)
	Mercury	ND		ND		ND		ND		ND	
	Molybdenum	ND		ND		ND		ND		ND	
	Radium	0.694 U	0.584 U	1.69	0.705 U	0.470 U	0.545 U	0.333 U	0.827 U	0.904 U	0.424 U
	Selenium	ND		ND		ND		ND		ND	
	Thallium	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

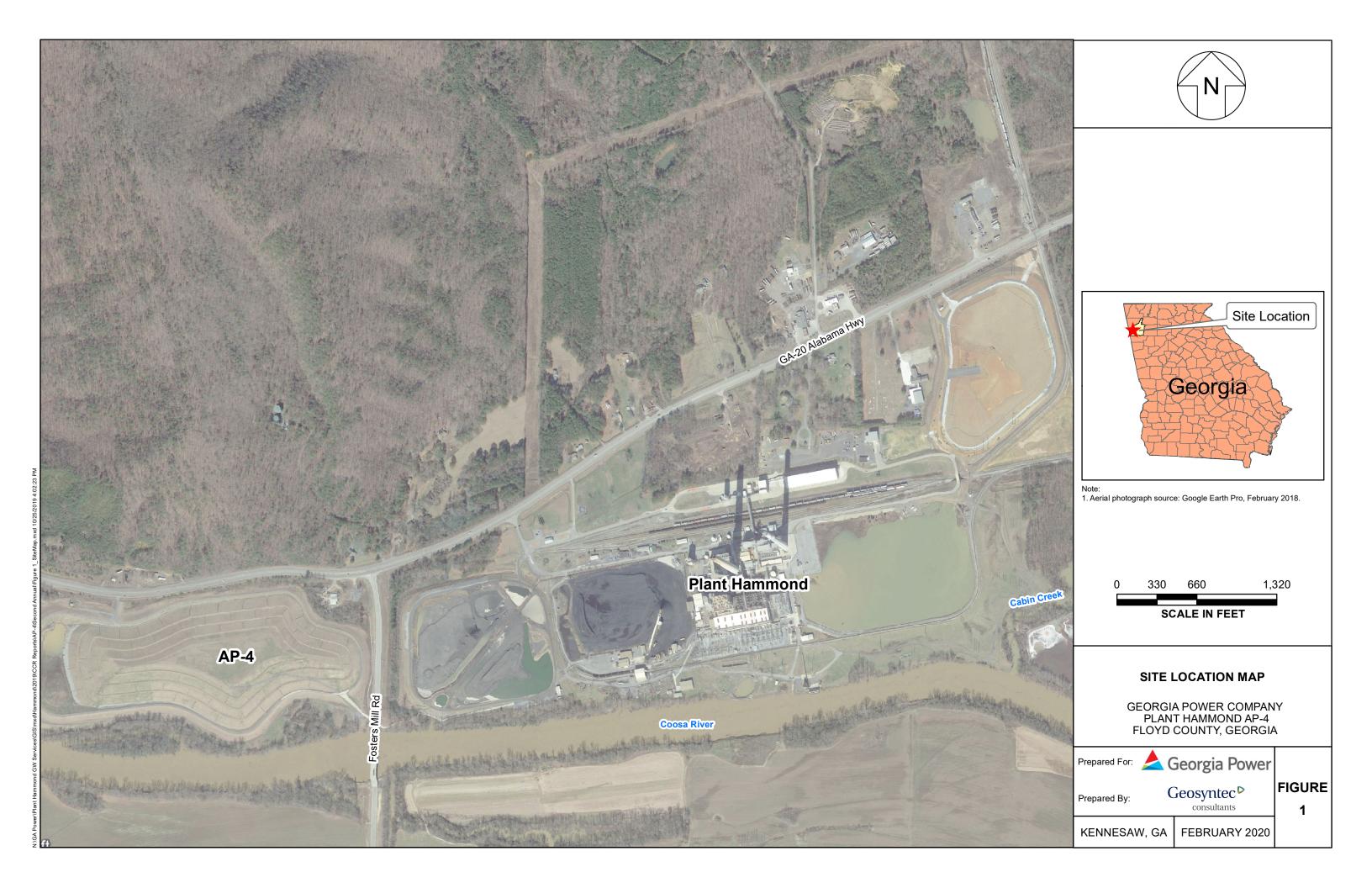
U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

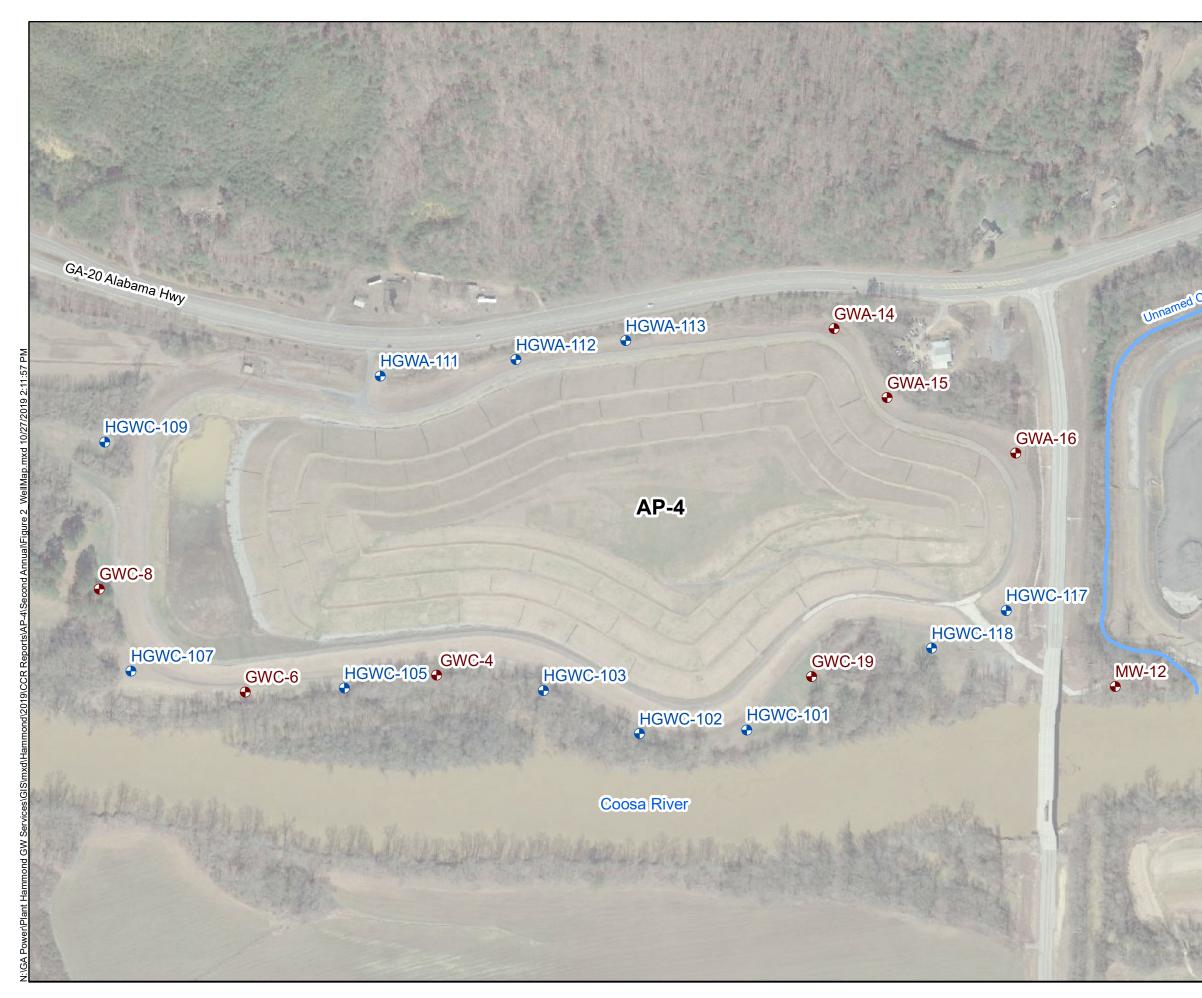
(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries liter (pCi/L).

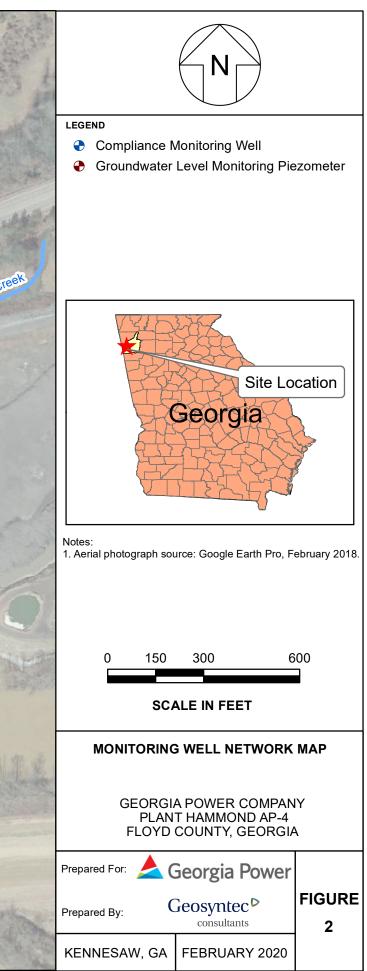
(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320.

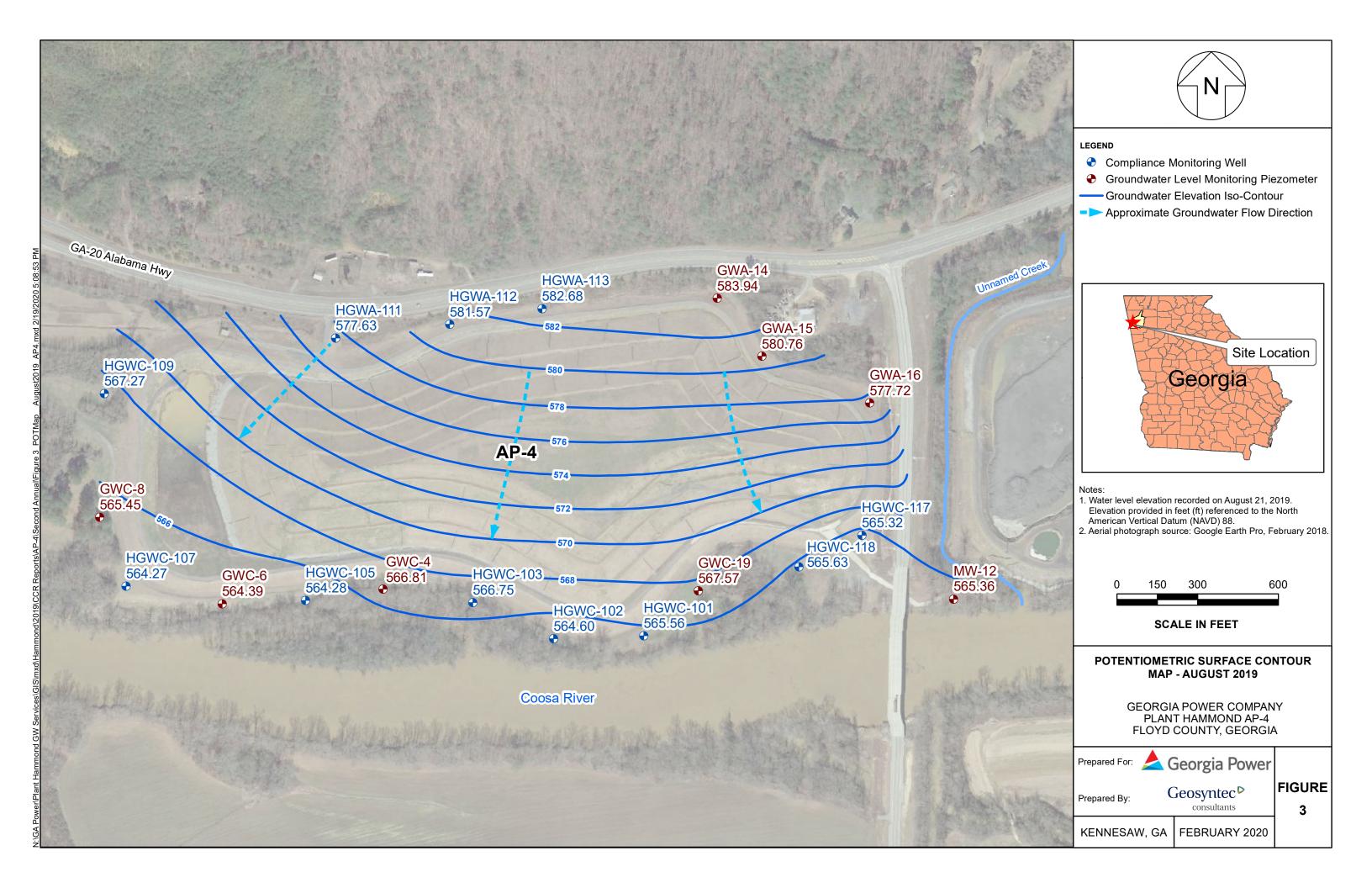
(3) The pH value presented was recorded at the time of sample collection in the field.

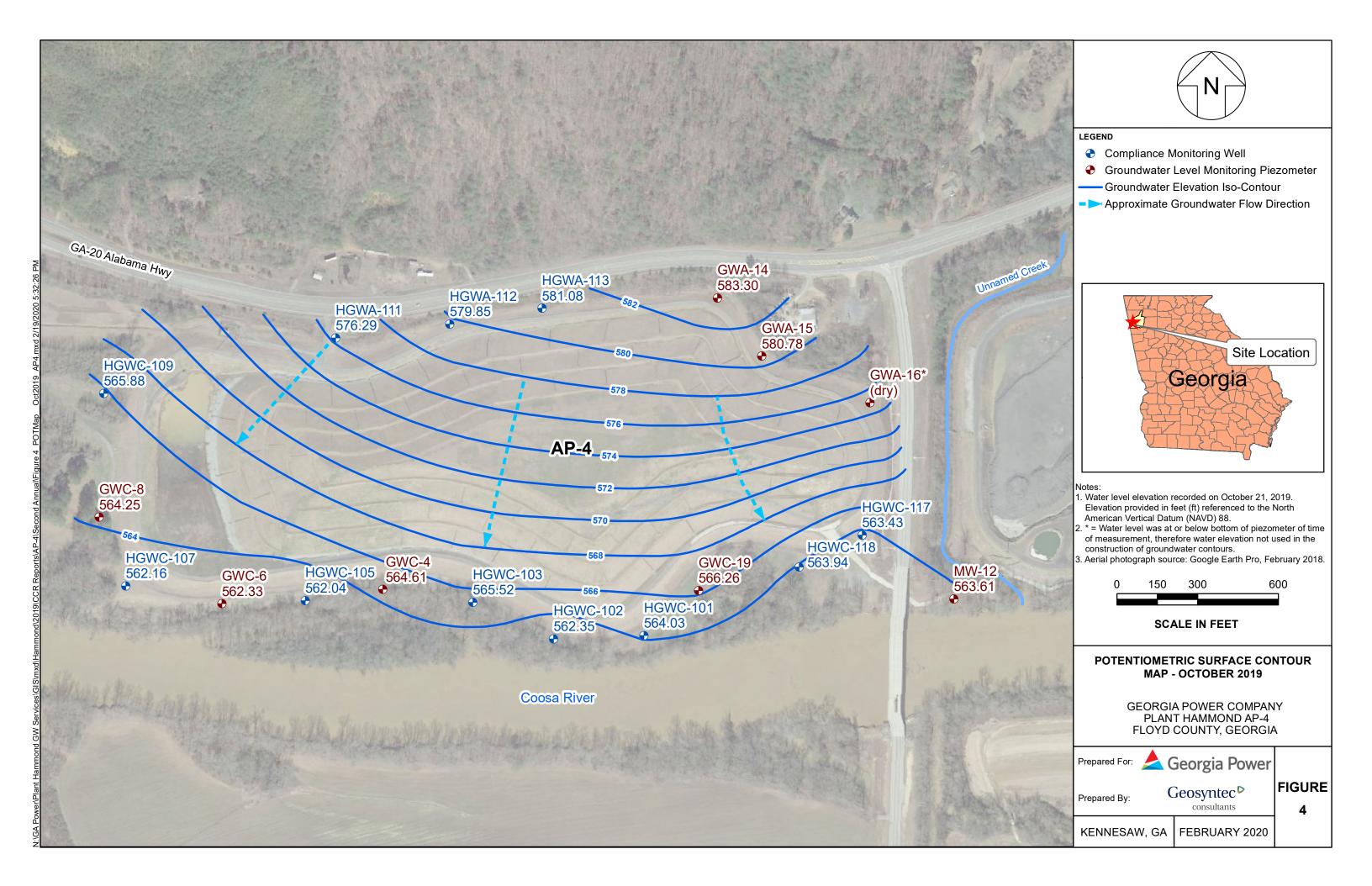
FIGURES











APPENDIX A

Well Inspection Forms

Geosyntec ^c				W	ELL INSPECT	FION FORM		
Field Technicia	an: Chad R	0550	Site/Location	Plant		nd AP-4	Inspection Date: 8/21/19	
1.2.4					Well Inspecti	ion Items		
	Inspection			Prese	ent (Y/N)			
Well ID	Time	Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	Comments regarding well condition
GWC-8	0852	Y	Y	Y	Ý	Y	Y	Good condition
HENA-III	0817	V,	Y	Y	Ý	Y	Y	Good condition
116WC-109	0827	Y	Y	Y	Y	Y	N	Tall grass; potential for snakes
H6WC-107	0901	Y	Y	Y	Y	Y	Y	Good condition
GWC-6	0914	Y	Y	Y	7	У	Ŷ	Sino Some spieler wets in asing
HEWC-105	0919	Y	Y	7	Ŷ	Y	Ý	Some abundared ways nots in asing.
GWC-4	0934	Y	Y	Ý	Y	Ч	×	Spider web in casing.
HGWG103	0940	ý	Ŷ	Y	Y	Y	Y	Good condition
GWC-Z	0150	Ý	V/	Ŷ	Ŷ	¥.	У	Good condition
HSWC-101	0-955	Y	Ń	Y	Ý	ý	K	Tall grass
GWC-19	1009	У	Y	Y	У	Ý	Y	Spider web on well cap
HGWC-118	1015	у	Y	У	У	У	Ý	Goal condition
HGWC-117	1020	Y	Y	Ý	Ý	Y	4	Good Kondition
GWA-16	1039	9	y y	Ý	Ý	Ŷ	4	Good Condition
C.WA-15	1052	Y	4	4	Y	Y	У	Good conditions
GWA-M	1109	7	У	4	Y	7	4	Good condition
HGWA-113	1115	1	1	Ý	Ý	Ý	Y	Good condition
H6WA-112	1120	4	Ý	Ý	Y	Y	9	Good condition
							96.C	

Groundwater Monitoring Well Integrity Form

Site Name	Plant Hammond	_		
Permit Number				
Well ID	MGWA-III			
ate, field conditions ^ר	8/28/19 SIOF party doudy	-	20	2/2
1 Location/I		yes	no	n/a
а	Is the well visible and accessible?	\checkmark		
b	Is the well properly identified with the correct well ID?	$\overline{\checkmark}$		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	J.	\checkmark	
d	Is the drainage around the well acceptable? (no standing water,	1		
	nor is well located in obvious drainage flow path)			
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be			
	secured?	-		
b	Is the casing free of degradation or deterioration?	1		
С	Does the casing have a functioning weep hole?	V		
d	Is the annular space between casings clear of debris and water,	1		
	or filled with pea gravel/sand?	$\overline{}$		
е	Is the well locked and is the lock in good condition?	<u> </u>		
3 <u>Surface pa</u>	ad	/		
a	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?	3	V	
С	Is the well pad in complete contact with the protective casing?	\checkmark		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not	t /		
	move when stepped on)	<u> </u>		
е	Is the pad surface clean (not covered with sediment or debris)?		<u></u>	
4 Internal ca	sing	. 1		
а	Does the cap prevent entry of foreign material into the well?	$\underline{\vee}$		
b	Is the casing free of kinks or bends, or any obstructions from	1		
	foreign objects (such as bailers)?	<u> </u>		
С	Is the well properly vented for equilibration of air pressure?	<u>v</u> _		
d	Is the survey point clearly marked on the inner casing?	~		
е	Is the depth of the well consistent with the original well log?	*		
	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)	<u></u>		
	Groundwater Wells Only:	-		
	Does well recharge adequately when purged?	<u> </u>		
	If dedicated sampling equipment installed, is it in good condition			1
	and specified in the approved groundwater plan for the facility?			<u> </u>
С	Does the well require redevelopment (low flow, turbid)?			
	our 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?	<u> </u>		
7 Corrective	actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Site Name Permit Number Well ID Nate, field conditions	Plant Hammond HGUA-112 B/21/19 91°F Partly cloudy	9 9 9		
		yes	no	n/a
1 Location/I	dentification	1		
а	Is the well visible and accessible?	~		
b	Is the well properly identified with the correct well ID?			
С	Is the well in a high traffic area and does the well require		1	
	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			
u	secured?	./		
b	Is the casing free of degradation or deterioration?	-		()
c	Does the casing have a functioning weep hole?	<u> </u>)	
d	Is the annular space between casings clear of debris and water,	<u> </u>		
G	or filled with pea gravel/sand?	1		
е	Is the well locked and is the lock in good condition?	$\overline{}$);	
Ū				
3 <u>Surface p</u> a	ad			
а	Is the well pad in good condition (not cracked or broken)?		_	
b	Is the well pad sloped away from the protective casing?		$\overline{}$	
С	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)?	$\overline{}$		
4 <u>Internal ca</u>	sing			
a	Does the cap prevent entry of foreign material into the well?	1		
b	Is the casing free of kinks or bends, or any obstructions from			
D	foreign objects (such as bailers)?	\checkmark		
с	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)	1		
		1		
	Groundwater Wells Only:			
	Does well recharge adequately when purged?	1		
	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 v	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?	\checkmark		
7 Corrective	actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Site Name	AP-4	_		
Permit Number				
Well ID	46WA-113	-		
ate, field conditions ^ר	08/21/19 clear, sunny 8200 90"	6		1
1 Location/Id	dentification	yes	no	n/a
а	Is the well visible and accessible?	`×`		
b	Is the well properly identified with the correct well ID?	×		
С	Is the well in a high traffic area and does the well require			5
	protection from traffic?		\mathbf{X}	
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)	<u>X</u>		
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?	V		
С	Does the casing have a functioning weep hole?	$\overline{}$		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?	X		
е	Is the well locked and is the lock in good condition?	X		
3 Surface pa	ad			
a	Is the well pad in good condition (not cracked or broken)?	×		
	Is the well pad sloped away from the protective casing?	~		
c	Is the well pad in complete contact with the protective casing?	X	·	
	Is the well pad in complete contact with the ground surface and	<u> </u>	<u> </u>	
	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	X		
	Is the pad surface clean (not covered with sediment or debris)?	×		
4 <u>Internal ca</u>	sing			
	Does the cap prevent entry of foreign material into the well?	*		
	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	x		
	Is the well properly vented for equilibration of air pressure?	<u>~</u>		
	Is the survey point clearly marked on the inner casing?	$\overline{\mathbf{x}}$		· · · · · · · · · · · · · · · · · · ·
	Is the depth of the well consistent with the original well log?	X		
	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)	\times		
5 <u>Sa</u> mplina:	Groundwater Wells Only:			
	Does well recharge adequately when purged?	\mathbf{X}		
	If dedicated sampling equipment installed, is it in good condition	<u> </u>		
	and specified in the approved groundwater plan for the facility?			×
	Does the well require redevelopment (low flow, turbid)?		<u>×</u>	
6 Based on v	our 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 Corroctive	actions as passed at hydrates			
/ Corrective	actions as needed, by date:			

Site Name	Plant Hammond			
Permit Number		-		
Well ID	HGWC-101			
∩ate, field conditions	8122/19; 86°F sunny	-		
		yes	no	n/a
1 Location/le				
a	Is the well visible and accessible?			
b	Is the well properly identified with the correct well ID?	\checkmark		
С	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 <u>notective</u>	Is the protective casing free from apparent damage and able to be			
u	secured?			
b	Is the casing free of degradation or deterioration?	-		
с С	Does the casing have a functioning weep hole?			
- d	Is the annular space between casings clear of debris and water,			
u	or filled with pea gravel/sand?	1		
е	Is the well locked and is the lock in good condition?			
C	to the weatlooked and is the lock in good condition:			
3 <u>Surface pa</u>	ad			
а	Is the well pad in good condition (not cracked or broken)?	\checkmark		
b	Is the well pad sloped away from the protective casing?		$\overline{}$	
С	Is the well pad in complete contact with the protective casing?	$\overline{}$		
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)	V		
е	Is the pad surface clean (not covered with sediment or debris)?	$\overline{}$		
1 lote we all a s				
4 <u>Internal ca</u>		1		
	Does the cap prevent entry of foreign material into the well?			
	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?			
	Is the well properly vented for equilibration of air pressure?	<u> </u>		
	Is the survey point clearly marked on the inner casing?	-+-		
	Is the depth of the well consistent with the original well log? 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)	\checkmark		
5 Sampling:	Groundwater Wells Only:	1		
a	Does well recharge adequately when purged?	V		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			~
С	Does the well require redevelopment (low flow, turbid)?		V	
	our professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater	1		
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?			
7 Corrective	actions as needed, by date:			

	Groundwater Monitoring Well Integrity Form			
e Name	Plant Hammond			
mit Number		-2		
II ID	HGQ1C-103	-0		
e, field conditions		-		
,	general party strikely	- yes	no	n/a
1 Location/I	dentification	,00	no	n/d
а	Is the well visible and accessible?	V		
b	Is the well properly identified with the correct well ID?	V		
С	Is the well in a high traffic area and does the well require	.		
	protection from traffic?		\checkmark	
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?	$\overline{}$		
d	Is the annular space between casings clear of debris and water,	_*		
	or filled with pea gravel/sand?	\checkmark		
е	Is the well locked and is the lock in good condition?	$\overline{\checkmark}$		
3 <u>Surface p</u>	ad			
a <u>ounace p</u> a	ls the well pad in good condition (not cracked or broken)?	\checkmark		
b	Is the well pad sloped away from the protective casing?			2 5
c	Is the well pad in complete contact with the protective casing?		_ <u>v</u>	
d	Is the well pad in complete contact with the ground surface and			
6	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)			
е	Is the pad surface clean (not covered with sediment or debris)?	1/		
1 Internal or	poing			
4 <u>Internal ca</u>	-	V		
a	Does the cap prevent entry of foreign material into the well? Is the casing free of kinks or bends, or any obstructions from			
b		V		
0	foreign objects (such as bailers)?			
c d	Is the well properly vented for equilibration of air pressure? Is the survey point clearly marked on the inner casing?	<u> </u>		
	Is the depth of the well consistent with the original well log?	<u> </u>		
e f	Is the casing stable? (or does the pvc move easily when touched			
I	or can it be taken apart by hand due to lack of grout or use of slip			
	couplings in construction)			
E Compliant				
	Groundwater Wells Only:			
a	Does well recharge adequately when purged?	<u> </u>		
b	If dedicated sampling equipment installed, is it in good condition			
с	and specified in the approved groundwater plan for the facility? Does the well require redevelopment (low flow, turbid)?		—	
C	bees the weil require redevelopment (low now, 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?			<u> </u>
7 Corrective	actions as needed, by date:			

Site Name	Plant Hammond			
Permit Number				
Well ID	HGWC-105	=:		
ate, field conditions	8/22/19 911F partly cloudy	-	20	n/o
1 Location/I		yes	no	n/a
а	Is the well visible and accessible?	V.		
b	Is the well properly identified with the correct well ID?	$\overline{}$		
С	Is the well in a high traffic area and does the well require protection from traffic?		\checkmark	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	5		
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be secured?	\checkmark		
b	Is the casing free of degradation or deterioration?	V	·	
С	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?			
е	Is the well locked and is the lock in good condition?			··
3 <u>Surface pa</u>		1		
а	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)	\rightarrow		
e	Is the pad surface clean (not covered with sediment or debris)?			
4 <u>Internal ca</u>	lsing	1		
а	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)?			
С	Is the well properly vented for equilibration of air pressure?	~		
d	Is the survey point clearly marked on the inner casing?	VI		
е	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)	$\underline{}$		
5 Sampling:	Groundwater Wells Only:	1		
а	Does well recharge adequately when purged?	\checkmark		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			
С	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	1		
	Monitoring Program and 2) comply with the applicable regulatory	./		
	requirements?	N		
7 Corrective	actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

ł.

ame	Plant Hammond	•		
Number	Harris	2		
	HGWC-107	9		
iela conditions	3/23/19; 73°F; eloisdy			,
1 Location/	dentification	yes	no	n/a
1 Location/I	Is the well visible and accessible?	1		
a	Is the well properly identified with the correct well ID?			
b				
C	Is the well in a high traffic area and does the well require		.(
d	protection from traffic?		A- 1	
d	Is the drainage around the well acceptable? (no standing water,	\int		
	nor is well located in obvious drainage flow path)	<u> </u>		
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be			
	secured?	4		
b	Is the casing free of degradation or deterioration?	1		
С	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?	V		
е	Is the well locked and is the lock in good condition?			
0.0.4				
3 Surface pa				
a	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?		<u> </u>	
C	Is the well pad in complete contact with the protective casing?	<u> </u>		
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)	\mathbf{I}		
е	Is the pad surface clean (not covered with sediment or debris)?			-
e	is the pad surface clean (not covered with sediment of debits):			
4 <u>Internal ca</u>	ising	C		
а	Does the cap prevent entry of foreign material into the well?	J		
b	Is the casing free of kinks or bends, or any obstructions from	- /		
	foreign objects (such as bailers)?			
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	~		
е	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	\checkmark		
	couplings in construction)			
5 Sampling.	Groundwater Wells Only:	1		
a <u>bamping.</u>	Does well recharge adequately when purged?	\checkmark		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?		,	
С	Does the well require redevelopment (low flow, turbid)?		\checkmark	
	your professional judgement, is the well construction / location		1	
	appropriate to 1) achieve the objectives of the Groundwater	/	/	
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?	<i>v</i>		
7 Corrective	actions as needed, by date:			
/ CONECTIVE	actions as needed, by date.			

Groundwate	^r Monitoring	Well	Integrity Form
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Name	Plant Hammond			
nit Number		-		
ID	MGNC-109	-		
, field conditions	BIZDIA 25°F abudy	-		
,		- yes	no	n/a
1 Location/I	dentification	,	110	11/04
a	Is the well visible and accessible?	J		
b	Is the well properly identified with the correct well ID?	$\overline{\nabla}$		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?		\checkmark	
d	Is the drainage around the well acceptable? (no standing water,	1		
	nor is well located in obvious drainage flow path)	5		
			·	
2 Protective				
а	Is the protective casing free from apparent damage and able to be	,		
	secured?	$\overline{\checkmark}$		
b	Is the casing free of degradation or deterioration?	\rightarrow		
С	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?	4		·
е	Is the well locked and is the lock in good condition?	<u> </u>		
3 <u>Surface p</u> a	be			
a	Is the well pad in good condition (not cracked or broken)?	V		
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)	\checkmark		
е	Is the pad surface clean (not covered with sediment or debris)?	$\overline{}$		
4 <u>Internal ca</u>		1		
a	Does the cap prevent entry of foreign material into the well?	<u> </u>		
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?		<u> </u>	<u> </u>
d	Is the survey point clearly marked on the inner casing?	<u> </u>		
e f	Is the depth of the well consistent with the original well log? Is the casing stable? (or does the pvc move easily when touched			
I	or can it be taken apart by hand due to lack of grout or use of slip			
	couplings in construction)	1		
5 <u>Sampling:</u>	Groundwater Wells Only:	~		
а	Does well recharge adequately when purged?	\checkmark		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			~
С	Does the well require redevelopment (low flow, turbid)?		$\overline{\nabla}$	
6 Deet				_
o Based on	your professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater	1		
	Monitoring Program and 2) comply with the applicable regulatory	1		
		N.		
	requirements?	1		
	actions as needed, by date:			

Site Name	Plant Klammond	•);		
Permit Number		-0		
Well ID	HGWC-117	2		
ate, field conditions	Shoung 77 of sunny			,
		yes	no	n/a
2	(Identification			
a	Is the well visible and accessible?			
b	Is the well properly identified with the correct well ID?	<u></u>		
С	Is the well in a high traffic area and does the well require		\checkmark	
	protection from traffic?		· · · · ·	
d	Is the drainage around the well acceptable? (no standing water,	./		
	nor is well located in obvious drainage flow path)	<u></u>	÷	
2 Protectiv	e Casing			
a	Is the protective casing free from apparent damage and able to be	1		
	secured?	V		
b	Is the casing free of degradation or deterioration?	1		
С	Does the casing have a functioning weep hole?	1		
d	Is the annular space between casings clear of debris and water,	<u> </u>		
	or filled with pea gravel/sand?	/		
е	Is the well locked and is the lock in good condition?	$\overline{}$		
3 <u>Surface</u>		1		
a	Is the well pad in good condition (not cracked or broken)?	· · · · ·		
b	Is the well pad sloped away from the protective casing?		\checkmark	
c	Is the well pad in complete contact with the protective casing?	/		<u> </u>
d	Is the well pad in complete contact with the ground surface and	· .		
	stable? (not undermined by erosion, animal burrows, and does not	1		
	move when stepped on)	N A		
е	Is the pad surface clean (not covered with sediment or debris)?	<u> </u>		
4 Internal of	asing	,		
а	Does the cap prevent entry of foreign material into the well?	\checkmark		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?			
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	~		
е	Is the depth of the well consistent with the original well log?	5		
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	1		
	couplings in construction)	V		
5 Sampling	: Groundwater Wells Only:	~		
a <u>Samping</u>	Does well recharge adequately when purged?			
b	If dedicated sampling equipment installed, is it in good condition			
D	and specified in the approved groundwater plan for the facility?			1
с	Does the well require redevelopment (low flow, turbid)?		1	
Ŭ				
6 Based or	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	1		
	requirements?	~		
7 Comostin	a actions as needed, by date:			
	e actions as needed, by date:			

Site Name	Plant Hammond			
Permit Number		-		
Well ID	HGWC - 118	-		
∩ate, field conditions				
	5	yes	no	n/a
1 Location/le	dentification	/		
a	Is the well visible and accessible?	<u></u>		
b	Is the well properly identified with the correct well ID?			
С	Is the well in a high traffic area and does the well require		1	
	protection from traffic?		1	
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)	~		
			11	
2 Protective				
а	Is the protective casing free from apparent damage and able to be	1		
× .	secured?	<u> </u>		
b	Is the casing free of degradation or deterioration?	<u> </u>		
C	Does the casing have a functioning weep hole?			
d	Is the annular space between casings clear of debris and water,	1		
	or filled with pea gravel/sand?			
е	Is the well locked and is the lock in good condition?			
3 Surface pa	ad			
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?	$\overline{}$		
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)	V		
e	Is the pad surface clean (not covered with sediment or debris)?	~		
4 <u>Internal ca</u>		/		
а	Does the cap prevent entry of foreign material into the well?	-		
b	Is the casing free of kinks or bends, or any obstructions from	1		
	foreign objects (such as bailers)?	~		
С	Is the well properly vented for equilibration of air pressure?	~		
d	Is the survey point clearly marked on the inner casing?	\checkmark		
е	Is the depth of the well consistent with the original well log?	.1/		
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)	<u> </u>		
5 Sampling:	Groundwater Wells Only:			
	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?			\checkmark
С	Does the well require redevelopment (low flow, turbid)?			
	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	1		
	requirements?	<u> </u>		
7 Compating	actions as pooled by detail			
/ Corrective	actions as needed, by date:			

Site Name Permit Number Puch Historian Parte, field conditions Image: C_2 Pate, field conditions Image: C_2 Pate, field conditions Image: C_2 1 Location/Identification a lis the well visible and accessible? b is the well properly identified with the correct well ID? c lis the vell properly identified with the correct well ID? c lis the drinage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path) 2 Protective Casing a lis the protective casing free from apparent damage and able to be secured? b Is the casing free of degradation or detorioration? c Does the casing free of degradation or detorioration? d lis the annular space between casings clear of debris and water, or filled with pag grave/sand? d Is the well pad in good condition (not cracked or broken)? b lis the well pad is good away from the protective casing? c lis the well pad is coped away from the protective casing? d lis the well pad is coped away from the protective casing? c lis the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not more when stepped or) e lis the pad surface clean (not covered with sediment or debris)? 4 Internal casing a Does well property water dor equipitation of air pressure? d lis the survey point clearly marked on the inner casing? c lis the dation the locatistent with the original well log? f lis the using stable? (or does the prove move easing? well stables?) d lis the survey point clearly marked on the inner casing? d lis the survey point clearly marked on the inner casing? d lis		Groundwater Monitoring Well Integrity Form			
Permit Number Weil ID Yeate, field conditions <u>9/L/14/17/5°F c.(c.k/x)</u> yes no n/a a is the weil visible and accessible? b is the weil properly identified with the correct weil ID? c is the weil or high identified with the correct weil ID? d is the driven traffic? 2/L/14/17/5°F c.(c.k/x) yes no n/a 3 1 <u>Location/Identification</u> a is the weil an a high traffic area and does the weil require protection from traffic? d is the driving aground the weil acceptable? (no standing water, nor is well located in obvious drainage flow path) 2 <u>Protective Casing</u> 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 free of degradation or deterioration? d is the annular space between casings clear of debris and water, or filed with pea grave/stand? e is the well pad in good condition (not cracked or broken)? b is the well pad is good condition (not cracked or broken)? b is the well pad is opped away from the protective casing? c 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)? d is the well pad is 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)? c 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 depth of the well consistent with the original well (og? f is the casing free of kinks or bends, or any obstructions from foreign objects (such as ballers?) c is the well properly vented for equilibration of air pressure? d is the depth of the well consistent with the original well (og? f is the depth of the well consistent with the original we	01 N	PL at Harange			
Well ID CuC-2 Prate, field conditions BILL/LG; 75°F, c(cuAy) 1 Location/Identification a Is the well wisble and accessible? b Is the well wisble and accessible? c Is the well wisble and accessible? d Is the well property identified with the correct well ID? c Is the well wisble and accessible? (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? e Is the multar space between casing clear of debris and water, or filled with pea gravel/sand? e Is the well pad in good condition (not cracked or broken)? b Is the well pad in complete contact with the protective casing? c Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and dees not move when stepped on) e Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and dees not move when stepped on) e Is the grave pont clearly marked on the inner casing?		Phile from the forth			
Prate, field conditions <u><i>BLUKG 75</i>** clock</u> yes no n/a 1 <u>Location/Identification</u> yes no n/a a is the well properly identified with the correct well ID?		C. C. 3	-);		
1 Location/Identification yes no n/a a Is the well visible and accessible? yes no n/a b Is the well name well no correct well ID? yes no n/a c Is the well name well name does the well require protection from traffic? yes yes no n/a d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path) yes			-		
1 Location/Identification a Is the well visible and accessible? b 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 annular space between casings clear of debris and water, or filed with pea grave/sand? c Does the casing free of degradation or deterioration? c Does the casing have a functioning weep hole? d 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 in good condition (not cracked or broken)? b Is the well pad in complete contact with the protective casing? c Is the well pad in complete contact with the protective casing? c Is the well pad in complete contact with the gravel subtice? d Is the well pad in complete contact with the gravel subtice? c Is the well pad in complete contact with the gravel subtice? c Is the well pad in complete contact	ale, new conditions	BILLING TO CLOCKY	-	no	n/o
a Is the well robible and accessible? b Is the well in a high traffic area and does the well require protection from traffic? c 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 charange around the well acceptable? (no standing water, or filed with pee agravely and the well acceptable?) b Is the casing free of degradation or deterioration? c Does the casing fave a functioning weep hole? d Is the well acceptable? d Is the well acceptable? d Is the well pade and is the lock in good condition? 3 Surface pad a Is the well pade in good condition (not cracked or broken)? b Is the well pad in complete contact with the protective casing? c Is the well pad in complete contact with the protective casing? d Is the well pade in complete contact with the ground surface and stable? (not undermined by erssion, animal burrows, and does not move when stepped on) e Is the well pade in complete contact with the ground surface and stable? c Is the well pade in construction of air pressure? c Is the well pade surface (ean (not covered with sediment or debris)?	1 Location/	Identification	yes	no	n/a
b Is the well properly identified with the correct well ID? c Is the well in a high traffic area and dees 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 well locked and is the lock in good condition? e Is the well pad in good condition (not cracked or broken)? e 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 well pad in complete contact with the ordents urface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on) e Is the well pad in complete contact with the orginal well? d Is the ap a surface clean (not covered with sediment or debris?)? d Is the ap a surface clean (not covered with sediment or debris?)? c Is the well pad in complete contact with the orginal well? d Is the well pad supped on the protective casing? c Is the well pad su			5		
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 protective casing free of degradation or deterioration? c Does the casing have a functioning weep hole? d Is the well pade as functioning weep hole? d Is the well pade as functioning weep hole? d Is the well pade as functioning weep hole? d Is the well pade as functioning weep hole? d Is the well pade as functioning weep hole? d Is the well pade in good condition (not cracked or broken)? b Is the well pad in complete contact with 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 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 well property vented for equilibration of air pressure? d Is the easing free of kinks or bends, or any ob			~		
<pre>protection from traffic? d is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path) 2 <u>Protective Casing</u> 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 grave/sand? e is the well pad in good condition (not cracked or broken)? b is the well pad in good condition (not cracked or broken)? d is the well pad in good condition (not cracked or broken)? b 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 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 casing free of kinks or bends, or any obstructions from foreign objects (such as baliers)? c is the well protect (such as baliers)? c is the deapth of the well consistent with the original well log? f is the casing stable? (or does the proce weasily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction) 5 <u>Sampling: Groundwater Wells Only:</u> 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 a</pre>			- T		
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Monitoring Program and 2) comply with the applicable regulatory requirements?	o Based on				
requirements?					
			\checkmark		
7 Corrective actions as needed, by date:		requiremente :			• •••• >)
	7 Corrective	actions as needed, by date:			

Site Name Permit Number	Plant Hammond			
Well ID	GWC-4	60		
Pate, field conditions		-		
ale, neid conditions	8/21/19; 75°F cloudy	-		
1 Leastion/	dentification	yes	no	n/a
	dentification	./		
a	Is the well visible and accessible?			
b	Is the well properly identified with the correct well ID?			
С	Is the well in a high traffic area and does the well require	~	-	
	protection from traffic?		25	
d	Is the drainage around the well acceptable? (no standing water,	/		
	nor is well located in obvious drainage flow path)	V		
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be			
a	secured?			
b	Is the casing free of degradation or deterioration?	<u></u>		
	Does the casing have a functioning weep hole?	<u> </u>		
C	•		<u> </u>	
d	Is the annular space between casings clear of debris and water,	./		
	or filled with pea gravel/sand?	<u> </u>	. <u> </u>	
е	Is the well locked and is the lock in good condition?			
3 <u>Surface p</u>	ad			
a	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?		$\overline{}$	
C	Is the well pad in complete contact with the protective casing?		<u> </u>	
d	Is the well pad in complete contact with the ground surface and	<u> </u>		
ŭ	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	V		
е	Is the pad surface clean (not covered with sediment or debris)?	<u> </u>		
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4 Internal ca		1		
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b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	V,		
С	Is the well properly vented for equilibration of air pressure?	$\overline{\mathbf{V}}$		
d	Is the survey point clearly marked on the inner casing?		$\overline{}$	
е	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	1		
	couplings in construction)	\checkmark		
F 0				
	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?			
С	Does the well require redevelopment (low flow, turbid)?			
6 Based on	your professional judgement, is the well construction / location			
U Daseu Un	appropriate to 1) achieve the objectives of the Groundwater			
		1		
	Monitoring Program and 2) comply with the applicable regulatory requirements?	J		
	requirements :			
7 Corrective	actions as needed, by date:			

ite Name	plant Hammond			
ermit Number		8		
/ell ID	GWJC-G			
ate, field conditions	8/21/14) 75°F overcast	VAS	20	n/a
1 Location/	Identification	yes	no	11/a
а	Is the well visible and accessible?	\checkmark		
b	Is the well properly identified with the correct well ID?	1		
С	Is the well in a high traffic area and does the well require	,		
	protection from traffic?	<u> </u>	4	
d	Is the drainage around the well acceptable? (no standing water,	1		
	nor is well located in obvious drainage flow path)	<u> </u>		
2 Protective	e Casing			
а	Is the protective casing free from apparent damage and able to be			
	secured?	\checkmark		
b	Is the casing free of degradation or deterioration?	<u> </u>		
С	Does the casing have a functioning weep hole?			
d	Is the annular space between casings clear of debris and water,	1		
	or filled with pea gravel/sand?	<u> </u>		
е	Is the well locked and is the lock in good condition?			
3 <u>Surface p</u>		/		
а	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?		\checkmark	
С	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)	<u> </u>		
e	Is the pad surface clean (not covered with sediment or debris)?	V		
4 <u>Internal ca</u>		1		
а	Does the cap prevent entry of foreign material into the well?	<u> </u>		
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 f	Is the depth of the well consistent with the original well log? Is the casing stable? (or does the pvc move easily when touched			<u> </u>
1	or can it be taken apart by hand due to lack of grout or use of slip	1		
	couplings in construction)	J		
5 Sampling	Groundwater Wells Only:			
a <u>Samping.</u>	Does well recharge adequately when purged?			
b	If dedicated sampling equipment installed, is it in good condition			
, v	and specified in the approved groundwater plan for the facility?			
С	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	120		
	Monitoring Program and 2) comply with the applicable regulatory	/		
	requirements?	√		
7 Corrective	actions as needed, by date:			
	actions as needed, by date.			

Site Name	Plant Hammond	_		
Permit Number		_		
Well ID	GWC-8	_		
Date, field conditions	08/21/4; 73°F Overcart	-		
1 Location/I	dentification	yes	no	n/a
a	Is the well visible and accessible?	\checkmark		
b	Is the well properly identified with the correct well ID?	1		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	\checkmark	1	
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)	\checkmark		
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be			
	secured?	J		
b	Is the casing free of degradation or deterioration?	7		
С	Does the casing have a functioning weep hole?	X	$\overline{}$	
d	Is the annular space between casings clear of debris and water,		_	
	or filled with pea gravel/sand?			
е	Is the well locked and is the lock in good condition?	\checkmark		
3 Surface pa	ad	,		
a	Is the well pad in good condition (not cracked or broken)?	\checkmark		
b	Is the well pad sloped away from the protective casing?		$\overline{}$	
С	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)	\checkmark		
е	Is the pad surface clean (not covered with sediment or debris)?	~		
4 Internal ca	sing			
a	Does the cap prevent entry of foreign material into the well?	\checkmark		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	\checkmark		
С	Is the well properly vented for equilibration of air pressure?	$\overline{}$		
d	Is the survey point clearly marked on the inner casing?		$\overline{\mathbf{A}}$	
е	Is the depth of the well consistent with the original well log?	\checkmark		
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	1		
	couplings in construction)	<u> </u>		
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?			
С	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	r		
	requirements?	<u> </u>		
7 Corrective	actions as needed, by date:			
. concouve	actions as notation, by date.			

Groundwate	^r Monitoring	Well	Integrity Form	
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	Groundwater Monitoring Well Integrity Form			
Name	Plant Hammorid			
it Number				
ID	GNA~14	•		
field conditions	8/21/19:79 F porth dout	-		
		yes	no	n/a
1 Location/Id	dentification	1		
a	Is the well visible and accessible?	2,		
b	Is the well properly identified with the correct well ID?	$ \rightarrow $		
С	Is the well in a high traffic area and does the well require			·)
	protection from traffic?		1	
d	Is the drainage around the well acceptable? (no standing water,	1		0
	nor is well located in obvious drainage flow path)	V		
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be	,		
	secured?	\checkmark		
b	Is the casing free of degradation or deterioration?	$\overline{\mathcal{J}}$		
С	Does the casing have a functioning weep hole?	$\overline{}$		-
d	Is the annular space between casings clear of debris and water,			3
	or filled with pea gravel/sand?	\checkmark		
е	Is the well locked and is the lock in good condition?			
3 Surface pa	ad			
a	Is the well pad in good condition (not cracked or broken)?	1		
	Is the well pad sloped away from the protective casing?		\rightarrow	
	Is the well pad in complete contact with the protective casing?			
	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)	V		
	Is the pad surface clean (not covered with sediment or debris)?	1		
4 Internal ca	sing			_
	Does the cap prevent entry of foreign material into the well?	2		
	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	\checkmark		
	Is the well properly vented for equilibration of air pressure?			
	Is the survey point clearly marked on the inner casing?	~		
	Is the depth of the well consistent with the original well log?			
	Is the casing stable? (or does the pvc move easily when touched	<u> </u>		
	or can it be taken apart by hand due to lack of grout or use of slip			
	couplings in construction)	1		
	Groundwater Wells Only:			
	Does well recharge adequately when purged?	<u> </u>		-
	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?			
	our professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater	2		
	Monitoring Program and 2) comply with the applicable regulatory	1		
	requirements?	V		
		-	()	_

Site Name	Plant Hammond	- 2:		
Permit Number	- 1	•2		
Well ID	GWA-15	.		
ate, field conditions	Spille ; the partly cloudy	2		
		yes	no	n/a
1 Location/I	dentification	/		
а	Is the well visible and accessible?	√		
b	Is the well properly identified with the correct well ID?			
С	Is the well in a high traffic area and does the well require		7	
	protection from traffic?		-	
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)	J		
2 Protective				
а	Is the protective casing free from apparent damage and able to be			
	secured?			
b	Is the casing free of degradation or deterioration?	J		
С	Does the casing have a functioning weep hole?	 Image: A start of the start of		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?	\checkmark		
е	Is the well locked and is the lock in good condition?	1		
0.0(_ _		
3 <u>Surface p</u>		,		
a	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?			
С	Is the well pad in complete contact with the protective casing?	<u> </u>	1	
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)?	N		
4 Internal ca				
		.1		
a	Does the cap prevent entry of foreign material into the well?	<u> </u>		
b	Is the casing free of kinks or bends, or any obstructions from	./		
	foreign objects (such as bailers)?	V		<u> </u>
С	Is the well properly vented for equilibration of air pressure?	1		
d	Is the survey point clearly marked on the inner casing?			
е	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	1		
	couplings in construction)			
5 Sampling	Groundwater Wells Only:			
a <u>euripiirig</u> .	Does well recharge adequately when purged?			
b	If dedicated sampling equipment installed, is it in good condition			
D	and specified in the approved groundwater plan for the facility?			
0	Does the well require redevelopment (low flow, turbid)?			
С	boes the well require redevelopment (low now, turbid)?			()
6 Based on	your professional judgement, is the well construction / location	1		
	appropriate to 1) achieve the objectives of the Groundwater	1		
	Monitoring Program and 2) comply with the applicable regulatory	1		
	requirements?	V		
	· · · · · · · · · · · · · · · · · · ·			
7 Corrective	actions as needed, by date:			

Site Name	Plant Hummond			
Permit Number		-0		
Well ID	CHIA-16	-		
∩ate, field conditions	gizina, 29 F Partly cloudy			m / n
1 Location/	dentification	yes	no	n/a
a	Is the well visible and accessible?	\checkmark		
b	Is the well properly identified with the correct well ID?	-7		
C	Is the well in a high traffic area and does the well require	<u> </u>		
C	protection from traffic?		\checkmark	
d	Is the drainage around the well acceptable? (no standing water,			
-	nor is well located in obvious drainage flow path)	V		
2 Protective				
а	Is the protective casing free from apparent damage and able to be secured?]		
b	Is the casing free of degradation or deterioration?	~		
с	Does the casing have a functioning weep hole?	1	·	
d	Is the annular space between casings clear of debris and water,			S
	or filled with pea gravel/sand?			
е	Is the well locked and is the lock in good condition?	1		
3 Surface p	ad			
a <u>Sunace p</u>	au Is the well pad in good condition (not cracked or broken)?	J		
b	Is the well pad sloped away from the protective casing?	*		
c	Is the well pad in complete contact with the protective casing?	<u> </u>		
d	Is the well pad in complete contact with the ground surface and			
G	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	~		
е	Is the pad surface clean (not covered with sediment or debris)?	$\overline{}$		
4 Internal ca		1		
a	Does the cap prevent entry of foreign material into the well?			<u> </u>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	1		
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	<u> </u>		
e	Is the depth of the well consistent with the original well log?	72		
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)	1		
	Groundwater Wells Only:			
a b	Does well recharge adequately when purged? If dedicated sampling equipment installed, is it in good condition			
D	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?			
U				
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	1		
	requirements?	N		
7 Corrective	actions as needed, by date:			

Groundwater Monitoring Well Integrity Form							
Olta Nama	plant Hammond						
Site Name Permit Number	Mast mon mone	-8					
Well ID	CWC-19	-					
Pate, field conditions		-8					
	<u>E1-1.571 Sommer</u>	ves	no	n/a			
1 Location/I	dentification	Ĩ	110	n, a			
a	Is the well visible and accessible?	J					
b	Is the well properly identified with the correct well ID?						
С	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,	1					
	nor is well located in obvious drainage flow path)	V	<u> </u>				
2 Protective	Casing						
a	Is the protective casing free from apparent damage and able to be	1					
	secured?						
b	Is the casing free of degradation or deterioration?	1					
С	Does the casing have a functioning weep hole?	1					
d	Is the annular space between casings clear of debris and water,						
	or filled with pea gravel/sand?	<i>v</i>					
е	Is the well locked and is the lock in good condition?	1					
3 <u>Surface p</u> a	ad						
a	Is the well pad in good condition (not cracked or broken)?	1					
b	Is the well pad sloped away from the protective casing?	5					
с	Is the well pad in complete contact with the protective casing?	1					
d	Is the well pad in complete contact with the ground surface and		C				
	stable? (not undermined by erosion, animal burrows, and does not	1-					
	move when stepped on)	~					
е	Is the pad surface clean (not covered with sediment or debris)?	\checkmark					
4 Internal ca	isina	,					
a	Does the cap prevent entry of foreign material into the well?	\checkmark					
b	Is the casing free of kinks or bends, or any obstructions from						
	foreign objects (such as bailers)?	\checkmark					
С	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?	- A					
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)	1					
	couplings in construction)	<u>~</u>					
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?						
С	Does the well require redevelopment (low flow, turbid)?						
6 Resed on	your professional judgement, is the well construction / location						
o Dased on	appropriate to 1) achieve the objectives of the Groundwater						
	Monitoring Program and 2) comply with the applicable regulatory	1					
	requirements?	1					
7 Corrective	actions as needed, by date:						

Field Technicia	an: Chaci I	2.550	Site/Locatio	m: Plan	Well Inspect	ion Items	ч	Inspection Date: 10/21/19
	Inspection			Pres	ent (Y/N)			
Well ID	Time	Lock	Locking Ca	p Bollards	Concrete Pad	Protective Casing	Vegetation	Comments regarding well condition
H GWK-109	0905	У	N	1	Y	4	Ý	
CLIVC-B	0925	У	Y	Ŷ	4	4	Ý	
HGWC-107	0A35	Ý	N	1	4	4	Y	
GWG-6	04 40	Y	4	Y	4	4	Y	
		Y	N	Y	У	Y	Y	
HGWC-105 GWC-4	0955	Y	У	У	Y	Y	4	
HGWK-103	1000	4	N	4	У	У	Y	
HG4 C-102	(005	Y	Y	P	Ч	Y	Ý	
1-1 GWX-101	1010	Y	N	Y	Y	ý	Ý	
GWC-19		Y	Y	У	У	У	Y	
HGWC-13	1	Ý	N	Y	Y	1	Y	
MW-12	1025	У	Ý	4	Y	y	Y	
HGWC-117	1040	Y	N	Y	У	4	4	
GWA-16	1045	Y	Y	4	4	Y	4	
1GWA-5	1050	1	N	У	Ч	Ý	Y	
NGWA-5		У		Y	Y	Ŷ	4	
GWA-15		4	4	Y	У	Y	J	
GWA-14	1125	Y	8	М	4	Y	7	
HGWA-113 HGWA-112		Y	N	Ŷ	4	У	7	

Groundwater	Monitoring	Well	Integrity	Form
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te Name	plant Hammond				
ermit Number		-			
ell ID	it GWA-IN	-			
ate, field conditions	10/21/19 6605 dardy	-			
		- yes	no	n/a	
1 Location/	Identification	2			
а	Is the well visible and accessible?	~			
b	Is the well properly identified with the correct well ID?	$\overline{}$			
С	Is the well in a high traffic area and does the well require			0 <u></u>	
,	protection from traffic?		5		
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	è			
	secured?	J			
b	Is the casing free of degradation or deterioration?	~			
С	Does the casing have a functioning weep hole?	$\overline{\checkmark}$			
d	Is the annular space between casings clear of debris and water,				
	or filled with pea gravel/sand?	\checkmark			
e	Is the well locked and is the lock in good condition?	1			
3 Surface p	ad	•			
a	ls the well pad in good condition (not cracked or broken)?	1			
b	Is the well pad sloped away from the protective casing?	<u> </u>			
C	Is the well pad in complete contact with the protective casing?	- <u>√</u>			
d	Is the well pad in complete contact with the ground surface and	<u> </u>			
	stable? (not undermined by erosion, animal burrows, and does not	- F:	,		eruston
	move when stepped on)				6.0314
е	Is the pad surface clean (not covered with sediment or debris)?	~			
1 Internel as					
4 <u>Internal ca</u> a	Does the cap prevent entry of foreign material into the well?	1			
b	Is the casing free of kinks or bends, or any obstructions from				
U	foreign objects (such as bailers)?	./			
с	Is the well properly vented for equilibration of air pressure?	<u> </u>			
d	Is the survey point clearly marked on the inner casing?				
е	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 a	Groundwater Wells Only: Does well recharge adequately when purged?	/			
	If dedicated sampling equipment installed, is it in good condition	<u> </u>			
b	and specified in the approved groundwater plan for the facility?	1			
с	Does the well require redevelopment (low flow, turbid)?				
Ū.					
	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:				
	מטוטרוס מס רובבעבע, שי עמופ.				

Site Name	Plant Hammond	_3		
Permit Number		-		
Well ID	11CaWA-112	-		
∩ate, field conditions	10/22/14; 61°F; SUNDY			
1 Location/I	dentification	yes	no	n/a
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	<u> </u>		
U U	protection from traffic?		. /	
d	Is the drainage around the well acceptable? (no standing water,			
ŭ	nor is well located in obvious drainage flow path)	1		
	a a a a a a a a a a a a a a a a a a a			
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be	ł		
	secured?	_√		
b	Is the casing free of degradation or deterioration?	_/		
С	Does the casing have a functioning weep hole?	<u> </u>		
d	Is the annular space between casings clear of debris and water,	1		
	or filled with pea gravel/sand?			ī
е	Is the well locked and is the lock in good condition?		-	
3 Surface pa	ad			
a <u>Sunace pa</u>	Is the well pad in good condition (not cracked or broken)?	J		
b	Is the well pad sloped away from the protective casing?			<u> </u>
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)			
	Is the pad surface clean (not covered with sediment or debris)?			
0		_		
4 Internal ca	sing			
	Does the cap prevent entry of foreign material into the well?	1		
	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?			
	Is the well properly vented for equilibration of air pressure?	1		
	Is the survey point clearly marked on the inner casing?	~		
	Is the depth of the well consistent with the original well log?	~		
	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	1		
	couplings in construction)	<u>v</u>		
5 Sampling:	Groundwater Wells Only:	242		
	Does well recharge adequately when purged?)		
	If dedicated sampling equipment installed, is it in good condition	1		
	and specified in the approved groundwater plan for the facility?	\checkmark	/	
	Does the well require redevelopment (low flow, turbid)?	<u> </u>		
			¥	
	our 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	1		
	requirements?		<u>.</u>	
7 Corrective	actions as needed, by date:			
	autono do noodod, by date.			

Site Name	Hammond			
Permit Number		-		
Well ID	HGWA-113	20		
Date, field conditions	10/22/2014 Dump / Clew	57 29		
	1/	yes	no	n/a
1 Location/I	dentification			
а	Is the well visible and accessible?	1		
b	Is the well properly identified with the correct well ID?	1		
С	Is the well in a high traffic area and does the well require	1		
	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			
ŭ	secured?	2		
b	Is the casing free of degradation or deterioration?	<u> </u>		
c	Does the casing have a functioning weep hole?			
d	Is the annular space between casings clear of debris and water,			
ŭ	or filled with pea gravel/sand?	. /		
е	Is the well locked and is the lock in good condition?	<u> </u>		
Ŭ	to the well looked and is the look in good condition?			
3 <u>Surface pa</u>	ad	/		
а	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?	<u> </u>		· · · · ·
С	Is the well pad in complete contact with the protective casing?	<u> </u>		· · · · ·
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)	1		
е	Is the pad surface clean (not covered with sediment or debris)?	J		
4 Internal ca	sing			
	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)?	,		
С	Is the well properly vented for equilibration of air pressure?	<u></u>		
d	Is the survey point clearly marked on the inner casing?	~		
	Is the depth of the well consistent with the original well log?	~		
	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)	1		
	Groundwater Wells Only:			
	Does well recharge adequately when purged?			
	If dedicated sampling equipment installed, is it in good condition	• -		
	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?			
6 Boood on -	rour profossional judgement is the well sensitive (lised)			
	your professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater	1		
	Monitoring Program and 2) comply with the applicable regulatory	/		
	requirements?	<u> </u>		
7 Corrective	actions as needed, by date:			

Name	Plant Hammond	_		
nit Number ID	11/ /	_		
	HGWC-101			
, field conditions	10/23/19 wony 520F	-		
1 Location/	Identification	yes	no	n/a
а	Is the well visible and accessible?	/		
b	Is the well properly identified with the correct well ID?	1		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?		1	
d	Is the drainage around the well acceptable? (no standing water,		3	
	nor is well located in obvious drainage flow path)		·	
2 Protective	e Casing			
а	Is the protective casing free from apparent damage and able to be			
	secured?	1		
b	Is the casing free of degradation or deterioration?			
С	Does the casing have a functioning weep hole?			
ď	Is the annular space between casings clear of debris and water,		-	
	or filled with pea gravel/sand?	/		
е	Is the well locked and is the lock in good condition?	1		
3 <u>Surface p</u>	ad			
a	Is the well pad in good condition (not cracked or broken)?	./		
b	Is the well pad sloped away from the protective casing?			
с	Is the well pad in complete contact with the protective casing?	~		
d	Is the well pad in complete contact with the ground surface and	<u> </u>		
	stable? (not undermined by erosion, animal burrows, and does no	ł		
	move when stepped on)	1		
е	Is the pad surface clean (not covered with sediment or debris)?	~		
4 Internal ca	asing			
a	Does the cap prevent entry of foreign material into the well?	1		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	1		
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	$\overline{}$		
е	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)	\leq		
5 Sampling:	Groundwater Wells Only:			
a	Does well recharge adequately when purged?	1		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?	\checkmark	1	
С	Does the well require redevelopment (low flow, turbid)?	+	\checkmark	
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	22		
	requirements?	/		
7 Corrective	actions as needed, by date:			
		_		
-				

Site Name Permit Number	Pland Hammond	-		
Well ID	16116-162	-		
	46WC-102 16(23(1) 39°F (1)=4			
ale, neid conditions	(6/23/19 34°F Clear	-	20	5/0
1 Location/I	dentification	yes	no	n/a
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			
Ū	protection from traffic?		. /	
d	Is the drainage around the well acceptable? (no standing water,			
4	nor is well located in obvious drainage flow path)	1		
				3
2 Protective				
а	Is the protective casing free from apparent damage and able to be	1		
	secured?	/		
b	Is the casing free of degradation or deterioration?	V		
С	Does the casing have a functioning weep hole?	1		
d	Is the annular space between casings clear of debris and water,	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
	or filled with pea gravel/sand?	~		
е	Is the well locked and is the lock in good condition?	/		
3 Surface pa	ad .			
	Is the well pad in good condition (not cracked or broken)?	1		
	Is the well pad sloped away from the protective casing?		·	
	Is the well pad in complete contact with the protective casing?			·
	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)	1		
	Is the pad surface clean (not covered with sediment or debris)?	~		
				·
4 Internal ca				
	Does the cap prevent entry of foreign material into the well?			
	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?			
	Is the well properly vented for equilibration of air pressure?	~		
	Is the survey point clearly marked on the inner casing?	<u> </u>		
	Is the depth of the well consistent with the original well log?			
	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	\checkmark		
1	couplings in construction)			
5 Sampling:	Groundwater Wells Only:	1		
	Does well recharge adequately when purged?	1		
	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			/
	Does the well require redevelopment (low flow, turbid)?		<	
				<u> </u>
	our 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	/		
I	requirements?	<u> </u>		
7 Corrective	actions as needed, by date:			

Site Name	Hammond			
Permit Number				
Vell ID	H6WC-103			
ate, field conditions	10-23-2019 Cold / Clea-	-		
1 Location/I	dentification	yes	no	n/a
a	Is the well visible and accessible?			
b	Is the well properly identified with the correct well ID?	- <u>-</u>		
С	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,		<u> </u>	
4	nor is well located in obvious drainage flow path)	\checkmark		
2 Protective	Casing			it. i
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?	<u> </u>		
d	Is the annular space between casings clear of debris and water,		<u> </u>	
u	or filled with pea gravel/sand?	1		
0		~		
e	Is the well locked and is the lock in good condition?		. 	
3 <u>Surface pa</u>				
а	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?	1		
С	Is the well pad in complete contact with the protective casing?	5		
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)	1		
е	Is the pad surface clean (not covered with sediment or debris)?	1		
4 Internal ca	sing			
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)?	./		
		<u> </u>		
C	Is the well properly vented for equilibration of air pressure?	<u> </u>		
d	Is the survey point clearly marked on the inner casing?	<u> </u>		
e f	Is the depth of the well consistent with the original well log?			
	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	1		
	couplings in construction)			
	Groundwater Wells Only:			
	Does well recharge adequately when purged?	1		
	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?	V		
	Does the well require redevelopment (low flow, turbid)?		<u></u>	
6 Based on v	our 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?	\checkmark		
			<u> </u>	
7 Corrective	actions as needed, by date:			
-				

lame	Harris			
it Number		_		
ID	t10w(-105	•		
field conditions	10-23-2019 Idd / Clan	-		,
1 Location/I	dentification	yes	no	n/a
a	Is the well visible and accessible?	-		
a 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			
Ŭ	protection from traffic?	./		
d	Is the drainage around the well acceptable? (no standing water,			
~	nor is well located in obvious drainage flow path)	1		
2 Desta stive				
2 Protective				
а	Is the protective casing free from apparent damage and able to be secured?	-		
b				
	Is the casing free of degradation or deterioration? Does the casing have a functioning weep hole?			
c d	Is the annular space between casings clear of debris and water,	<u> </u>		
u	or filled with pea gravel/sand?	1		
е	Is the well locked and is the lock in good condition?			
3 Surface pa		,		
a	Is the well pad in good condition (not cracked or broken)?		÷	
b	Is the well pad sloped away from the protective casing?			
C d	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)	1		
е	Is the pad surface clean (not covered with sediment or debris)?	<u>~</u>	1	
6	is the pad surface clean (not covered with sediment of depits)?	<u>v</u>		
4 Internal ca		/		
	Does the cap prevent entry of foreign material into the well?			
	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	V		
	Is the well properly vented for equilibration of air pressure?			
	Is the survey point clearly marked on the inner casing?	v		
	Is the depth of the well consistent with the original well log?	- <u>v</u>		
	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 <u>Sampling:</u>	Groundwater Wells Only:			
	Does well recharge adequately when purged?	<u> </u>		
	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?		<u>×</u>	
6 Based on y	our 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?	\checkmark		
7.0	actions as needed, by date:			

t Number D field conditions	HGWL-107	-				
field conditions						
	(c. 27. 2.10) (C. 1)					
4.1.2.2.0	10-22-2019 DAMP / WUM	-3				
L L OCOTION/L	dentification	yes	no	n/a		
	Is the well visible and accessible?	,				
a						
b	Is the well properly identified with the correct well ID?					
С	Is the well in a high traffic area and does the well require	,				
.1	protection from traffic?					
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	./				
	nor is well located in obvious drainage now pain)			5 I 		
2 Protective						
а	Is the protective casing free from apparent damage and able to be	1				
h	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?	_V				
е	Is the well locked and is the lock in good condition?					
3 Surface pa	ad	,				
а	Is the well pad in good condition (not cracked or broken)?	\checkmark				
b	Is the well pad sloped away from the protective casing?	V	<u>. </u>			
С	Is the well pad in complete contact with the protective casing?	V				
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)	J			1	e.b.r.
е	Is the pad surface clean (not covered with sediment or debris)?		V		from	Vogeta
4 Internal ca	sing				,	277
	Does the cap prevent entry of foreign material into the well?	./				
	Is the casing free of kinks or bends, or any obstructions from					
	foreign objects (such as bailers)?	/				
		$\underline{V}_{}$				
	Is the well properly vented for equilibration of air pressure?					
	Is the survey point clearly marked on the inner casing?	<u></u>				
	Is the depth of the well consistent with the original well log?					
	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)	\checkmark				
	<u>Groundwater Wells Only:</u> Does well recharge adequately when purged?	./				
	If dedicated sampling equipment installed, is it in good condition	1				
	and specified in the approved groundwater plan for the facility? Does the well require redevelopment (low flow, turbid)?					
0				<u></u>		
	our 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?					
				1.		
	actions as needed, by date:					

te Name	Hammond			
ermit Number	_	-		
ell ID	HGWC-109	-1		
ate, field conditions		÷.5		
		yes	no	n/a
1 Location/I	dentification	,		
а	Is the well visible and accessible?	\checkmark		
b	Is the well properly identified with the correct well ID?	5		/
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	J		
d	Is the drainage around the well acceptable? (no standing water,			3
	nor is well located in obvious drainage flow path)	\checkmark		
0				
2 Protective				
а	Is the protective casing free from apparent damage and able to be			
	secured?	_/		
b	Is the casing free of degradation or deterioration?	_/		
С	Does the casing have a functioning weep hole?	<u> </u>		
d	Is the annular space between casings clear of debris and water,	,		
	or filled with pea gravel/sand?	_/		-
е	Is the well locked and is the lock in good condition?			
3 <u>Surface p</u> a	ad			
a <u>Sunace p</u> a	ls the well pad in good condition (not cracked or broken)?	./		
b	- ,	<u> </u>		
	Is the well pad sloped away from the protective casing?	<u> </u>		
C d	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	1		
<u>^</u>	move when stepped on)			
е	Is the pad surface clean (not covered with sediment or debris)?			
4 Internal ca	ising			
а	Does the cap prevent entry of foreign material into the well?	./		
b	Is the casing free of kinks or bends, or any obstructions from	<u> </u>		
	foreign objects (such as bailers)?	./		
с	Is the well properly vented for equilibration of air pressure?		·······	
d	Is the survey point clearly marked on the inner casing?	~~		
е	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		
12 11 270	Groundwater Wells Only:	/		
a	Does well recharge adequately when purged?	<u> </u>		
b	If dedicated sampling equipment installed, is it in good condition	-		
	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?		\checkmark	
6 Record on a	rour professional independent is the second second of the state			
	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:			
	teres as noodod, by dato.			
0				

	Groundwater Monitoring Well Integrity Form			
Name	plant flammond			
nit Number		-		
ID	HGW (-117			
e, field conditions		-		
		- yes	no	n/a
1 Location/I		1		
а	Is the well visible and accessible?	1		
b	Is the well properly identified with the correct well ID?	V		
С	Is the well in a high traffic area and does the well require			
1	protection from traffic?			
d	Is the drainage around the well acceptable? (no standing water,	1		
	nor is well located in obvious drainage flow path)			
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be			
	secured?			
b	Is the casing free of degradation or deterioration?	~		
С	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?	<u> </u>		
е	Is the well locked and is the lock in good condition?	/		
3 Surface pa	ad			
a	Is the well pad in good condition (not cracked or broken)?	1		
b	Is the well pad sloped away from the protective casing?	1		
С	Is the well pad in complete contact with the protective casing?	1		
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)			
е	Is the pad surface clean (not covered with sediment or debris)?			
4 Internal ca	sing			
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	<u> </u>		
	foreign objects (such as bailers)?	\checkmark		
С	Is the well properly vented for equilibration of air pressure?	1/		
d	Is the survey point clearly marked on the inner casing?	$\overline{}$		· · · · · · · · · · · · · · · · · · ·
е	Is the depth of the well consistent with the original well log?	$\overline{\mathbf{v}}$		
	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	1		
	couplings in construction)			
5 Sampling:	Groundwater Wells Only:			
	Does well recharge adequately when purged?			
	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?	\checkmark		
С	Does the well require redevelopment (low flow, turbid)?	$\overline{}$	d.	· · · · · · · · · · · · · · · · · · ·
6 Passed are				
	our 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?	1		
7 Corrective	actions as needed, by date:			

Groundwater	Monitoring	Well	Integrity	Form

Site Name	Plant Hammond	-0		
⊃ermit Number Well ID				
	HGWC-118			
Pate, field conditions	10/22/19 LOOF SUNNY	-1		,
1 Location/L	dentification	yes	no	n/a
a	Is the well visible and accessible?	1		
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?		J	
d	Is the drainage around the well acceptable? (no standing water,			3 6
	nor is well located in obvious drainage flow path)	\checkmark		
0.0.4	^			
2 Protective				
а	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?	' 🗸		
е	Is the well locked and is the lock in good condition?	~	÷	-
2.0.1			(<u> </u>	
3 <u>Surface pa</u>		./		
a b	Is the well pad in good condition (not cracked or broken)?			
C	Is the well pad sloped away from the protective casing? Is the well pad in complete contact with the protective casing?			
d	Is the well pad in complete contact with the ground surface and			
u	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	V		
е	Is the pad surface clean (not covered with sediment or debris)?			
4 Internal ca				
	Does the cap prevent entry of foreign material into the well?			
	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	1		
	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	~		
	Is the depth of the well consistent with the original well log?)	
	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)	\checkmark		
5 Sampling	Groundwater Wells Only:			
	Does well recharge adequately when purged?	/		
	If dedicated sampling equipment installed, is it in good condition	<u> </u>		
	and specified in the approved groundwater plan for the facility?			
	Does the well require redevelopment (low flow, turbid)?	$\overline{\mathbf{\nabla}}$	56	
			(R)	
	our professional judgement, is the well construction / location		\bigcirc	
	appropriate to 1) achieve the objectives of the Groundwater	u.		
	Monitoring Program and 2) comply with the applicable regulatory requirements?			
		<u> </u>		
7 Corrective	actions as needed, by date:			

ite Name	Plant flammond				
ermit Number		-			
/ell ID	GWC-4				
ate, field conditions	10/21/17 63:4				
1 Location/	Identification	yes	no	n/a	
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	<u> </u>			
-	protection from traffic?		\checkmark		
d	s the drainage around the well acceptable? (no standing water,				
	nor is well located in obvious drainage flow path)	\checkmark			
2 Protective	e Casing				
a	Is the protective casing free from apparent damage and able to be	,			
	secured?	V			
b	Is the casing free of degradation or deterioration?	J			
С	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?	<u> </u>			
е	Is the well locked and is the lock in good condition?	\checkmark			
3 <u>Surface p</u>	ad				
а	Is the well pad in good condition (not cracked or broken)?	\checkmark			
b	Is the well pad sloped away from the protective casing?	V			
С	Is the well pad in complete contact with the protective casing?	J			
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)?	<u> </u>		<u> </u>	
4 Internal ca	asing				
а	Does the cap prevent entry of foreign material into the well?	<u> </u>			
b	Is the casing free of kinks or bends, or any obstructions from	/			
	foreign objects (such as bailers)?	<u> </u>			
c	Is the well properly vented for equilibration of air pressure?	V			
d	Is the survey point clearly marked on the inner casing?	_ <u><</u>		<u> </u>	
e	Is the depth of the well consistent with the original well log?	<u> </u>		:	
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)	\checkmark			
5 Sampling	Groundwater Wells Only:				
a <u>Samping.</u>	Does well recharge adequately when purged?				WL
b	If dedicated sampling equipment installed, is it in good condition				nly
L.	and specified in the approved groundwater plan for the facility?				Ĵ
С	Does the well require redevelopment (low flow, turbid)?				
6 Based on	your professional judgement, is the well construction / location				
- Buoba on	appropriate to 1) achieve the objectives of the Groundwater				
	Monitoring Program and 2) comply with the applicable regulatory	/			
	requirements?				
7 Correction	actions as needed, by detail				
/ Corrective	actions as needed, by date:				

ite Name	Plant Hammond				
ermit Number	New ATR				
/ell ID	Cowers				
ate, field conditions	C3°F; Cloudy 10/21/19	-			
1 Location/	Identification	yes	no	n/a	
a	Is the well visible and accessible?				
b	Is the well properly identified with the correct well ID?	1			
С	Is the well in a high traffic area and does the well require				
	protection from traffic?		1		
d	Is the drainage around the well acceptable? (no standing water,		x		
	nor is well located in obvious drainage flow path)	<u> </u>			
2 Protective	Casing				
а	Is the protective casing free from apparent damage and able to be	100.0			
	secured?	/			
b	Is the casing free of degradation or deterioration?	1	-		
С	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?	\checkmark			
е	Is the well locked and is the lock in good condition?	~	_		
3 <u>Surface p</u>	ad				
а	Is the well pad in good condition (not cracked or broken)?	\checkmark			
b	Is the well pad sloped away from the protective casing?	V			
С	Is the well pad in complete contact with the protective casing?	$\overline{}$			
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)	V			
е	Is the pad surface clean (not covered with sediment or debris)?		<u> </u>	=	
4 Internal ca	asing				
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)?	V			
С	Is the well properly vented for equilibration of air pressure?	$\overline{}$			
d	Is the survey point clearly marked on the inner casing?	W			
е	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		<u> </u>		
	or can it be taken apart by hand due to lack of grout or use of slip	/			
	couplings in construction)	<u> </u>			
5 Sampling:	Groundwater Wells Only:				init
а	Does well recharge adequately when purged?				lu
b	If dedicated sampling equipment installed, is it in good condition				6100
	and specified in the approved groundwater plan for the facility?				,
С	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?			3	
7 Corrective	actions as needed, by date:				
, concellive	actions as needed, by date.				

ame t Number	Mant Haumand	-			
D					
	C.WA-94				
field conditions	10121/19 Gier eloudy			,	
1 Location/Ic	dentification	yes	no	n/a	
a	Is the well visible and accessible?	./			
b	Is the well properly identified with the correct well ID?	<u> </u>			
c	Is the well in a high traffic area and does the well require				
0	protection from traffic?		1		
d	Is the drainage around the well acceptable? (no standing water,				
G	nor is well located in obvious drainage flow path)				
2 Protective					
а	Is the protective casing free from apparent damage and able to be	,			
	secured?	-			
	Is the casing free of degradation or deterioration?				
	Does the casing have a functioning weep hole?	1			
	Is the annular space between casings clear of debris and water,	1			
	or filled with pea gravel/sand?				
е	Is the well locked and is the lock in good condition?	~			
3 Surface pa	d				
	Is the well pad in good condition (not cracked or broken)?	1			
	Is the well pad sloped away from the protective casing?	1			
	Is the well pad in complete contact with the protective casing?]]	
	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)				
	is the pad surface clean (not covered with sediment or debris)?	1			
A Texaster of the	Ann				
4 Internal ca		1			
	Does the cap prevent entry of foreign material into the well?				
	Is the casing free of kinks or bends, or any obstructions from	V			
	foreign objects (such as bailers)?				
	Is the well properly vented for equilibration of air pressure?	~			
	Is the survey point clearly marked on the inner casing?	<u> </u>			
	Is the depth of the well consistent with the original well log? Is the casing stable? (or does the pvc move easily when touched	$\underline{\nu}$. <u> </u>	
	or can it be taken apart by hand due to lack of grout or use of slip	1			
	couplings in construction)	/			
	, a				
	Groundwater Wells Only:				4
	Does well recharge adequately when purged?				\mathcal{N}
	If dedicated sampling equipment installed, is it in good condition				(0)
	and specified in the approved groundwater plan for the facility?				0
С	Does the well require redevelopment (low flow, turbid)?				
6 Based on v	our professional judgement, is the well construction / location				
	appropriate to 1) achieve the objectives of the Groundwater	1			
	Monitoring Program and 2) comply with the applicable regulatory	/			
	requirements?	V			
·	·				
	actions as needed, by date:				

Site Name	Plant Hammond AP-4	_			
Permit Number		-			
Well ID	C143C-8	_			
Tate, field conditions	63°F; cloudy 16/21/19	-			
1 Location/I	Identification	yes	no	n/a	
a	Is the well visible and accessible?				
b	Is the well properly identified with the correct well ID?	\checkmark			
С	Is the well in a high traffic area and does the well require		1		
1	protection from traffic?		~		
d	Is the drainage around the well acceptable? (no standing water,	1			
	nor is well located in obvious drainage flow path)	<u> </u>			
2 Protective	Casing				
a	Is the protective casing free from apparent damage and able to be	,			
	secured?	\checkmark			
b	Is the casing free of degradation or deterioration?	1/			
С	Does the casing have a functioning weep hole?			<u> </u>	
d	Is the annular space between casings clear of debris and water,				
	or filled with pea gravel/sand?	J			
е	Is the well locked and is the lock in good condition?	$\overline{\mathbf{J}}$			
	-				
3 Surface p		,			
a	Is the well pad in good condition (not cracked or broken)?	<u> </u>			
b	Is the well pad sloped away from the protective casing?	<u> </u>			
C	Is the well pad in complete contact with the protective casing?	\sim			
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)	<u> </u>			
е	Is the pad surface clean (not covered with sediment or debris)?	$\overline{}$		<u> </u>	
4 Internal ca	asing	/			
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)?	\checkmark			
С	Is the well properly vented for equilibration of air pressure?				
d	Is the survey point clearly marked on the inner casing?	$\overline{}$	31		
е	Is the depth of the well consistent with the original well log?	$\overline{}$			
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	\mathcal{I}			
	couplings in construction)				
5 Sampling	Groundwater Wells Only:				
a a	Does well recharge adequately when purged?				. \
b	If dedicated sampling equipment installed, is it in good condition		<u> </u>		WL
-	and specified in the approved groundwater plan for the facility?				only
С	Does the well require redevelopment (low flow, turbid)?				J
6 Deceder					
o 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?	1			
	requirementer.		-		
7 Corrective	actions as needed, by date:				

Site Name	Plant Nammond				
Permit Number		-			
Well ID	GWA-15				
nate, field conditions	10/21/19 C306 Clouky	-		,	
1 Location/	dentification	yes	no	n/a	
a	Is the well visible and accessible?	\sim			
b	Is the well properly identified with the correct well ID?	V			
C	Is the well in a high traffic area and does the well require				
	protection from traffic?		1		
d	Is the drainage around the well acceptable? (no standing water,				
	nor is well located in obvious drainage flow path)	\sim			
2 Protective	Casing				
a	Is the protective casing free from apparent damage and able to be	1			
	secured?	V			
b	Is the casing free of degradation or deterioration?	1			
С	Does the casing have a functioning weep hole?	J.			
d	Is the annular space between casings clear of debris and water,		<u> </u>		
	or filled with pea gravel/sand?	V			
е	Is the well locked and is the lock in good condition?	$\overline{\checkmark}$			
3 <u>Surface p</u>	ad	,			
a	Is the well pad in good condition (not cracked or broken)?				
b	Is the well pad sloped away from the protective casing?	5			
с	Is the well pad in complete contact with the protective casing?	1			
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)	V			
е	Is the pad surface clean (not covered with sediment or debris)?				
4 Internal ca	asing				
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)?				
С	Is the well properly vented for equilibration of air pressure?	1			
d	Is the survey point clearly marked on the inner casing?	5			
е	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:				
а	Does well recharge adequately when purged?				11.11
b	If dedicated sampling equipment installed, is it in good condition				000
	and specified in the approved groundwater plan for the facility?				only
С	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	1			
	requirements?	\sim			
7 Correctivo	actions as needed, by date:				
/ Corrective	מכווטרוס מס חופרעבע, שץ עמופ.				
•		_	_		

	Groundwater Monitoring Well Integrity Form				
the Marian	Plant Hannong				
ite Name ermit Number	I MAN MARYDINI				
/ell ID	GWA-16	5			
ate, field conditions					
		yes	no	n/a	
1 Location/I	dentification	, ,			
а	Is the well visible and accessible?	V			
b	Is the well properly identified with the correct well ID?	$\overline{}$			
С	Is the well in a high traffic area and does the well require	1			
	protection from traffic?	SF-			
d	Is the drainage around the well acceptable? (no standing water,	./			
	nor is well located in obvious drainage flow path)	<u> </u>			
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?	$\overline{\mathcal{T}}$			
С	Does the casing have a functioning weep hole?				
d	Is the annular space between casings clear of debris and water,	1			
	or filled with pea gravel/sand?	—			
е	Is the well locked and is the lock in good condition?	$\overline{}$			
3 Surface pa	ad				
a	Is the well pad in good condition (not cracked or broken)?	5			
b	Is the well pad sloped away from the protective casing?	$\overline{\mathcal{T}}$			
С	Is the well pad in complete contact with the protective casing?	1		2 2	
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)				
е	Is the pad surface clean (not covered with sediment or debris)?	$\underline{\sim}$			
4 Internal ca	ising				
а	Does the cap prevent entry of foreign material into the well?	J			
b	Is the casing free of kinks or bends, or any obstructions from	1			
	foreign objects (such as bailers)?	~			
С	Is the well properly vented for equilibration of air pressure?	<u> </u>			
d	Is the survey point clearly marked on the inner casing?	\sim			
e	Is the depth of the well consistent with the original well log?	\sim			
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)	J			
		<u> </u>			
5 <u>Sampling:</u>	Groundwater Wells Only:				
a	Does well recharge adequately when purged?			<u> </u>	WL
b	If dedicated sampling equipment installed, is it in good condition				
-	and specified in the approved groundwater plan for the facility?				only
С	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	1			
	requirements?	_			
7 Compating	notions as needed, by detail				
/ Corrective	actions as needed, by date:				
S					

e Name	Plant Nammond	24			
rmit Number					
ell ID	GINC-19				
te, field conditions	10/21/19 63°F cloury				
1	ele settilizenti ese	yes	no	n/a	
	dentification	5			
a	Is the well visible and accessible?				
b	Is the well properly identified with the correct well ID?				
С	Is the well in a high traffic area and does the well require		V		
	protection from traffic?				
d	Is the drainage around the well acceptable? (no standing water,	./			
	nor is well located in obvious drainage flow path)	<u> </u>			
2 Protective					
а	Is the protective casing free from apparent damage and able to be				
	secured?	\checkmark			
b	Is the casing free of degradation or deterioration?	_V_			
С	Does the casing have a functioning weep hole?		1		
d	Is the annular space between casings clear of debris and water,	1			
	or filled with pea gravel/sand?				
e	Is the well locked and is the lock in good condition?				
3 Surface p	ad				
a	Is the well pad in good condition (not cracked or broken)?				
b	Is the well pad sloped away from the protective casing?	V			
С	Is the well pad in complete contact with the protective casing?	$\overline{}$			
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)	V			
е	Is the pad surface clean (not covered with sediment or debris)?				
4 Internal ca	acing				
a	Does the cap prevent entry of foreign material into the well?	V			
b	Is the casing free of kinks or bends, or any obstructions from				
5	foreign objects (such as bailers)?				
С	Is the well properly vented for equilibration of air pressure?	$ \rightarrow $			
d	Is the survey point clearly marked on the inner casing?	$\overline{}$			
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)	<u> </u>			
5 Sampling	Groundwater Wells Only:				
a <u>Bamping.</u>	Does well recharge adequately when purged?				1611
b	If dedicated sampling equipment installed, is it in good condition		-		V0 C
5	and specified in the approved groundwater plan for the facility?				only
С	Does the well require redevelopment (low flow, turbid)?)
6 Deced are	using methodianal independent is the scall construction (is satisfy				
o 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	7			
	requirements?	\checkmark			
7 Corrective	e actions as needed, by date:				

APPENDIX B

Laboratory Analytical and Field Sampling Reports

APPENDIX B1

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 12, 2020

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

RE: Project: Plant Hammond AP Pace Project No.: 2622317

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 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,

Kein Hung

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 Pace Project No.: 2622317

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



SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2622317

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622317001	HGWA-111	Water	08/21/19 16:15	08/22/19 15:38
2622317002	HGWA-112	Water	08/21/19 17:20	08/22/19 15:38
2622317003	HGWA-113	Water	08/21/19 17:20	08/22/19 15:38



SAMPLE ANALYTE COUNT

Project:Plant Hammond APPace Project No.:2622317

				Analytes
Lab ID	Sample ID	Method	Analysts	Reported
2622317001	HGWA-111	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622317002	HGWA-112	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622317003	HGWA-113	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1



ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2622317

Sample: HGWA-111	Lab ID:	2622317001	Collecte	ed: 08/21/19	9 16:15	Received: 08/	22/19 15:38 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/23/19 14:12	08/26/19 20:31	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/23/19 14:12	08/26/19 20:31	7440-38-2	
Barium	0.029	mg/L	0.010	0.00049	1	08/23/19 14:12	08/26/19 20:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:12	08/26/19 20:31	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:12	08/26/19 20:31	7440-43-9	
Chromium	0.00061J	mg/L	0.010	0.00039	1	08/23/19 14:12	08/26/19 20:31	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/23/19 14:12	08/26/19 20:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:12	08/26/19 20:31	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00078	1	08/23/19 14:12	08/26/19 20:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:12	08/26/19 20:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:12	08/26/19 20:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:12	08/26/19 20:31	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:51	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	0.048J	mg/L	0.30	0.029	1		08/30/19 04:12	16984-48-8	



ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2622317

Sample: HGWA-112	Lab ID:	2622317002	Collecte	ed: 08/21/19	9 17:20	Received: 08/	22/19 15:38 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/23/19 14:12	08/26/19 20:36	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/23/19 14:12	08/26/19 20:36	7440-38-2	
Barium	0.027	mg/L	0.010	0.00049	1	08/23/19 14:12	08/26/19 20:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:12	08/26/19 20:36	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:12	08/26/19 20:36	7440-43-9	
Chromium	0.0039J	mg/L	0.010	0.00039	1	08/23/19 14:12	08/26/19 20:36	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/23/19 14:12	08/26/19 20:36	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:12	08/26/19 20:36	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/23/19 14:12	08/26/19 20:36	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:12	08/26/19 20:36	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:12	08/26/19 20:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:12	08/26/19 20:36	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:53	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/30/19 04:57	16984-48-8	



ANALYTICAL RESULTS

Project: Plant Hammond AP

Pace Project No.: 2622317

Sample: HGWA-113	Lab ID:	2622317003	Collecte	ed: 08/21/19	9 17:20	Received: 08/	22/19 15:38 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/23/19 14:12	08/26/19 20:42	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/23/19 14:12	08/26/19 20:42	7440-38-2	
Barium	0.027	mg/L	0.010	0.00049	1	08/23/19 14:12	08/26/19 20:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:12	08/26/19 20:42	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:12	08/26/19 20:42	7440-43-9	
Chromium	0.0022J	mg/L	0.010	0.00039	1	08/23/19 14:12	08/26/19 20:42	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/23/19 14:12	08/26/19 20:42	7440-48-4	
Lead	0.000071J	mg/L	0.0050	0.000046	1	08/23/19 14:12	08/26/19 20:42	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00078	1	08/23/19 14:12	08/26/19 20:42	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:12	08/26/19 20:42	7439-98-7	
Selenium	0.0025J	mg/L	0.010	0.0013	1	08/23/19 14:12	08/26/19 20:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:12	08/26/19 20:42	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:56	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	0.11J	mg/L	0.30	0.029	1		08/30/19 05:20	16984-48-8	



Project:	Plant Hammond AP											
Pace Project No.:	2622317											
QC Batch:	34231		Analy	sis Metho	d: I	EPA 7470A						
QC Batch Method:	EPA 7470A		Analy	sis Descri	ption:	7470 Mercu	ıry					
Associated Lab San	nples: 262231700	1, 2622317002,	262231700	3								
METHOD BLANK:	154028			Matrix: W	/ater							
Associated Lab San	nples: 262231700	1, 2622317002,	262231700	3								
			Blan	k	Reporting							
Paran	neter	Units	Resi	ult	Limit	MD	L	Analyzec	d Qi	ualifiers		
Mercury		mg/L		ND	0.0005	0 0.	00014	08/27/19 10	:49			
LABORATORY COM	NTROL SAMPLE:	154029										
			Spike	LC	S	LCS	%	Rec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Li	mits	Qualifiers			
Mercury		mg/L	0.002	5	0.0025	10	2	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUPL	ICATE: 1540	30		154031							
			MS	MSD								
		2622246001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0026	0.0025	10	03 99	9 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.



Project: Plant Hammond AP

Pace Project No.: 2622317

QC Batch:	34179	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Sam	ples: 2622317001, 2622317002, 262	22317003	
Associated Lab Sam		22317003 Matrix: Water	
	153793	Matrix: Water	

Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00075J	0.0030	0.00027	08/26/19 19:11	
Arsenic	mg/L	ND	0.0050	0.00035	08/26/19 19:11	
Barium	mg/L	ND	0.010	0.00049	08/26/19 19:11	
Beryllium	mg/L	ND	0.0030	0.000074	08/26/19 19:11	
Cadmium	mg/L	ND	0.0025	0.00011	08/26/19 19:11	
Chromium	mg/L	ND	0.010	0.00039	08/26/19 19:11	
Cobalt	mg/L	ND	0.0050	0.00030	08/26/19 19:11	
Lead	mg/L	ND	0.0050	0.000046	08/26/19 19:11	
Lithium	mg/L	ND	0.030	0.00078	08/26/19 19:11	
Molybdenum	mg/L	ND	0.010	0.00095	08/26/19 19:11	
Selenium	mg/L	ND	0.010	0.0013	08/26/19 19:11	
Thallium	mg/L	ND	0.0010	0.000052	08/26/19 19:11	

LABORATORY CONTROL SAMPLE: 153794

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.092	92	80-120	
rsenic	mg/L	0.1	0.10	103	80-120	
rium	mg/L	0.1	0.099	99	80-120	
eryllium	mg/L	0.1	0.10	105	80-120	
admium	mg/L	0.1	0.10	103	80-120	
hromium	mg/L	0.1	0.081	81	80-120	
balt	mg/L	0.1	0.10	100	80-120	
ad	mg/L	0.1	0.086	86	80-120	
nium	mg/L	0.1	0.10	105	80-120	
lybdenum	mg/L	0.1	0.091	91	80-120	
elenium	mg/L	0.1	0.10	103	80-120	
allium	mg/L	0.1	0.093	93	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1537	95		153796							
Parameter	Units	2622267002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00039J	0.1	0.1	0.11	0.10	108	103	75-125	5	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	101	99	75-125	2	20	
Barium	mg/L	0.017	0.1	0.1	0.13	0.12	108	101	75-125	5	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	101	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

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Project: Plant Hammond AP Pace Project No.: 2622317

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1537	95 MS	MSD	153796							
Parameter	Units	2622267002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	0.00073J	0.1	0.1	0.10	0.10	99	100	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	0	20	
Lead	mg/L	0.000064J	0.1	0.1	0.095	0.097	94	97	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.097	101	97	75-125	5	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.099	95	98	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.



•	Plant Hammond AP 2622317											
QC Batch:	34532		Analy	vsis Method	d:	EPA 300.0						
QC Batch Method:	EPA 300.0			sis Descri		300.0 IC Ani	ions					
Associated Lab Samp		1, 2622317002,										
METHOD BLANK:	155480			Matrix: W	ater							
Associated Lab Samp	oles: 262231700	1, 2622317002,	262231700	3								
			Blar	nk l	Reporting							
Parame	eter	Units	Res	ult	Limit	MDI	_	Analyzed	Qı	ualifiers		
Fluoride		mg/L		ND	0.3	0	0.029 0	8/29/19 22:	10			
LABORATORY CON	TROL SAMPLE:	155481	Spike	LC	S	LCS	% F	lec				
Parame	eter	Units	Conc.	Res	sult	% Rec	Lim	its C	Qualifiers			
Fluoride		mg/L	1	0	9.4	94	4	90-110				
MATRIX SPIKE & MA	ATRIX SPIKE DUPL	ICATE: 1554	82		155483							
			MS	MSD								
Parameter	Units	2622265001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	10	10	9.3	9.2	93	92	90-110	0	15	
MATRIX SPIKE SAM	PLE:	155490										
_			-	267002	Spike	MS		MS	% Rec		_	
Parame	eter	Units	Re	sult	Conc.	Result	C	6 Rec	Limits		Qualif	iers
Fluoride		mg/L		ND	10		8.5	85	90	-110 M	1	

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



QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2622317

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP Pace Project No.: 2622317

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622317001	HGWA-111	EPA 3005A	34179	EPA 6020B	34192
2622317002	HGWA-112	EPA 3005A	34179	EPA 6020B	34192
2622317003	HGWA-113	EPA 3005A	34179	EPA 6020B	34192
2622317001	HGWA-111	EPA 7470A	34231	EPA 7470A	34309
2622317002	HGWA-112	EPA 7470A	34231	EPA 7470A	34309
2622317003	HGWA-113	EPA 7470A	34231	EPA 7470A	34309
2622317001	HGWA-111	EPA 300.0	34532		
2622317002	HGWA-112	EPA 300.0	34532		
2622317003	HGWA-113	EPA 300.0	34532		

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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Section C	Involce Information: Attention	2	Address:	Pace Quote:	Pace Project Manager:	Pace Profile #: 32		Prese		HCI HAO3 H52O4 Rublesetved	4 1 3	4 3									$\frac{1400}{}$	26.55 60	10:49	١Ń	<u>r hed C. Ob</u>	· `
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								LECTED	END	DATE		814M 1720										an 8/2/19	L.		PRINT NAME AND SIGNATINE	GNATURE OF SAMPLER
	iject Information: Inii: Abraham / Lauran Battu			CS10382775	Hammond AP			COLL	START	DATE TIME		2/21/11 1700)										¶	> Klaw Ger	Thread a second	ALTER SALING	03
	± Inform	Geosyntac		14 N	Plant	1851		_)=) BARD=D)	SAMPLE TYPE	0	9							\downarrow			كمنك	M A	\neg		
Section B	Regulted Project Information: Report To: Init. Abraham J 1			Inchase Order	oject Name:	Project #: GW6581		CODE	M	客名 P Ta A A A A A A A A A A A A A A A A A A A	日							11-115	$\left \right $		649	20	le la			
<i>เ</i> ภั				þ		- <u>77</u> Pn		MATRUX	Drinking Water Water Waste Water Product Social Octo	Wriga Ai Other Tissue	GWA-III	ZH-HMOH &						A Cor	E		Se T					
	Required Client Information: Commany Cermia Prover - Coal Combustion Residuate		Atlanta, GA 30339	000	x	Requested Due Date: S+ a not and 1 +			SAMPLE ID	One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique	TH MIN-WINT	416-WA-HHCD									Mentalist the SD As Ba Be Cd Cr Co Pa 11 No Se 1	what the "A I "way "you have have have here itse				
Section A	Required Company:	Address:			Phone:	Requester	ľ			# WƏTI			E.	2	9	C				0	• Metals list				Page	: 14 (

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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Actes A Required Client Information: Comparing Georgia Power - Coal Combustion Residuals Actes : 3490 Marer Road Automa Gao 3033 Endi: jabraham@southermco.com Phore: (304)506-7733 Fax Phore: (304)506-7733 Fax Phore: (304)506-7733 Fax Phore: (304)506-7733 Fax Phore: (304)506-7733 Fax Phore: (304)506-7733 Fax Phore: (304)506-773 Phore: (304)506-774 Phore: (304)506-774 Pho	t Information: Georgia Power - Coal Combustion Residuals 2480 Marer Road 2480 Marer Road	Copy To: Geosyntec	Durchasa Qirder #- c.ret.000335	<u>Subtrition Project Names over s. SUS10382/15 Protect Under:</u> 7239 Force Under: Plant Hammond AP Pace Project Manager: betsy.modamet@pacetabs.com
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S	ample Condition	Upon Receipt	
Pace Analytical Client Nam	ne: GAPO	were	Project #
Courier: Fed Ex UPS USPS C Tracking #: Custody Seal on Cooler/Box Present:ye			WO#: 2622317 PM: BM Due Date: 08/29/19 CLIENT: GAPower-CCR
Packing Material: Bubble Wrap Bub	_		CLIENT: GHROWE, -CON
Thermometer Used 8.3	Type of Ice: Wet		Samples on ice, cooling process has begun
Cooler Temperature <u>3.2</u> Temp should be above freezing to 6°C	-	is Frozen: Yes No Comments:	Date and Initials of person examining contents: 8/22/19
Chain of Custody Present:		1.	
Chain of Custody Filled Out:		2.	
Chain of Custody Relinquished:		3.	
Sampler Name & Signature on COC:		4.	
Samples Arrived within Hold Time:		5.	
Short Hold Time Analysis (<72hr):		6.	
Rush Turn Around Time Requested:		7.	
Sufficient Volume:	PYes DNO DN/A	8.	
Correct Containers Used:		9.	
-Pace Containers Used:	PYes No N/A		
Containers Intact:		10.	
Filtered volume received for Dissolved tests	OYes ONo DHATA	111.	
Sample Labels match COC:	"Dites DNO DN/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u> </u>		
All containers needing preservation have been checked.	-2793 DNO DN/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	¹ →EYes □No □N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes Land	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:			
Headspace in VOA Vials (>6mm):		15.	
Trip Blank Present:		16.	
Trip Blank Custody Seals Present			1
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:			Field Data Required? Y / N
Person Contacted: Comments/ Resolution:		/Time:	
		······································	· · · · · · · · · · · · · · · · · · ·
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Project Manager Review:			Date:

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



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

September 23, 2019

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

RE: Project: Plant Hammond AP Pace Project No.: 2622318

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 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,

Batery Mr Damil

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.: 2622318

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



SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2622318

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622318001	HGWA-111	Water	08/21/19 16:15	08/22/19 15:38
2622318002	HGWA-112	Water	08/21/19 17:20	08/22/19 15:38
2622318003	HGWA-113	Water	08/21/19 17:20	08/22/19 15:38



SAMPLE ANALYTE COUNT

Project: Plant Hammond AP Pace Project No.: 2622318

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622318001		EPA 9315	LAL	 1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622318002	HGWA-112	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622318003	HGWA-113	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622318

Sample: HGWA-111 PWS:	Lab ID: 26223180 Site ID:	Collected: 08/21/19 16:15 Sample Type:	Received:	08/22/19 15:38	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.492 ± 0.222 (0.223) C:92% T:NA	pCi/L	09/09/19 08:48	3 13982-63-3	
Radium-228		0.0607 ± 0.403 (0.923) C:67% T:74%	pCi/L	09/19/19 12:09	9 15262-20-1	
Total Radium	Total Radium Calculation	0.553 ± 0.625 (1.15)	pCi/L	09/20/19 12:23	3 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622318

Sample: HGWA-112 PWS:	Lab ID: 26223180 Site ID:	Collected: 08/21/19 17:20 Sample Type:	Received:	08/22/19 15:38	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.417 ± 0.244 (0.395) C:91% T:NA	pCi/L	09/09/19 08:48	3 13982-63-3	
Radium-228	EPA 9320	0.0971 ± 0.572 (1.30) C:54% T:78%	pCi/L	09/19/19 12:09	9 15262-20-1	
Total Radium	Total Radium Calculation	0.514 ± 0.816 (1.70)	pCi/L	09/20/19 12:23	3 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622318

Sample: HGWA-113 PWS:	Lab ID: 26223180 Site ID:	Collected: 08/21/19 17:20 Sample Type:	Received:	08/22/19 15:38	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.241 ± 0.188 (0.324) C:86% T:NA	pCi/L	09/09/19 08:48	3 13982-63-3	
Radium-228	EPA 9320	0.251 ± 0.437 (0.955) C:71% T:71%	pCi/L	09/19/19 12:09	9 15262-20-1	
Total Radium	Total Radium Calculation	0.492 ± 0.625 (1.28)	pCi/L	09/20/19 12:23	3 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond A	νP				
Pace Project No.:	2622318					
QC Batch:	358895		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 228		
Associated Lab Sa	mples: 26223180	01, 262231800	2, 2622318003			
METHOD BLANK:	1742554		Matrix: Water			
Associated Lab Sa	mples: 26223180	01, 262231800	2, 2622318003			
Para	meter	Act :	± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.167 ± 0.291	(0.635) C:73% T:86%	pCi/L	09/19/19 12:11	

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



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond /	٩P				
Pace Project No.:	2622318					
QC Batch:	359801		Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315		Analysis Description:	9315 Total Radium	I	
Associated Lab Sa	mples: 2622318	001, 262231800	2, 2622318003			
METHOD BLANK:	1746802		Matrix: Water			
Associated Lab Sa	mples: 2622318	001, 262231800	2, 2622318003			
Para	meter	Act -	LUnc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.563 ± 0.229	(0.205) C:97% T:NA	pCi/L	09/09/19 09:06	

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.



QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2622318

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP Pace Project No.: 2622318

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622318001	HGWA-111	EPA 9315	359801		
2622318002	HGWA-112	EPA 9315	359801		
2622318003	HGWA-113	EPA 9315	359801		
2622318001	HGWA-111	EPA 9320	358895		
2622318002	HGWA-112	EPA 9320	358895		
2622318003	HGWA-113	EPA 9320	358895		
2622318001	HGWA-111	Total Radium Calculation	362430		
2622318002	HGWA-112	Total Radium Calculation	362430		
2622318003	HGWA-113	Total Radium Calculation	362430		

Analytical Request Document	N. DOCUMENT. All relevant fields must be completed accurately.
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	scsinvoices@southemco.com				al@bac	Berling G		2		SOSVIDIA	~	<u> ></u>	<u> </u>		1	_				· .]			Acception Brit Almuki (M)	Lew 1	lec.	0 2		
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Section C Invoice Information	Attention:	Company Name	Address:	Pace Quote:	Pace Project Manager	Pace Profile #:				PaviasaiquU	{	-				+-+							and the	0051	5.5	10:49		
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Projec				Oder		3	\mathbf{F}			MATRIX CODE	13	IT Z		+		+			F	\uparrow				રી	হী	No.		
Section B Required Project Information:	eport To	Copy To:		Purchase Order #:	Diect N	nject #:		CODE	928° 49	AN 10 21		ZII- HMOH							B							-	-	
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k Section A Benutred Cilent Information:	Contrais Dever - Coal Contrasting Residuals	2480 Maner Rood	Atlanta, GA 30339	Osout	06-7235	Requested Due Date: S+ A NO WY			SAMPLE ID	One Character per box. (A-Z, 0-9 /, -) Sample (ds must be unique	1				1								Neaugonie	· Merais list He. Sh. Al. Ba. Be. Cd. Cr. Co. Pb. Li. Mo. Se. Tl				
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Section A Remined		Address:		Email	Phone:	Reque				ILEW #												6		1			F	Page

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.	5					acelabs.com, [See 201] [Se	GA	2 Z Z	9	App. IV Metals Fluoride by 300 Redium 226/22:	2					MO#:2622318	PN: BM Due Date: 09/20/19	CLIENT: GRPower-CCR	20:45	P. 52 9	11 222191538 317 2 2 2	S DATE Signed: 06/21/19	
CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be complete	Section C Involve Information:	tiention: scsinvoices@conthemco.com	Company Name:	Address:		١	Pace Profile #: 327.4.2	Preservatives		Other Other Methanol Macasso3 HCI HCI HCI HCI HCO HSO4 HSO4	11 3								letter the Lan /1	. 3	NZalanan	Noelia Mu Nalia Munn	•
CHAIN-OF-CI	Section B Recuired Project Information:	turen Pottv	Geosyntec			lant Hammond AP	6581	COLECTED	오 윤 가 돛 옷 및 (6=6RAB C= 51AA1 51AA1 51AA1 51AA1 51AA1 51AA1 51AA1 51AA1 51AA1 51AA1 51AA1 51A 51A	성 운 값 중 중 중 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전	We 6 41/14 1658 241/14 1720 2 14				HJM WELL	2			Acro 8/21/19	. HI 5/21/19		SAMPLERNAME AND SAVALINE PRINT NAME OF SAMPLER: SIGNATURE OF SAMPLER:	
Patter Analytical	Soction - Soction - Resulted Client information: Resulted Client information:	- Coal Combustion Residuals	2480 Maner Road		Email: jabraham@southernco.com		161	MATRIX	SAMPLE ID Season	One Charactor per box. (A.Z, 0-9 /, -) Sumple ids must be unique	M HGWA-113								- Metada inti Hig. So. As. Ba. Bo. Cd. Cr. Co. Po. Li. Mo. Se. Tl				

San	nple Condition	Upon Receipt		
Face Analytical Client Name	GA Pou	Dere P	roject #	· · · · · ·
Courier: Fed Ex UPS USPS Clier	nt 🔲 Commercial 📈	<u> </u>	JO#:2622	
Custody Seal on Cooler/Box Present:	🗌 no 🛛 Seals i	- tt- Z		Date: 09/20/19
Packing Material: Bubble Wrap Bubble		•	LIENT: GRPower-CCF	í.
Thermometer Used	Type of Ice: Wet		Samples on ice, cooling proc	ess has begun
Cooler Temperature <u>3.2</u> Temp should be above freezing to 6°C	Biological Tissue i		Date and Initials of pers contents:	on examining
Chain of Custody Present:		 1.		
Chain of Custody Filled Out:		2.		
Chain of Custody Relinquished:		3.		
Sampler Name & Signature on COC:		4.		
Samples Arrived within Hold Time:		5		
Short Hold Time Analysis (<72hr):		6		
Rush Turn Around Time Requested:		7		
Sufficient Volume:		8		
Correct Containers Used:	PYes ONO ON/A	9.		
-Pace Containers Used:	Yes ONO ON/A			
Containers Intact:	BYES DNO DN/A	10.	-	
Filtered volume received for Dissolved tests		11.		
Sample Labels match COC:	THES DNO DN/A	12.		
-Includes date/time/ID/Analysis Matrix:	ω		·····	
All containers needing preservation have been checked.		13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	PYes INO IN/A		Lot # of added	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes DNG	Initial when completed	preservative	•
Samples checked for dechlorination:		14.		
Headspace in VOA Vials (>6mm):	□Yes □No ₽M7A	15.		
Trip Blank Present:	OYes ONO EN/A	16.		
Trip Blank Custody Seals Present	□Yes □No □N/A	1		
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:			Field Data Required?	Y / N
Person Contacted:	Date/	Time:		
Comments/ Resolution:				
		·		
			·····	
·····	<u></u>			<u> </u>
	·····			
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 12, 2020

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

RE: Project: Plant Hammond AP GW6581 Pace Project No.: 2622354

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 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,

Kein Hung

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





CERTIFICATIONS

Project: Plant Hammond AP GW6581 Pace Project No.: 2622354

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



SAMPLE SUMMARY

Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622354001	HGWC-117	Water	08/22/19 10:00	08/23/19 12:00
2622354002	HGWC-101	Water	08/22/19 13:20	08/23/19 12:00
2622354003	HGWC-118	Water	08/22/19 11:23	08/23/19 12:00
2622354004	HGWC-103	Water	08/22/19 14:50	08/23/19 12:00
2622354005	HGWC-105	Water	08/22/19 17:15	08/23/19 12:00



SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622354001		EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622354002	HGWC-101	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622354003	HGWC-118	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622354004	HGWC-103	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622354005	HGWC-105	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1



Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Sample: HGWC-117	Lab ID:	2622354001	Collecte	ed: 08/22/19	9 10:00	Received: 08/	23/19 12:00 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/27/19 11:50	08/27/19 18:29	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:29	7440-38-2	
Barium	0.036	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:29	7440-39-3	
Beryllium	0.000079J	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:29	7440-41-7	
Cadmium	0.00064J	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:29	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:29	7440-47-3	
Cobalt	0.012	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:29	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:29	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:29	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:29	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:29	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:24	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/30/19 21:52	16984-48-8	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Sample: HGWC-101	Lab ID:	2622354002	Collecte	ed: 08/22/19	9 13:20	Received: 08/	23/19 12:00 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/27/19 11:50	08/27/19 18:34	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:34	7440-38-2	
Barium	0.043	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:34	7440-41-7	
Cadmium	0.00014J	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:34	7440-43-9	
Chromium	0.00064J	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:34	7440-47-3	В
Cobalt	ND	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:34	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:34	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:34	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:34	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:26	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/30/19 22:15	16984-48-8	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Sample: HGWC-118	Lab ID:	2622354003	Collecte	ed: 08/22/19	9 11:23	Received: 08/	23/19 12:00 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/27/19 11:50	08/27/19 18:40	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:40	7440-38-2	
Barium	0.052	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:40	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:40	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:40	7440-47-3	
Cobalt	0.00030J	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:40	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:40	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:40	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:40	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:28	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	0.070J	mg/L	0.30	0.029	1		08/30/19 22:38	16984-48-8	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Sample: HGWC-103	Lab ID:	2622354004	Collecte	ed: 08/22/19	9 14:50	Received: 08/	23/19 12:00 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/27/19 11:50	08/27/19 18:46	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 18:46	7440-38-2	
Barium	0.036	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 18:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 18:46	7440-41-7	
Cadmium	0.00080J	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 18:46	7440-43-9	
Chromium	0.00063J	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 18:46	7440-47-3	В
Cobalt	0.0019J	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 18:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 18:46	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 18:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 18:46	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 18:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 18:46	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:31	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/30/19 23:00	16984-48-8	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Sample: HGWC-105	Lab ID:	2622354005	Collecte	ed: 08/22/19	9 17:15	Received: 08/	23/19 12:00 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/27/19 11:50	08/27/19 19:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/27/19 11:50	08/27/19 19:03	7440-38-2	
Barium	0.066	mg/L	0.010	0.00049	1	08/27/19 11:50	08/27/19 19:03	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/27/19 11:50	08/27/19 19:03	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/27/19 11:50	08/27/19 19:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/27/19 11:50	08/27/19 19:03	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/27/19 11:50	08/27/19 19:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/27/19 11:50	08/27/19 19:03	7439-92-1	
Lithium	0.0040J	mg/L	0.030	0.00078	1	08/27/19 11:50	08/27/19 19:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/27/19 11:50	08/27/19 19:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/27/19 11:50	08/27/19 19:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/27/19 11:50	08/27/19 19:03	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 14:38	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/31/19 00:31	16984-48-8	



Project: Pace Project No.:	Plant Hammond AF 2622354	9 GW6581										
QC Batch:	34265		Analy	sis Metho	d: E	EPA 7470A						
QC Batch Method:	EPA 7470A		-	sis Descri		7470 Mercu	iry					
Associated Lab Sar	nples: 262235400	1, 2622354002,	262235400	3, 262235	4004, 2622:	354005						
METHOD BLANK:	154112			Matrix: W	ater							
Associated Lab Sar	nples: 262235400	1, 2622354002,	262235400	3, 262235	4004, 2622	354005						
			Blar	nk	Reporting							
Paran	neter	Units	Resu	ult	Limit	MD	L	Analyzed	I Q	ualifiers		
Mercury		mg/L		ND	0.0005	0 0.	00014	08/27/19 13	:41			
LABORATORY COI	NTROL SAMPLE:	154113										
			Spike	LC	S	LCS	%	Rec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Lir	nits	Qualifiers			
Mercury		mg/L	0.002	5	0.0026	10	3	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUPL	-ICATE: 1541	14		154115							
			MS	MSD								
		2622337002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0025	10	1 100) 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.



Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

QC Batch:	3432	20	Analysis Method:	EPA 6020B
QC Batch Method:	EPA	3005A	Analysis Description:	6020B MET
Associated Lab Sam	ples:	2622354001,2	2622354002, 2622354003, 2622354004,	2622354005

METHOD BLANK: 154347

Matrix: Water

Associated Lab Samples: 2622354001, 2622354002, 2622354003, 2622354004, 2622354005

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/27/19 16:36	
Arsenic	mg/L	ND	0.0050	0.00035	08/27/19 16:36	
Barium	mg/L	ND	0.010	0.00049	08/27/19 16:36	
Beryllium	mg/L	ND	0.0030	0.000074	08/27/19 16:36	
Cadmium	mg/L	ND	0.0025	0.00011	08/27/19 16:36	
Chromium	mg/L	0.0012J	0.010	0.00039	08/27/19 16:36	
Cobalt	mg/L	ND	0.0050	0.00030	08/27/19 16:36	
Lead	mg/L	ND	0.0050	0.000046	08/27/19 16:36	
Lithium	mg/L	ND	0.030	0.00078	08/27/19 16:36	
Molybdenum	mg/L	ND	0.010	0.00095	08/27/19 16:36	
Selenium	mg/L	ND	0.010	0.0013	08/27/19 16:36	
Thallium	mg/L	ND	0.0010	0.000052	08/27/19 16:36	

LABORATORY CONTROL SAMPLE: 154348

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.090	90	80-120	
rsenic	mg/L	0.1	0.085	85	80-120	
irium	mg/L	0.1	0.088	88	80-120	
eryllium	mg/L	0.1	0.086	86	80-120	
admium	mg/L	0.1	0.088	88	80-120	
hromium	mg/L	0.1	0.088	88	80-120	
balt	mg/L	0.1	0.086	86	80-120	
ıd	mg/L	0.1	0.086	86	80-120	
nium	mg/L	0.1	0.087	87	80-120	
lybdenum	mg/L	0.1	0.089	89	80-120	
lenium	mg/L	0.1	0.085	85	80-120	
nallium	mg/L	0.1	0.087	87	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 1543	-		154350							
		2622337002	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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	0.098	0.098	98	98	75-125	1	20	
Barium	mg/L	0.078	0.1	0.1	0.18	0.18	104	104	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.092	0.093	92	93	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	101	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

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Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1543	49		154350							
Parameter	Units	2622337002 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	101	100	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.098	96	98	75-125	2	20	
Lithium	mg/L	0.0025J	0.1	0.1	0.095	0.096	92	93	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	106	105	75-125	0	20	
Selenium	mg/L	ND	0.1	0.1	0.099	0.096	99	96	75-125	3	20	
Thallium	mg/L	0.00018J	0.1	0.1	0.098	0.099	97	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.



Project: Pace Project No.:	Plant Hammond A 2622354	P GW6581										
QC Batch:	34533		Analy	sis Metho	d: E	PA 300.0						
QC Batch Method:	EPA 300.0		Analy	/sis Descrij	ption: 3	800.0 IC An	ions					
Associated Lab Sam	nples: 26223540	01, 2622354002,	262235400	3, 2622354	4004, 26223	354005						
METHOD BLANK:	155485			Matrix: W	ater							
Associated Lab Sam	nples: 26223540	01, 2622354002,	262235400 Blar		4004, 26223 Reporting	354005						
Param	neter	Units	Res	ult	Limit	MDI	_	Analyzed	Qı	ualifiers		
Fluoride		mg/L		ND	0.30)	0.029 0	8/30/19 13:5	57			
LABORATORY CON	ITROL SAMPLE:	155486										
Param	neter	Units	Spike Conc.	LC Res	-	LCS % Rec	% F Lim		Qualifiers			
Fluoride		mg/L	1	0	9.3	93	3	90-110		_		
MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 1554	-		155488							
Parameter	Units	2622319009 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	10.8	10.7	108	107	90-110	1	15	
MATRIX SPIKE SAM	MPLE:	155523										
Param	neter	Units	-	337002 sult	Spike Conc.	MS Result	c	MS 6 Rec	% Rec Limits		Qualif	iers
Fluoride		mg/L		0.11J	10		9.5	94		-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.



QUALIFIERS

Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP GW6581

Pace Project No.: 2622354

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622354001	HGWC-117	EPA 3005A	34320	EPA 6020B	34344
2622354002	HGWC-101	EPA 3005A	34320	EPA 6020B	34344
2622354003	HGWC-118	EPA 3005A	34320	EPA 6020B	34344
2622354004	HGWC-103	EPA 3005A	34320	EPA 6020B	34344
2622354005	HGWC-105	EPA 3005A	34320	EPA 6020B	34344
2622354001	HGWC-117	EPA 7470A	34265	EPA 7470A	34311
2622354002	HGWC-101	EPA 7470A	34265	EPA 7470A	34311
2622354003	HGWC-118	EPA 7470A	34265	EPA 7470A	34311
2622354004	HGWC-103	EPA 7470A	34265	EPA 7470A	34311
2622354005	HGWC-105	EPA 7470A	34265	EPA 7470A	34311
2622354001	HGWC-117	EPA 300.0	34533		
2622354002	HGWC-101	EPA 300.0	34533		
2622354003	HGWC-118	EPA 300.0	34533		
2622354004	HGWC-103	EPA 300.0	34533		
2622354005	HGWC-105	EPA 300.0	34533		

Pace Analytical

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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uthernco.com			betsy.mcdaniel@pacelabs.com,			0.	Other Partiel State Fluoride by 300 Fladium 226/22	377	7 4 7	Y Y Y	7 7 7	Y Y Y					Acception on Armination 2	Munhu (George		a Hanle			DATE Signed:	
Section C Involce Information: Attention: <u>SCSInvoices@southernco.com</u> Connerview.	Company Name. Address:	Pace Quote:		Pace Profile #: 327.4.2	Preservatives		Weit/stud N#S2SCO3 HCI HXO3 HS2O4 HS2O4	1 3	2		~	1 3		08/21/19				1810 × 1/101/121	935 256	Phene			Chad KUSSO	
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	Geosyntec	Order #: SCS10382775	뭐	GWC58	(116) 01 (ADD XIRTAM	260 Wrz/2 57 12	6 8/21	105 8/22 1105	2 C 8/22 1420	7684216					κ_{N}	1 Russe /	butin Marken Ka		T			- -
		Purchase Order #:			MATBIX CODE	Drithling Water DW Wates Witer WT Waste Witer WT Product P Soursould SL Od	Wipe WP Au AR Other OT Tissue TS											ю, so, TI (CUA)	\mathcal{U}	-		354		
Rection A Required Client Information: Company Georgia Power - Coal Combustion Residuals Address: 2400 Marcor Ecod	246U Maner Koad Atlanta, GA 30339	jabraham@southemco.com	Phone: (404)506-7239 Fax:	e Date: Standard TNI		SAMPLE ID	One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	11 C WC - 117	H GWC-101	HGWC-118	R16WC-103	102-105					. Additional contraction	Metals list: Hg. Sb. As, Ba, Be, Cd, Cr, Co, Pb, Li, Mo, So, T			1	ou . 2622354		
Section A Required Clie Company: Artriness:			Phone:	Requested Du			# MƏTI	461		20 M					1078			 Metals list: Hg. 				Pag	3 a 16 of	17

Face Analytical Client Name:	01. 0.0	ler CCK P	JO#:26223 M: BM Due LIENT: GAPower-CCR		30/19
ourier: Fed Ex UPS USPS Clien acking #:	t Commercial	Prace Other	Proj. Pros. Proj.		
ustody Seal on Cooler/Box Present:	no- Seals	intact: 🚽 yes 🗌	no	201 TO 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•••
acking Material; Bubble Wrap Bubble	Bags 🔲 Noné,	Other			
nermometer Used 244	Type of Ice: Wet	Blue None	Samples on ice, cooling proce		_
ooler Temperature 3// (Biological Tissue	is Frozen: Yes No	Date and Initials of pers	in examining	~
emp should be above freezing to 6°C		Comments:		7. (2.7)	_
hain of Custody Present:		1			
hain of Custody Filled Out:		2		·	
hain of Custody Relinquished:		3.	·····		_
ampler Name & Signature on COC:		4.			
amples Arrived within Hold Time:		A 5			
hort Hold Time Analysis (<72hr):		A 6.			
Rush Turn Around Time Requested:		A 7			
Sufficient Volume:		A 8	÷		_
Correct Containers Used:	BYes DNO DN/	A 9.			
-Pace Containers Used:		'A			
Containers Intact:		A 10.			
iltered volume received for Dissolved tests		IA 11.			
Sample Labels match COC: 86		14 12. H-G-WC-10	13 collectiontin	eisig	2012
-Includes date/time/ID/Analysis Matrix:	<u>'W</u>	1 1			
Il containers needing preservation have been checked.	ØYes ⊡No ⊡N	/A 13.			
Il containers needing preservation are found to be in compliance with EPA recommendation.				· · · · · · · · · · · · · · · · · · ·	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes No	Initial when completed	Lot # of added preservative	i	
Samples checked for dechlorination:		R 14			
Headspace in VOA Vials (>6mm):		14. 15.			
Trip Blank Present:		WA 16.			
Trip Blank Custody Seals Present					
Pace Trip Blank Lot # (if purchased):					
Client Notification/ Resolution:	_		Field Data Required?	Y / N	
Person Contacted:		te/Time:		CAT 81	1/2 - 11
Comments/ Resolution:	was u	sed tor log	in purposes,	0011 0/1	~-4(
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	·····			.	
Project Manager Review:			Date:		

F-ALLC003rev.3, 11September2006



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

September 23, 2019

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

RE: Project: Plant Hammond AP GW6581 Pace Project No.: 2622355

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 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,

Batery Mr Damil

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.: 2622355

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



SAMPLE SUMMARY

Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622355001	HGWC-117	Water	08/22/19 10:00	08/23/19 12:00
2622355002	HGWC-101	Water	08/22/19 13:20	08/23/19 12:00
2622355003	HGWC-118	Water	08/22/19 11:23	08/23/19 12:00
2622355004	HGWC-103	Water	08/22/19 14:50	08/23/19 12:00
2622355005	HGWC-105	Water	08/22/19 17:15	08/23/19 12:00



SAMPLE ANALYTE COUNT

Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622355001	HGWC-117	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622355002	HGWC-101	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622355003	HGWC-118	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622355004	HGWC-103	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622355005	HGWC-105	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Sample: HGWC-117 PWS:	Lab ID: 26223550 Site ID:	Collected: 08/22/19 10:00 Sample Type:	Received:	08/23/19 12:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.333 ± 0.283 (0.509) C:84% T:NA	pCi/L	09/05/19 09:49	9 13982-63-3	
Radium-228	EPA 9320	-0.0831 ± 0.297 (0.726) C:67% T:79%	pCi/L	09/19/19 12:11	15262-20-1	
Total Radium	Total Radium Calculation	0.333 ± 0.580 (1.24)	pCi/L	09/20/19 12:23	3 7440-14-4	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Sample: HGWC-101 PWS:	Lab ID: 26223550 Site ID:	Collected: 08/22/19 13:20 Sample Type:	Received:	08/23/19 12:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.474 ± 0.245 (0.335) C:81% T:NA	pCi/L	09/09/19 09:00	3 13982-63-3	
Radium-228		-0.0890 ± 0.343 (0.828) C:69% T:75%	pCi/L	09/19/19 12:12	2 15262-20-1	
Total Radium	Total Radium Calculation	0.474 ± 0.588 (1.16)	pCi/L	09/20/19 12:23	3 7440-14-4	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Sample: HGWC-118 PWS:	Lab ID: 26223550 Site ID:	Collected: 08/22/19 11:23 Sample Type:	Received:	08/23/19 12:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.492 ± 0.255 (0.370) C:81% T:NA	pCi/L	09/09/19 09:06	3 13982-63-3	
Radium-228		0.412 ± 0.411 (0.846) C:67% T:78%	pCi/L	09/19/19 12:11	15262-20-1	
Total Radium	Total Radium Calculation	0.904 ± 0.666 (1.22)	pCi/L	09/20/19 12:23	3 7440-14-4	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Sample: HGWC-103 PWS:	Lab ID: 26223550 Site ID:	Collected: 08/22/19 14:50 Sample Type:	Received:	08/23/19 12:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.434 ± 0.204 (0.222) C:95% T:NA	pCi/L	09/09/19 09:06	3 13982-63-3	
Radium-228		0.512 ± 0.402 (0.787) C:72% T:78%	pCi/L	09/19/19 13:34	15262-20-1	
Total Radium	Total Radium Calculation	0.946 ± 0.606 (1.01)	pCi/L	09/20/19 12:23	3 7440-14-4	



Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

Sample: HGWC-105 PWS:	Lab ID: 26223550 Site ID:	Collected: 08/22/19 17:15 Sample Type:	Received:	08/23/19 12:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.241 ± 0.175 (0.286) C:83% T:NA	pCi/L	09/09/19 09:06	3 13982-63-3	
Radium-228		0.453 ± 0.393 (0.786) C:71% T:72%	pCi/L	09/19/19 12:12	2 15262-20-1	
Total Radium	Total Radium Calculation	0.694 ± 0.568 (1.07)	pCi/L	09/20/19 12:23	3 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond A	P GW6581			
Pace Project No.:	2622355				
QC Batch:	359490	Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radi	ium	
Associated Lab Sa	mples: 26223550	01			
METHOD BLANK:	1745579	Matrix: Water			
Associated Lab Sa	mples: 26223550	01			
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.243 ± 0.244 (0.474) C:94% T:NA	pCi/L	09/05/19 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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: Pace Project No.:	Plant Hammond	AP GW6581				
QC Batch:	358895		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 228		
Associated Lab Sa	mples: 2622355	001, 2622355002, 2	622355003, 2622355004, 20	622355005		
METHOD BLANK:	1742554		Matrix: Water			
Associated Lab Sa	mples: 2622355	001, 2622355002, 2	622355003, 2622355004, 20	622355005		
Para	meter	Act ± U	nc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.167 ± 0.291 (0	.635) C:73% T:86%	pCi/L	09/19/19 12:11	

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



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond	AP GW6581				
Pace Project No.:	2622355					
QC Batch:	359801		Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315		Analysis Description:	9315 Total Radium		
Associated Lab Sa	mples: 2622355	002, 262235500	3, 2622355004, 2622355005			
METHOD BLANK:	1746802		Matrix: Water			
Associated Lab Sa	mples: 2622355	002, 262235500	3, 2622355004, 2622355005			
Para	meter	Act ±	Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.563 ± 0.229	(0.205) C:97% T:NA	pCi/L	09/09/19 09:06	

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.



QUALIFIERS

Project: Plant Hammond AP GW6581

Pace Project No.: 2622355

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond AP GW6581Pace Project No.:2622355

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2622355001	HGWC-117	EPA 9315	359490		
2622355002	HGWC-101	EPA 9315	359801		
2622355003	HGWC-118	EPA 9315	359801		
2622355004	HGWC-103	EPA 9315	359801		
2622355005	HGWC-105	EPA 9315	359801		
2622355001	HGWC-117	EPA 9320	358895		
2622355002	HGWC-101	EPA 9320	358895		
2622355003	HGWC-118	EPA 9320	358895		
2622355004	HGWC-103	EPA 9320	358895		
2622355005	HGWC-105	EPA 9320	358895		
2622355001	HGWC-117	Total Radium Calculation	362430		
2622355002	HGWC-101	Total Radium Calculation	362430		
2622355003	HGWC-118	Total Radium Calculation	362430		
2622355004	HGWC-103	Total Radium Calculation	362430		
2622355005	HGWC-105	Total Radium Calculation	362430		

Adde Analytical

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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ustody Seal on Cooler/Box Present:	no :	Seals inta	rt: 🖵 yes	🗌 no	Proj. Name:		<u>:</u>
acking Material; Bubble Wrap Bubble	Bags 🗍 No	né 🗌	Other				
hermometer Used	Type of Ice:		lue None		es on ice, cooling proc	ess has bequ	h
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ampler Name & Signature on COC:		□n/a 4.			·	1	
amples Arrived within Hold Time:	Dies 🗆 No	□n/a 5.				I	
hort Hold Time Analysis (<72hr):	TYes DINO	□N/A 6.					
Rush Turn Around Time Requested:		□N/A 7.					
sufficient Volume:		□n/a 8.			<i>;</i>		
Correct Containers Used:		□n/a 9.				1	
- Pace Containers Used:		□n/a					
Containers Intact:		□N/A 10					
iltered volume received for Dissolved tests							
Sample Labels match COC: 8/	JALIYes Ono	□N/A 12	H-G-WC-	103 (ollection to in	eis 14	1901
-Includes date/time/ID/Analysis Matrix:	<u>''W</u>		ور	د،		11 /7	'SO pe
Il containers needing preservation have been checked.	ØYes □No	□n/a 13	•				
NI containers needing preservation are found to be in						1	
ompliance with EPA recommendation.			ial when	Lot #	of added		
xceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes □No		npleted		rvative		
Samples checked for dechlorination:	□Yes □No	ENA 14	•				
Headspace in VOA Vials (>6mm):	□Yes □No		·			1	
Trip Blank Present:	□Yes □No		•				
Trip Blank Custody Seals Present	□Yes □No	EN/A				1	
Pace Trip Blank Lot # (if purchased):							
Client Notification/ Resolution:			······································	Field	Data Required?	Y / N	<u></u>
Person Contacted:		Date/Tin	ie:		·	.	.
Comments/ Resolution: The CAC	· was	1 cod	forla	cin &	UNPO COLO	CATE	<u> 23 </u>
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Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

March 12, 2020

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

RE: Project: Plant Hammond AP Pace Project No.: 2622400

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 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,

Kein Hung

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 Pace Project No.: 2622400

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



SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2622400

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622400001	EB-01	Water	08/23/19 11:45	08/26/19 18:30
2622400002	EB-02	Water	08/23/19 11:55	08/26/19 18:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond APPace Project No.:2622400

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622400001	EB-01	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622400002	EB-02	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1



Project: Plant Hammond AP

Pace Project No.: 2622400

Sample: EB-01	Lab ID:	2622400001	Collecte	ed: 08/23/19	9 11:45	Received: 08/	26/19 18:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	08/30/19 17:59	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 17:59	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 17:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 17:59	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 17:59	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 17:59	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 17:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 17:59	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 17:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 17:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 17:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 17:59	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:35	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/31/19 00:53	16984-48-8	



Project: Plant Hammond AP

Pace Project No.: 2622400

Sample: EB-02	Lab ID:	2622400002	Collecte	ed: 08/23/19	9 11:55	Received: 08/	26/19 18:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	08/30/19 18:05	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 18:05	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 18:05	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 18:05	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 18:05	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 18:05	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 18:05	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 18:05	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 18:05	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 18:05	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 18:05	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 18:05	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:38	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		08/31/19 01:16	16984-48-8	



Project:	Plant Hammond A	νP										
Pace Project No.:	2622400											
QC Batch:	34391		Analy	/sis Metho	d:	EPA 7470A						
QC Batch Method:	EPA 7470A		Analy	sis Descri	iption:	7470 Mercu	ıry					
Associated Lab Sar	nples: 26224000	001, 2622400002										
METHOD BLANK:	154672			Matrix: W	/ater							
Associated Lab Sar	nples: 26224000	001, 2622400002										
			Blar		Reporting							
Parar	neter	Units	Res	ult	Limit	MD	L	Analyzed	Q.	ualifiers		
Mercury		mg/L		ND	0.0005	0 0.	00014	08/28/19 16	:21			
LABORATORY CO	NTROL SAMPLE:	154673										
			Spike	LC	S	LCS	%	Rec				
Parar	neter	Units	Conc.	Re	sult	% Rec	Li	mits	Qualifiers			
Mercury		mg/L	0.002	25	0.0025	10	0	80-120				
MATRIX SPIKE & N	IATRIX SPIKE DUF	PLICATE: 1546	74		154675							
			MS	MSD								
		2622398001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Units	s Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	_ ND	0.0025	0.0025	0.0024	0.0025	9	8 100	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.



Project: Plant Hammond AP

Pace Project No.: 2622400

QC Batch: 3449	96	Analysis Meth	nod: EP	A 6020B		
QC Batch Method: EPA	3005A	Analysis Des	cription: 602	20B MET		
Associated Lab Samples:	2622400001, 2622400002					
METHOD BLANK: 15517	7	Matrix:	Water			
Associated Lab Samples:	2622400001, 2622400002					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/30/19 17:42	
Arsenic	mg/L	ND	0.0050	0.00035	08/30/19 17:42	
Barium	mg/L	ND	0.010	0.00049	08/30/19 17:42	
Beryllium	mg/L	ND	0.0030	0.000074	08/30/19 17:42	
Cadmium	mg/L	ND	0.0025	0.00011	08/30/19 17:42	
Chromium	mg/L	ND	0.010	0.00039	08/30/19 17:42	
Cobalt	mg/L	ND	0.0050	0.00030	08/30/19 17:42	
Lead	mg/L	ND	0.0050	0.000046	08/30/19 17:42	
Lithium	mg/L	ND	0.030	0.00078	08/30/19 17:42	
Molybdenum	mg/L	ND	0.010	0.00095	08/30/19 17:42	
Selenium	mg/L	ND	0.010	0.0013	08/30/19 17:42	
Thallium	mg/L	ND	0.0010	0.000052	08/30/19 17:42	

LABORATORY CONTROL SAMPLE: 155178

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.10	104	80-120	
rsenic	mg/L	0.1	0.10	101	80-120	
arium	mg/L	0.1	0.10	104	80-120	
eryllium	mg/L	0.1	0.10	104	80-120	
admium	mg/L	0.1	0.10	103	80-120	
hromium	mg/L	0.1	0.10	103	80-120	
obalt	mg/L	0.1	0.10	101	80-120	
ad	mg/L	0.1	0.10	101	80-120	
hium	mg/L	0.1	0.11	105	80-120	
olybdenum	mg/L	0.1	0.10	105	80-120	
elenium	mg/L	0.1	0.10	102	80-120	
hallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX S		CATE: 1551	79		155180							
_		2622479002	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	104	102	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.11	0.11	106	107	75-125	1	20	
Barium	mg/L	0.036	0.1	0.1	0.14	0.13	103	97	75-125	4	20	
Beryllium	mg/L	0.00024J	0.1	0.1	0.098	0.095	97	95	75-125	3	20	
Cadmium	mg/L	0.00072	0.1	0.1	0.10	0.099	100	98	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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Project: Plant Hammond AP Pace Project No.: 2622400

MATRIX SPIKE & MATRIX	SPIKE DUPL	CATE: 1551	79		155180							
Parameter	Units	2622479002 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	0.099	0.097	99	97	75-125	2	20	
Cobalt	mg/L	0.0018J	0.1	0.1	0.098	0.098	97	96	75-125	1	20	
Lead	mg/L	0.000049J	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Lithium	mg/L	0.0033J	0.1	0.1	0.10	0.10	100	97	75-125	2	20	
Molybdenum	mg/L	0.0065J	0.1	0.1	0.11	0.11	106	105	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.11	106	109	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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Project:	Plant H	lammond AP											
Pace Project No.:	262240	00											
QC Batch:	3453	3		Anal	sis Metho	d: E	EPA 300.0						
QC Batch Method:	EPA :	300.0		Anal	/sis Descrij	otion: 3	300.0 IC An	ions					
Associated Lab San	nples:	2622400001	, 2622400002										
METHOD BLANK:	15548	5			Matrix: W	ater							
Associated Lab San	nples:	2622400001	, 2622400002										
				Bla	nk l	Reporting							
Paran	neter		Units	Res	ult	Limit	MDI	-	Analyzed	Qı	ualifiers		
Fluoride			mg/L		ND	0.30	0	0.029 0	8/30/19 13:	57			
LABORATORY COM	NTROL	SAMPLE: 1	55486										
				Spike	LC		LCS	% R					
Paran	neter		Units	Conc.	Res	sult	% Rec	Lim	its C	Qualifiers	_		
Fluoride			mg/L	1	0	9.3	93	3	90-110				
MATRIX SPIKE & M	IATRIX	SPIKE DUPLI	ICATE: 1554	87		155488							
				MS	MSD								
			2622319009	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	•	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride		mg/L	ND	10	10	10.8	10.7	108	107	90-110	1	15	
MATRIX SPIKE SAM	MPLE:	1	55523										
				2622	337002	Spike	MS		MS	% Rec	;		
Paran	neter		Units	Re	sult	Conc.	Result	9	6 Rec	Limits		Qualif	iers
Fluoride			mg/L		0.11J	10		9.5	94	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.



QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2622400

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP Pace Project No.: 2622400

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622400001	EB-01	EPA 3005A	34496	EPA 6020B	34557
2622400002	EB-02	EPA 3005A	34496	EPA 6020B	34557
2622400001	EB-01	EPA 7470A	34391	EPA 7470A	34429
2622400002	EB-02	EPA 7470A	34391	EPA 7470A	34429
2622400001	EB-01	EPA 300.0	34533		
2622400002	EB-02	EPA 300.0	34533		

Pace Anelytical

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B	Section C	-
Required	citent information:	ĕ	5	
Address:	Georgia Power - Coal Combustion Residuals	Report 10. Joju Abraham / Lauren Petty	Attention: scsinvoices@southernco.com	
	246U IMBRIEF KOBO Allocito CA 20220	upy Io. Geosyntec	Company Name.	
Email:		Jurchase Order # CC310382776	Pace Ounte	
Phone:	06-7239 Fax:	Project Name: Plant Hammond AP	Pace Project Manager: betsv modaniel@oacelebs.com	
Reques	Requested Due Date:	Projact #:	4.2	GA
				Abbunctood (Analysis) Interest (2000) 111 and 121 and 1
	MATRIX	CODE 2 00 COLLECTED	Preservatives	
	SAMPLE ID Sussaid	2 윤 가 썼 것 2 866 VAIHd Code 6G=GRAB C= START	0	(N/X) 91
# MƏTI	One Character per box. Wea (A-Z, 0-9 /, -) Ar Ar Sample Ids must be unique Taxee	ᇂᇵ요 ස Эдор хіятам	 CF CONTAINEF Unpreserved H2SO4 H2SO4 H2SO3 Ma2S2O3 Ma2S2O3 Macinanoi Macinanoi Other Cother Cother Cother Cother Cother Cother Cother Cother Sedium 226/226 	nhold) (SubiseЯ
	E0-01	WTG 8/12/14 1140 8/2/14 1145 26		
E E	EB-02	WT 6 8/23/19 1150 8/23/19 1155 26	413 474	7
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• Metals li	Metals list Hg, Sb. As, Ba, Bo, Cd, Cr, Co, Pb, Li, Mo, So, Tl	Apollia Wandrus bee 08/ 2/14	1530 Finding Hera 18	21/19 1540 248 Y Y X
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Z	0#:2622400	PRINT Namo of SAMPLER: SIGNATURE of SAMPLER:	Noglia Muskus) - - - - - - - - - - - - - - - - - - -
			HOXIG M/ war	nul 25 20 20 20 20 20 20 20 20 20 20 20 20 20
107	2622400			

	ple Condition Upon Receipt	WO#:2622	400	
Sam		PM: BM Due	Date: 09/	04/
Face Analytical Client Name:	GAPOWER (CR	CLIENT: GAPower-CCR	Date: US/	24/
	•			
: Courier: 🔲 Fed Ex 🗌 UPS 🗍 USPS 🗍 Clien	t Commercial Pace Other	Proj. Due Date		
Fracking #:	/ /			
Custody Seal on Cooler/Box Present:	no Seals intact: yes			
Packing Material: Bubble Wrap Bubble		Samples on ice, cooling pro	ocess has begu	n
Thermometer Used _2/4_	Type of Ice: Wet Blue None	Date and Initials of pe	rson examinin	g
Cooler Temperature 2.8°C	Biological Tissue is Frozen: Yes N	contents:	6/1200	14
Temp should be above freezing to 6°C	Comments:			
Chain of Custody Present:	TYes INO IN/A 1.		i.	
Chain of Custody Filled Out:	Dares INO IN/A 2.			
Chain of Custody Relinquished:	□res □No □N/A 3			
Sampler Name & Signature on COC:	□Yes □No □N/A 4.			
Samples Arrived within Hold Time:	Dres DNO DN/A 5.		1	
Short Hold Time Analysis (<72hr):				
Rush Turn Around Time Requested:	□Yes □No □N/A 7			
Sufficient Volume:				
Correct Containers Used:	Øyes □No □N/A 9.		1	
-Pace Containers Used:				
Containers Intact:	27Yes 0No 0N/A 10.			
Filtered volume received for Dissolved tests	□Yes □No □M/A 11			
Sample Labels match COC:	22 Tes INO IN/A 12.		:	
-Includes date/time/ID/Analysis Matrix: All containers needing preservation have been checked.	<u> </u>			
All containers needing preservation have been checked.	Gres Ino In/A 13.			
All containers needing preservation are found to be in compliance with EPA recommendation.	Eres DNO DN/A		i.	
	Initial when	Lot # of added		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes ZNo completed	preservative	i	
Samples checked for dechlorination:	<u> </u>			
Headspace in VOA Vials (>6mm):	□Yes □No □N/A 15.		1	
Trip Blank Present:	□Yes □No <i>□</i> N/A 16.			
Trip Blank Custody Seals Present				
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:		Field Onto D		
Person Contacted:	Date/Time:	Field Data Required?	Y / N	
Comments/ Resolution:				
Project M				
Project Manager Review:		D		
Note: Whenever there is a discrepancy affecting North C Certification Office (i.e out of hold, incorrect preservative		Date:		
Certification Office (arolina compliance energy	P	age 14 of 14	_

E 411 0



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

September 25, 2019

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

RE: Project: Plant Hammond AP Pace Project No.: 2622401

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 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,

Batery Mr Damil

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.: 2622401

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



SAMPLE SUMMARY

Project: Plant Hammond AP

Pace Project No.: 2622401

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622401001	EB-01	Water	08/23/19 11:45	08/26/19 18:30
2622401002	EB-02	Water	08/23/19 11:55	08/26/19 18:30



SAMPLE ANALYTE COUNT

Project: Plant Hammond AP Pace Project No.: 2622401

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622401001	EB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622401002	EB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622401

Sample: EB-01 PWS:	Lab ID: 26224010 Site ID:	01 Collected: 08/23/19 11:45 Sample Type:	Received:	08/26/19 18:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.251 ± 0.254 (0.495) C:91% T:NA	pCi/L	09/18/19 08:3	7 13982-63-3	
Radium-228		-0.369 ± 0.255 (0.680) C:77% T:83%	pCi/L	09/20/19 11:53	3 15262-20-1	
Total Radium	Total Radium Calculation	0.251 ± 0.509 (1.18)	pCi/L	09/23/19 12:5	5 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP

Pace Project No.: 2622401

Sample: EB-02 PWS:	Lab ID: 26224010 Site ID:	Collected: 08/23/19 11:55 Sample Type:	Received:	08/26/19 18:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.539 ± 0.297 (0.374) C:91% T:NA	pCi/L	09/18/19 08:3	7 13982-63-3	
Radium-228		0.478 ± 0.382 (0.753) C:75% T:75%	pCi/L	09/20/19 11:54	4 15262-20-1	
Total Radium	Total Radium Calculation	1.02 ± 0.679 (1.13)	pCi/L	09/23/19 12:5	5 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond /	AP			
Pace Project No.:	2622401				
QC Batch:	359964	Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radi	um	
Associated Lab Sar	mples: 26224010	001, 2622401002			
METHOD BLANK:	1747386	Matrix: Water			
Associated Lab Sar	mples: 2622401	001, 2622401002			
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.204 ± 0.233 (0.472) C:94% T:NA	pCi/L	09/18/19 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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond AF	0				
Pace Project No.:	2622401					
QC Batch:	359966		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 228		
Associated Lab Sar	mples: 262240100	01, 2622401002				
METHOD BLANK:	1747390		Matrix: Water			
Associated Lab Sai	mples: 262240100	01, 2622401002				
Para	meter	Act ± Uno	c (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.232 ± 0.311 (0.6	64) C:77% T:89%	pCi/L	09/20/19 11:52	

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



QUALIFIERS

Project: Plant Hammond AP

Pace Project No.: 2622401

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond AP Pace Project No.: 2622401

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622401001	EB-01	EPA 9315	359964		
2622401002	EB-02	EPA 9315	359964		
2622401001	EB-01	EPA 9320	359966		
2622401002	EB-02	EPA 9320	359966		
2622401001	EB-01	Total Radium Calculation	362632		
2622401002	EB-02	Total Radium Calculation	362632		

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

	Pace Anatylical				0 F	CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.	- P				Ana ocum		al Re Il relev	edue	ist D Ids mu	ocui st be c	neni omplet	r ed acc	urately.					
Continu A		Section B						Section C	с Б												-		~	
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Company	- Coal Combustion Residuals	Report To.	Joju Abral	Joju Abraham / Lauren Petty	en Petty			Attention	u U	scsinv	oices	scsinvoices@southernco.com	ernco.	E										
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Email: jabr	emco.com	Project Name:		Plant Hammond AP	d AP			Pace	Pace Project Manager	Manage		betsy mcdaniel@pacelabs.com	aniel@p	acelabs.	com.				10 N.	- Stato	ALL State Midention Laster		市場の経済	3
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· Courier:	nt Commercial	Pace Other _	Proj. Due Date:	
Custody Seal on Cooler/Box Present:	no Seals i	intact: eyes [no Proj, Name:	
Packing Material: Subble Wrap Bubble	Bags None [Other		
Thermometer Used	Type of Ice:	<u> </u>	Samples on ice, cooling process	has becun
2 521	Biological Tissue i		Date and Initials of person	
Cooler Temperature <u> </u>	-	Comments:	contents:	2004
Chain of Custody Present:		1.		
Chain of Custody Filled Out:		2.		
Chain of Custody Relinquished:		3.		
Sampler Name & Signature on COC:	Yes No N/A	4.		
Samples Arrived within Hold Time:		5.		
Short Hold Time Analysis (<72hr):		6.		
Rush Turn Around Time Requested:		7.		
Sufficient Volume:		8.		
Correct Containers Used:		9.		
-Pace Containers Used:				
Containers Intact:	ØYes □No □N/A	10.		
Filtered volume received for Dissolved tests		11.		
Sample Labels match COC:	Dates INO IN/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u> </u>			
All containers needing preservation have been checked.		13.		
All containers needing preservation are found to be in compliance with EPA recommendation.			har was start	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes ₽No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	Yes No	P14.		
Headspace in VOA Vials (>6mm):	□Yes □No □N/A	- 15.		
Trip Blank Present:	□Yes □No ₽N/A	16.		
Trip Blank Custody Seals Present				
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:			Field Data Required? Y	/ N
Person Contacted:	Date/	Time:		
Comments/ Resolution:				
			, . <u></u>	
				<u> </u>
	<u></u>			
Project Manager Review:			Date:	
Note: Whenever there is a discrepancy affecting North	Carolina compliance sar	nples, a copy of this for	n will be sent to the North Carolina D	EHNR

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

-

Page 12 of 12 F-ALLC003rev.3, 11September2006



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

March 12, 2020

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

RE: Project: Plant Hammond AP GW 6581 Pace Project No.: 2622402

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 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,

Kein Hung

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 GW 6581 Pace Project No.: 2622402

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



SAMPLE SUMMARY

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622402

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622402001	HGWC-107	Water	08/23/19 09:35	08/26/19 18:30
2622402002	HGWC-109	Water	08/23/19 10:40	08/26/19 18:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond AP GW 6581Pace Project No.:2622402

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622402001	HGWC-107	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622402002	HGWC-109	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1



ANALYTICAL RESULTS

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622402

Sample: HGWC-107	Lab ID:	2622402001	Collecte	ed: 08/23/19	9 09:35	Received: 08/	26/19 18:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	08/30/19 18:11	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 18:11	7440-38-2	
Barium	0.038	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 18:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 18:11	7440-41-7	
Cadmium	0.00011J	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 18:11	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 18:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 18:11	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 18:11	7439-92-1	
Lithium	0.00092J	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 18:11	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 18:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 18:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 18:11	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:40	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Fluoride	ND	mg/L	0.30	0.029	1		09/03/19 22:51	16984-48-8	



ANALYTICAL RESULTS

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622402

Sample: HGWC-109	Lab ID:	2622402002	Collecte	ed: 08/23/19	9 10:40	Received: 08/	26/19 18:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	08/30/19 18:16	7440-36-0	
Arsenic	0.0035J	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 18:16	7440-38-2	
Barium	0.088	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 18:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 18:16	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 18:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 18:16	7440-47-3	
Cobalt	0.0027J	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 18:16	7440-48-4	
Lead	0.000058J	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 18:16	7439-92-1	В
Lithium	0.00090J	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 18:16	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 18:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 18:16	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 18:16	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	08/28/19 13:26	08/28/19 16:42	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Fluoride	0.034J	mg/L	0.30	0.029	1		09/03/19 23:14	16984-48-8	



Project: Pace Project No.:	Plant Hammond Al 2622402	P GW 6581										
QC Batch:	34391		Analy	sis Metho	od:	EPA 7470A						
QC Batch Method:	EPA 7470A		•	, ysis Descr		7470 Mercu	ıry					
Associated Lab Sar	mples: 26224020	01, 2622402002										
METHOD BLANK:	154672			Matrix: V	Vater							
Associated Lab Sar	nples: 26224020	01, 2622402002										
			Blai	nk	Reporting							
Parar	neter	Units	Res	ult	Limit	MD	L	Analyzed	l Qi	ualifiers		
Mercury		mg/L		ND	0.0005	50 0.	.00014	08/28/19 16	:21			
LABORATORY CO	NTROL SAMPLE:	154673										
			Spike	L	CS	LCS	%	Rec				
Parar	neter	Units	Conc.	Re	sult	% Rec	Lir	nits	Qualifiers			
Mercury		mg/L	0.002	25	0.0025	10	0	80-120				
MATRIX SPIKE & N	ATRIX SPIKE DUP	LICATE: 1546	74		154675							
			MS	MSD								
		2622398001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0025	9	8 100) 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.



Project: Plant Hammond AP GW 6581

Pace Project No.: 2622402

QC Batch: 34496 Analysis Method: EPA 6020B QC Batch Method: EPA 3005A Analysis Description: 6020B MET Associated Lab Samples: 2622402001, 2622402002 Matrix: Water METHOD BLANK: 155177 Matrix: Water Associated Lab Samples: 2622402001, 2622402002	
Associated Lab Samples: 2622402001, 2622402002 METHOD BLANK: 155177 Matrix: Water	
METHOD BLANK: 155177 Matrix: Water	
Associated Lab Samples: 2622402001_2622402002	
Blank Reporting	
Parameter Units Result Limit MDL Analyzed	Qualifiers
Antimony mg/L ND 0.0030 0.00027 08/30/19 17:42	
Arsenic mg/L ND 0.0050 0.00035 08/30/19 17:42	
Barium mg/L ND 0.010 0.00049 08/30/19 17:42	
Beryllium mg/L ND 0.0030 0.000074 08/30/19 17:42	
Cadmium mg/L ND 0.0025 0.00011 08/30/19 17:42	
Chromium mg/L ND 0.010 0.00039 08/30/19 17:42	
Cobalt mg/L ND 0.0050 0.00030 08/30/19 17:42	
Lead mg/L ND 0.0050 0.000046 08/30/19 17:42	
Lithium mg/L ND 0.030 0.00078 08/30/19 17:42	
Molybdenum mg/L ND 0.010 0.00095 08/30/19 17:42	
Selenium mg/L ND 0.010 0.0013 08/30/19 17:42	
Thallium mg/L ND 0.0010 0.000052 08/30/19 17:42	

LABORATORY CONTROL SAMPLE: 155178

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.10	104	80-120	
rsenic	mg/L	0.1	0.10	101	80-120	
arium	mg/L	0.1	0.10	104	80-120	
eryllium	mg/L	0.1	0.10	104	80-120	
admium	mg/L	0.1	0.10	103	80-120	
hromium	mg/L	0.1	0.10	103	80-120	
balt	mg/L	0.1	0.10	101	80-120	
ad	mg/L	0.1	0.10	101	80-120	
hium	mg/L	0.1	0.11	105	80-120	
blybdenum	mg/L	0.1	0.10	105	80-120	
elenium	mg/L	0.1	0.10	102	80-120	
nallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 1551	79		155180							
Parameter	Units	2622479002 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	104	102	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.11	0.11	106	107	75-125	1	20	
Barium	mg/L	0.036	0.1	0.1	0.14	0.13	103	97	75-125	4	20	
Beryllium	mg/L	0.00024J	0.1	0.1	0.098	0.095	97	95	75-125	3	20	
Cadmium	mg/L	0.00072	0.1	0.1	0.10	0.099	100	98	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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Project: Plant Hammond AP GW 6581

Pace Project No.: 2622402

MATRIX SPIKE & MATRIX	SPIKE DUPLI	ICATE: 1551	79 MS	MSD	155180							
Parameter	Units	2622479002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Cobalt	mg/L	0.0018J	0.1	0.1	0.098	0.098	97	96	75-125	1	20	
Lead	mg/L	0.000049J	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Lithium	mg/L	0.0033J	0.1	0.1	0.10	0.10	100	97	75-125	2	20	
Molybdenum	mg/L	0.0065J	0.1	0.1	0.11	0.11	106	105	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.11	106	109	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	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.



Project: Pace Project No.:	Plant H 26224	Hammond AP 02	GW 6581										
QC Batch:	3468	0		Anal	ysis Metho	d:	EPA 300.0						
QC Batch Method:	EPA	300.0		Anal	ysis Descri	ption:	300.0 IC An	ions					
Associated Lab Sar	nples:	2622402001	, 2622402002										
METHOD BLANK:	15609	9			Matrix: W	ater							
Associated Lab Sar	nples:	2622402001	, 2622402002										
				Bla	nk	Reporting							
Paran	neter		Units	Res	ult	Limit	MDI	-	Analyzed	Qı	ualifiers		
Fluoride			mg/L		ND	0.3	0	0.029	09/03/19 20:	58			
LABORATORY COI	NTROL	SAMPLE: 1	56100										
Paran	neter		Units	Spike Conc.	LC Res	-	LCS % Rec		Rec nits (Qualifiers			
Fluoride			mg/L		0	9.4	94	1	90-110				
MATRIX SPIKE & M	IATRIX		ICATE: 1561	01		156102							
				MS	MSD								
Parameter	r	Units	2622398001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride		mg/L	0.11J	10	10	9.4	9.2	9	2 91	90-110	1	15	
MATRIX SPIKE SAI	MPLE:	1	56103										
				-	402001	Spike	MS		MS	% Rec			
Parar	neter		Units	Re	sult	Conc.	Result		% Rec	Limits		Qualif	iers
Fluoride			mg/L		ND	10		9.6	96	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.



QUALIFIERS

Project: Plant Hammond AP GW 6581

Pace Project No.: 2622402

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond AP GW 6581Pace Project No.:2622402

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622402001	HGWC-107	EPA 3005A	34496	EPA 6020B	34557
2622402002	HGWC-109	EPA 3005A	34496	EPA 6020B	34557
2622402001	HGWC-107	EPA 7470A	34391	EPA 7470A	34429
2622402002	HGWC-109	EPA 7470A	34391	EPA 7470A	34429
2622402001	HGWC-107	EPA 300.0	34680		
2622402002	HGWC-109	EPA 300.0	34680		

Section A

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Decuoir A Barnhad	Berutred Filant Information.	Section B	Section C	-
Company:	V: Geomia Power - Coal Combustion Booid who	Required Froject information:	ē	Page: ' Of W
Address:	1		Attention: scsinvoices@southernco.com	
	Allanta GA 20330	cupy ro. Geosyntec	Company Name:	
Email	ishraham@couthomco.com		Address:	and the second state of th
Phone.		0382775		
Requeste	Recuested Due Date: CA-VA >	Project Name: Plant Hammond AP	lanager: betsy.mcdaniel@pacelabs.com,	and the second state of the address of the second se
r			2	GA
	MATRIX	COMP)	Preservatives	
	SAMPLE ID Sourced	Q # ™ ¥ Y W (G=GRAB C= START END	0	(N/A) 84
# MƏTI	One Character per box. Wee (A-Z, 0-9/, -) Au Sample Ids must be unique Taxee	а с соре соре соре соре соре соре соре соре	 C CONTAINER C CONTAINER Redium 226/226 	Residual Chlorin
	اك	76012005813093	H1 3 1 X	N
	NCWC-109	7 G 8/23 10 20 8/23 104020		N
é				
S				
			114410	
		(c(2))		
	A A A A A A A A A A A A A A A A A A A			
• Metals list	• Metals list: Hg. Sb, As, Ba, Bo, Cd, Cr, Co, Pb, Li, Mo, So, Tl	Clad KUDDO 1 Gas 8/23/41	1136 Noclia Wheeler Reve 8/23/14	11 1136
		Malia Munan loves 8/23/19	1530 Cherkin Gleg, 2922	
		Chinken Helo 28/20/19	acis Churls find Bull	41820 123 X X X
Pa	140#:2622402	Sourcester Annue Annue Annue		
ige 13		PRINT Name of SAMPLER:	Church Kusso	f bjęz et sq oq)
3 of 14		SIGNATURE OF SAMPLER:	and Rund Syda DATE Signed: 8/23/19	1EW Δοο 268/6 108 108 108 108 108 108 108 108
1				

			H · 262240	12
San	nple Condition Upon Re	eceir NO	# · 2022-	te: 09/04/1
	$\rho \wedge \rho = 1$	10 PM:	BM DUE DA	
Pace Analytical Client Name	: CAPOWEr(C	CLIE	NT: GAPower-CCR	
	A		Optional	
rier: 🔲 Fed Ex 🗌 UPS 🗌 USPS 🗍 Clie	nt 🗌 Commercial 🗶 Pace	Other	Proj Due Date: Proj Name:	
rier:			0	
Cooler/Box Present:				
king Material: Bubble Wrap Bubbl	e Bags 🗍 None 🗌 Other		Samples on ice, cooling proc	ess has begun
cking Material. D JL	Type of Ice: Wet Blue		Date and Initial 97 per	n examining
ermometer Used	Biological Tissue is Frozen	Yes NU	contents:	42007
oler Temperature	Commen	115.		
hain of Custody Present:	Tyes INO IN/A 1.			
nain of Custody Filled Out:	BYes INO IN/A 2.			
hain of Custody Relinquished:	Dres INO IN/A 3.			
ampler Name & Signature on COC:	Tes INO IN/A 4.			
amples Arrived within Hold Time:	Pres INO IN/A 5.			
hort Hold Time Analysis (<72hr):	□Yes ENO □N/A 6.			
Rush Turn Around Time Requested:	Yes No N/A 7.			
Sufficient Volume:	Bres INO IN/A 8.			
Correct Containers Used:	DIES DNO DN/A 9.			
-Pace Containers Used:				
Containers Intact:	ZYes DNO DN/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	d. EYes DNo DN/A 13.			
All containers needing preservation are found to be				
compliance with EPA recommendation.				
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes BNo Initial w		Lot # of added preservative	
Samples checked for dechlorination:	Yes No NTA 14.			
Headspace in VOA Vials (>6mm):	□Yes □No □N/A 15.			
Trip Blank Present:	□Yes □No □₩/A 16.			
Trip Blank Custody Seals Present				
Pace Trip Blank Lot # (if purchased):	J			
Client Notification/ Resolution:			Field Data Required?	Y / N
Person Contacted:	Date/Time:			ļ
Comments/ Resolution:				
Froject manager Review:			Date:	
lote: Whenever there is a discrepancy affecting No-	th Carely			
ote: Whenever there is a discrepancy affecting Nor ertification Office (i.e. out of hold, incorrect preserve	th Carolina compliance samples, a co	PPY Of this form		
Project Manager Review:	th Carolina compliance samples, a co tive, out of temp, incorrect containers	Ppy of this form will 5)	be sent to the M	



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

September 25, 2019

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

RE: Project: Plant Hammond AP GW6581 Pace Project No.: 2622403

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 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,

Batery Mr Damil

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.: 2622403

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



SAMPLE SUMMARY

Project: Plant Hammond AP GW6581

Pace Project No.: 2622403

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622403001	HGWC-107	Water	08/23/19 09:35	08/26/19 18:30
2622403002	HGWC-109	Water	08/23/19 10:40	08/26/19 18:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond AP GW6581Pace Project No.:2622403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622403001	HGWC-107	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622403002	HGWC-109	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581

Pace Project No.: 2622403

Sample: HGWC-107 PWS:	Lab ID: 26224030 Site ID:	01 Collected: 08/23/19 09:35 Sample Type:	Received:	08/26/19 18:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		0.502 ± 0.296 (0.407) C:90% T:NA	pCi/L	09/18/19 08:33	7 13982-63-3	
Radium-228	EPA 9320	1.19 ± 0.482 (0.736) C:74% T:73%	pCi/L	09/20/19 11:54	15262-20-1	
Total Radium	Total Radium Calculation	1.69 ± 0.778 (1.14)	pCi/L	09/23/19 12:5	5 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Hammond AP GW6581

Pace Project No.: 2622403

Sample: HGWC-109 PWS:	Lab ID: 26224030 Site ID:	Collected: 08/23/19 10:40 Sample Type:	Received:	08/26/19 18:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.201 ± 0.209 (0.390) C:91% T:NA	pCi/L	09/18/19 09:5	7 13982-63-3	
Radium-228	EPA 9320	0.269 ± 0.262 (0.531) C:80% T:84%	pCi/L	09/20/19 11:54	4 15262-20-1	
Total Radium	Total Radium Calculation	0.470 ± 0.471 (0.921)	pCi/L	09/24/19 10:3 ⁻	1 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond /	AP GW6581				
Pace Project No .:	2622403					
QC Batch:	359964		Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315		Analysis Description:	9315 Total Radiu	m	
Associated Lab Sa	mples: 2622403	001, 2622403002				
METHOD BLANK:	1747386		Matrix: Water			
Associated Lab Sa	mples: 2622403	001, 2622403002				
Para	meter	Act ± Unc	c (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.204 ± 0.233 (0.4	72) C:94% T:NA	pCi/L	09/18/19 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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond A	AP GW6581				
Pace Project No.:	2622403					
QC Batch:	359966		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 228		
Associated Lab Sar	mples: 26224030	001, 2622403002				
METHOD BLANK:	1747390		Matrix: Water			
Associated Lab Sar	mples: 26224030	001, 2622403002				
Para	meter	Act ± Unc	c (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.232 ± 0.311 (0.6	64) C:77% T:89%	pCi/L	09/20/19 11:52	

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



QUALIFIERS

Project: Plant Hammond AP GW6581

Pace Project No.: 2622403

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond AP GW6581Pace Project No.:2622403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622403001	HGWC-107	EPA 9315	359964		
2622403002	HGWC-109	EPA 9315	359964		
2622403001	HGWC-107	EPA 9320	359966		
2622403002	HGWC-109	EPA 9320	359966		
2622403001	HGWC-107	Total Radium Calculation	362632		
2622403002	HGWC-109	Total Radium Calculation	362817		

Face Analytical

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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Company.	Georgia Power - Coal Combustion Residuals	Report To	Joju Ab	raharn / L	Joju Abraharn / Lauren Petty			Ī	Attention	SCS	invoic	scsinvoices@southernco.com	uthern	0.00	Ε			Γ								
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Phone:		Project Name Plant Hammond AP	đ	ant Hamn	AP prot			P.	ice Proje	Pace Project Manager	oger.	betsy.	betsy mcdaniel@pacelabs.com,	10pac	slabs.cc	Ĕ					State	State / Location	u			
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ourier: 🗍 Fed Ex 🗌 UPS 🗌 USPS 🗍 Clien racking #:	t Commercial	Pace Other	Optional Proj. Due Dat Proj. Name:	8 :
ustody Seal on Cooler/Box Present:	no Seals	intact: 🖵 yes	no interesting	
acking Material: 🗌 Bubble Wrap 🛛 Bubble nermometer Used 244	Bags None Type of Ice: Wet	Other Blue None	Samples on ice, cooling p	rocess has begun
poler Temperature 3, 3 C		is Frozen: Yes No Comments:	Date and Initiate of p contents:	erson examining
nain of Custody Present:		1.		
nain of Custody Filled Out:		2.		
nain of Custody Relinquished:		3.		
ampler Name & Signature on COC:		4		
amples Arrived within Hold Time:		5.		
hort Hold Time Analysis (<72hr):		6.		
ush Turn Around Time Requested:		7.		
ufficient Volume:		8.		
prrect Containers Used:	Dres DNO DN/A	9.		
-Pace Containers Used:				
ontainers Intact:	Ves ONO ON/A	10.		
Itered volume received for Dissolved tests		. 11.		1
ample Labels match COC:		12.		
-Includes date/time/ID/Analysis Matrix:	_W			
I containers needing preservation have been checked.		13.		
Il containers needing preservation are found to be in ompliance with EPA recommendation.				
xceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes BNo	Initial when completed	Lot # of added preservative	
amples checked for dechlorination:				
eadspace in VOA Vials (>6mm):		15.		1
rip Blank Present:		16.		
rip Blank Custody Seals Present	□Yes □No ☑	ł		
Pace Trip Blank Lot # (if purchased):				
			Field Data Required?	Y / N
Client Notification/ Resolution:	Date	/Time:		
Person Contacted: Comments/ Resolution:	······································	·····		
				:
Project Manager Review:			Date:	a de la companya de l

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the Nor Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

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

December 16, 2019

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

RE: Project: PLANT HAMMOND Pace Project No.: 2624787

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 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,

Kein Hung

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.: 2624787

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



SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624787

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624787001	HGWA-111	Water	10/21/19 15:45	10/22/19 09:57



SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND Pace Project No.: 2624787

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624787001	HGWA-111	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3



ANALYTICAL RESULTS

Project: PLANT HAMMOND

Pace Project No.: 2624787

Sample: HGWA-111	Lab ID:	2624787001	Collect	ed: 10/21/19	9 15:45	Received: 10/	22/19 09:57 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Falameters		Units					Analyzeu	CAS NO.	Quai
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: El	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	10/28/19 20:04	10/29/19 20:48	7440-38-2	
Barium	0.033	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 20:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/28/19 20:04	10/29/19 20:48	7440-41-7	
Boron	0.0097J	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 20:48	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/28/19 20:04	10/29/19 20:48	7440-43-9	
Calcium	51.0	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 20:54	7440-70-2	
Chromium	0.0012J	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 20:48	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 20:48	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 20:48	7439-92-1	
Lithium	0.0026J	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 20:48	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	187	mg/L	10.0	10.0	1		10/28/19 13:57		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.9	mg/L	1.0	0.024	1		10/29/19 19:03	16887-00-6	
Fluoride	0.12J	mg/L	0.30	0.029	1		10/29/19 19:03	16984-48-8	
Sulfate	1.8	mg/L	1.0	0.017	1		10/29/19 19:03	14808-79-8	



Project: PLANT HAMMOND

Pace Project No.: 2624787

QC Batch: 37696		Analysis Meth	nod: EPA	6020B		
QC Batch Method: EPA 3005	5A	Analysis Dese	cription: 6020	DB MET		
Associated Lab Samples: 26	24787001					
METHOD BLANK: 171182		Matrix:	Water			
Associated Lab Samples: 26	24787001					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	10/29/19 19:20	
Barium	mg/L	ND	0.010	0.00049	10/29/19 19:20	
Beryllium	mg/L	ND	0.0030	0.000074	10/29/19 19:20	
Boron	mg/L	ND	0.040	0.0049	10/29/19 19:20	
Cadmium	mg/L	ND	0.0025	0.00011	10/29/19 19:20	
Calcium	mg/L	ND	0.10	0.011	10/29/19 19:20	
Chromium	mg/L	ND	0.010	0.00039	10/29/19 19:20	
Cobalt	mg/L	ND	0.0050	0.00030	10/29/19 19:20	
Lead	mg/L	ND	0.0050	0.000046	10/29/19 19:20	
Lithium	mg/L	ND	0.030	0.00078	10/29/19 19:20	

LABORATORY CONTROL SAMPLE: 171183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1 didineter				/01100		Qualifiero
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Lead	mg/L	0.1	0.11	106	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1711	84		171185							
Parameter	Units	2624794002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0046J	0.1	0.1	0.097	0.098	93	93	75-125	0	20	
Barium	mg/L	0.35	0.1	0.1	0.46	0.46	108	109	75-125	0	20	
Beryllium	mg/L	0.000078J	0.1	0.1	0.090	0.091	90	91	75-125	1	20	
Boron	mg/L	1.1	1	1	1.9	1.9	78	81	75-125	1	20	
Cadmium	mg/L		0.1	0.1	0.086	0.085	86	85	75-125	1	20	
Calcium	mg/L	260	1	1	269	272	841	1200	75-125	1	20	
Chromium	mg/L	0.0019J	0.1	0.1	0.11	0.11	104	103	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.095	0.094	95	94	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.096	95	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

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Project: PLANT HAMMOND Pace Project No.: 2624787

MATRIX SPIKE & MATRIX SP	PIKE DUPL	ICATE: 1711	84		171185							
			MS	MSD								
		2624794002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Lithium	mg/L	0.096	0.1	0.1	0.20	0.20	101	102	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.



Project:	PLANT HAMMOND								
Pace Project No.: QC Batch:	2624787 		Analysia	lathad:	SM 2540C				
QC Batch Method:	37642 SM 2540C		Analysis M	Description:	2540C Total D	Viscolvod Soliv	łc		
Associated Lab Sar		I	Analysis L	escription.	23400 10tal L		12		
LABORATORY CO	NTROL SAMPLE: 1	70927							
			Spike	LCS	LCS	% Rec			
Para	meter	Units	Conc.	Result	% Rec	Limits	Qu	ualifiers	
Total Dissolved Sol	ids	mg/L	400	377	94	84-10	8		
SAMPLE DUPLICA	TE: 170928								
			2624784001	Dup		Ma			
Para	meter	Units	Result	Result	RPD	RP	D	Qualifiers	
Total Dissolved Sol	ids	mg/L	29	96 2	297	0	10		
SAMPLE DUPLICA	TE: 170929								
			2624685010) Dup		Ma	x		
Parar	meter	Units	Result	Result	RPD	RP	D	Qualifiers	
Total Dissolved Sol	ids	mg/L		17 8	313	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.



Project: PLANT HAMMOND

Pace Project No.: 2624787

QC Batch: 37730		Analysis M	ethod:	EPA 300.0				
QC Batch Method: EPA 300.0		Analysis De	escription:	300.0 IC An	ions			
Associated Lab Samples: 262478	7001							
METHOD BLANK: 171248		Matrix	k: Water					
Associated Lab Samples: 262478	7001							
Parameter	Units	Blank Result	Reporting Limit	9 MD	L	Analyze	ed	Qualifiers
Chloride	mg/L	0.034	J	1.0	0.024	10/29/19 1	3:23	
Fluoride	mg/L	NE) 0	.30	0.029	10/29/19 1	3:23	
Sulfate	mg/L	NE)	1.0	0.017	10/29/19 1	3:23	
LABORATORY CONTROL SAMPLE	171249							
		Spike	LCS	LCS	9	% Rec		
Parameter	Units	Conc.	Result	% Rec	I	Limits	Qualifi	iers
Chloride	mg/L		10.5	10	5	90-110		
Fluoride	mg/L	10	10.8	10	8	90-110		
Sulfate	mg/L	10	10.5	10	5	90-110		

MATRIX SPIKE & MATRIX SP	PIKE DUPL	ICATE: 1712	50		171251							
		2624505001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	57.2	20	20	75.8	74.8	93	88	90-110	1	15	M1
Fluoride	mg/L	1.7	20	20	20.7	21.6	95	100	90-110	4	15	
Sulfate	mg/L	ND	20	20	ND	ND	0	0	90-110		15	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.



QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624787

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND Pace Project No.: 2624787

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624787001	HGWA-111	EPA 3005A	37696	EPA 6020B	37751
2624787001	HGWA-111	SM 2540C	37642		
2624787001	HGWA-111	EPA 300.0	37730		

WO# : 2624787		and a second stand of the production of the second s		stand stand stand and the same stand stands and stands and stands and stands and stands and stands and stands a GA			(N/A)	Residual Chlome	2							Ź	TINE STATE	A A A ggLsboh		ио р	MP in (N) (N) (N) (N) (N)	1013 88 100 100 100 100 1013 1013 1013 1
fical Ringu	strace.com			belsy modaniel@pacelabs.com,	NAMES AND DESCRIPTION OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTION O	2		Methanol Othet App. II Metals (1) TDS, CI, F, SOd Red um 226/228	7 7 7 4								synolity. Are instruction	Poce 10.22,19			NATE Signad: 1 4 / 4 / 4 /	UNIC SUBJURY 1 0/21/10
WO# : 2624788	Attention: scsinvolces@southe	Company Name: Address:	Pace Quote:	Pace Project Manager: betsy.r	F .	Preservatives		HILPEREDUT	15451071 3			CO AIN						10/21 1820 7-1		國國		SIGNATURE OF SAMPLER. Clark RUNDO
oject Information:	o: Joju Abraham		9 Order #: SCS10382775	Project Name: Plant Hammond		(Hel of	ed&BB C=C	ек) ЭООЭ (ек) (о) (о) ЭТС ЭТКР (с) С) С) С) С) С) С) С) С) С) С) С) С) С)	1535 19/21		/	/					(interview)	Red ausside 900 10		jan an a		SIGNATURE OF SI
	Π			Fax				CAUTLE ID Common of the Character per box. When when when when when when when when w	HGWA-III	/							ADDRESS CONTRACTOR	(1) App. III Metals = 8, Ca	(2, AP-4) App. N Metals = As, Ba, Be, Cd, Cr, Co. Pb. Li		4	
			ق. ا	Phone:	national			₩MƏTI	國際		9	6.21	0	(B)	ar:			(1) App. III A	(2, AP-4) A	Pag	ie 12	2 of 1

Page 12 of 13

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WO# · A	2624787	1.5	0#:2624788
Pace Analytical PM: BM CLIENT: GA			: BM Due Date: 11/19/19 IENT: GAPower-CCR
			Proj Due Date;
cking #: stody Seal on Cooler/Box Present: yes		tact: 🗌 ye	Proj. Name:
cking Material: Bubble Wrap Bubble	Type of Ice: Wet		Samples on ice, cooling process has begun
ermometer Used THR 214	Biological Tissue is		Date and initials of person examining
oler Temperature	•	Comments:	contents:
ain of Custody Present:	Dres DNO DN/A 1		
ain of Custody Filled Out:			· · · · · · · · · · · · · · · · · · ·
ain of Custody Relinquished:			
ampler Name & Signature on COC:		·····	
amples Arrived within Hold Time:			
nort Hold Time Analysis (<72hr):		6	
ush Turn Around Time Requested:	TYes DNO DNA		1
ufficient Volume:		8.	
orrect Containers Used:	ZYes No N/A	9.	
-Pace Containers Used:	Elyes DNO DNA	-	
containers Intact:		10.	
iltered volume received for Dissolved tests		11.	
ample Labels match COC:		12.	
-Includes date/time/ID/Analysis Matrix:			
Il containers needing preservation have been checked.		13.	
Il containers needing preservation are found to be in ompliance with EPA recommendation.			Lot # of added
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes □No	Initial when completed	preservative
Samples checked for dechlorination:		14.	
Headspace in VOA Vials (>6mm):			
Trip Blank Present:			
Trip Blank Custody Seals Present		~	*
Pace Trip Blank Lot # (if purchased):	· 3		8
			Field Data Required? Y / N
Client Notification/ Resolution:	Date	e/Time:	
Person Contacted:			
Comments/ Resolution:			
	(4)	<u></u>	14 E
			3000 W28
1998 g			

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 19, 2019

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

RE: Project: PLANT HAMMOND Pace Project No.: 2624788

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 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,

Batery Mr Damil

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.: 2624788

Pace Analytical Services Pennsylvania

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



SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624788

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624788001	HGWA-111	Water	10/21/19 15:45	10/22/19 09:57



SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND Pace Project No.: 2624788

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624788001	HGWA-111	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT HAMMOND

Pace Project No.: 2624788

Sample: HGWA-111 PWS:	Lab ID: 26247880 Site ID:	Collected: 10/21/19 15:45 Sample Type:	Received:	10/22/19 09:57	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.351 ± 0.311 (0.591) C:74% T:NA	pCi/L	11/15/19 08:32	2 13982-63-3	
Radium-228	EPA 9320	-0.102 ± 0.278 (0.674) C:77% T:90%	pCi/L	11/12/19 12:18	5 15262-20-1	
Total Radium	Total Radium Calculation	0.351 ± 0.589 (1.27)	pCi/L	11/18/19 14:56	6 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	PLANT HAMMON	D			
Pace Project No.:	2624788				
QC Batch:	369306	Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 22	8	
Associated Lab Sar	mples: 26247880	01			
METHOD BLANK:	1791694	Matrix: Water			
Associated Lab Sar	mples: 26247880	01			
Para	neter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.317 ± 0.325 (0.673) C:79% T:91%	pCi/L	11/12/19 12:14	

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



QUALITY CONTROL - RADIOCHEMISTRY

Project:	PLANT HAMMON	D			
Pace Project No.:	2624788				
QC Batch:	369307	Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radi	ium	
Associated Lab Sar	mples: 26247880	01			
METHOD BLANK:	1791695	Matrix: Water			
Associated Lab Sar	mples: 26247880	01			
Parar	neter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.330 ± 0.234 (0.359) C:92% T:NA	pCi/L	11/15/19 08:32	

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



QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624788

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND Pace Project No.: 2624788

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624788001	HGWA-111	EPA 9315	369307		
2624788001	HGWA-111	EPA 9320	369306		
2624788001	HGWA-111	Total Radium Calculation	371524		

Page 10 of 11

WO# : 2	2624787	0#:2624788		
Pace Analytical PM: BM CLIENT: GA		0/29/19	: BM Due Date: 11/19/19 IENT: GAPower-CCR	
		1-400 -0	Proj. Due Date;	
cking #:stody Seal on Cooler/Box Present:yes	no Seals inta	ct: 🗌 ves	Proj-Name:	
ermometer Used	Type of Ice: Wet E		Samples on ice, cooling process has begun	
	Biological Tissue is F		Date and Initials of ners on examining	
oler Temperature	-	mments:	contents:	
ain of Custody Present:	Pres DNO DN/A 1.			
ain of Custody Filled Out:	Ves INO IN/A 2.		· · · · · · · · · · · · · · · · · · ·	
nain of Custody Relinquished:	Pres DNO DN/A 3.			
ampler Name & Signature on COC:	Pres DNO DN/A 4.			
amples Arrived within Hold Time:	EYes DNO DN/A 5.			
hort Hold Time Analysis (<72hr):	TYes TNO DN/A 6.			
ush Turn Around Time Requested:	DYes DNO DN/A 7.		/	
ufficient Volume:	TYes DNO DN/A 8			
orrect Containers Used:	ZYes DNO DN/A 9			
-Pace Containers Used:				
Containers Intact:	Pres DNO DN/A 1	0.		
iltered volume received for Dissolved tests		1.		
Sample Labels match COC:	Ves ONO ON/A 1			
-Includes date/time/ID/Analysis Matrix:				
Il containers needing preservation have been checked.		13.		
Il containers needing preservation are found to be in compliance with EPA recommendation.			Li a tradici della d	
exceptions; VOA, coliform, TOC, O&G, WI-DRO (water)		nitial when completed	Lot # of added preservative	
Samples checked for dechlorination:	Yes INO IN/A	14.		
Headspace in VOA Vials (>6mm):	Yes No 211/A			
Trip Blank Present:				
Trip Blank Custody Seals Present			· •	
Pace Trip Blank Lot # (if purchased):			2	
			Field Data Required? Y / N	
Client Notification/ Resolution:	Data	Timo		
Person Contacted:				
Comments/ Resolution:				
			3000 W28	
			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 21, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2624791

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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.

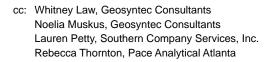
If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Batery Mr Damil

Betsy McDaniel betsy.mcdaniel@pacelabs.com (770)734-4200 Project Manager

Enclosures







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

CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2624791

Pace Analytical Services Pennsylvania

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



SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2624791

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624791001	HGWC-101	Water	10/23/19 11:30	10/24/19 10:07
2624791002	HGWC-102	Water	10/23/19 09:40	10/24/19 10:07
2624791003	HGWC-105	Water	10/23/19 09:17	10/24/19 10:07
2624791004	HGWC-103	Water	10/23/19 11:36	10/24/19 10:07



SAMPLE ANALYTE COUNT

Project: Plant Hammond Pace Project No.: 2624791

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624791001	HGWC-101	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624791002	HGWC-102	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624791003	HGWC-105	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624791004	HGWC-103	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



Project: Plant Hammond

Pace Project No.: 2624791

Sample: HGWC-101 PWS:	Lab ID: 26247910 Site ID:	Collected: 10/23/19 11:30 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.182 ± 0.199 (0.390) C:90% T:NA	pCi/L	11/15/19 10:17	7 13982-63-3	
Radium-228	EPA 9320	0.594 ± 0.484 (0.965) C:78% T:87%	pCi/L	11/12/19 17:49	9 15262-20-1	
Total Radium	Total Radium Calculation	0.776 ± 0.683 (1.36)	pCi/L	11/19/19 09:18	3 7440-14-4	



Project: Plant Hammond

Pace Project No.: 2624791

Sample: HGWC-102 PWS:	Lab ID: 26247910 Site ID:	Collected: 10/23/19 09:40 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.252 ± 0.219 (0.392) C:93% T:NA	pCi/L	11/15/19 10:17	7 13982-63-3	
Radium-228	EPA 9320	0.606 ± 0.539 (1.09) C:84% T:71%	pCi/L	11/12/19 17:49	9 15262-20-1	
Total Radium	Total Radium Calculation	0.858 ± 0.758 (1.48)	pCi/L	11/19/19 09:18	3 7440-14-4	



Project: Plant Hammond

Pace Project No.: 2624791

Sample: HGWC-105 PWS:	Lab ID: 26247910 Site ID:	Collected: 10/23/19 09:17 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.387 ± 0.259 (0.398) C:91% T:NA	pCi/L	11/15/19 10:17	7 13982-63-3	
Radium-228	EPA 9320	0.197 ± 0.465 (1.03) C:82% T:78%	pCi/L	11/12/19 17:49	9 15262-20-1	
Total Radium	Total Radium Calculation	0.584 ± 0.724 (1.43)	pCi/L	11/19/19 09:18	3 7440-14-4	



Project: Plant Hammond

Pace Project No.: 2624791

Sample: HGWC-103 PWS:	Lab ID: 26247910 Site ID:	Collected: 10/23/19 11:36 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.571 ± 0.291 (0.358) C:92% T:NA	pCi/L	11/15/19 10:17	7 13982-63-3	
Radium-228	EPA 9320	-0.102 ± 0.382 (0.914) C:85% T:85%	pCi/L	11/12/19 17:50) 15262-20-1	
Total Radium	Total Radium Calculation	0.571 ± 0.673 (1.27)	pCi/L	11/19/19 09:18	3 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond					
Pace Project No.:	2624791					
QC Batch:	369310	Ar	alysis Method:	EPA 9315		
QC Batch Method	EPA 9315	Ar	alysis Description:	9315 Total Radium		
Associated Lab Sa	amples: 262479100 ²	l, 2624791002, 262479 ⁻	1003, 2624791004			
METHOD BLANK	1791698		Matrix: Water			
Associated Lab Sa	amples: 262479100 ⁻	l, 2624791002, 262479 [.]	1003, 2624791004			
Para	ameter	Act ± Unc (MD	C) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0	.590 ± 0.307 (0.405) C	:93% T:NA	pCi/L	11/15/19 07:34	

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



QUALITY CONTROL - RADIOCHEMISTRY

Project:	Plant Hammond					
Pace Project No.:	2624791					
QC Batch:	369311		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 228		
Associated Lab Sa	mples: 2624791	001, 2624791002	2, 2624791003, 2624791004			
METHOD BLANK:	1791699		Matrix: Water			
Associated Lab Sa	mples: 2624791	001, 2624791002	2, 2624791003, 2624791004			
Para	meter	Act ±	Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.174 ± 0.362	(0.799) C:80% T:87%	pCi/L	11/12/19 15:54	

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



QUALIFIERS

Project: Plant Hammond Pace Project No.: 2624791

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No .:	2624791

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624791001	HGWC-101	EPA 9315	369310		
2624791002	HGWC-102	EPA 9315	369310		
2624791003	HGWC-105	EPA 9315	369310		
2624791004	HGWC-103	EPA 9315	369310		
2624791001	HGWC-101	EPA 9320	369311		
2624791002	HGWC-102	EPA 9320	369311		
2624791003	HGWC-105	EPA 9320	369311		
2624791004	HGWC-103	EPA 9320	369311		
2624791001	HGWC-101	Total Radium Calculation	371617		
2624791002	HGWC-102	Total Radium Calculation	371617		
2624791003	HGWC-105	Total Radium Calculation	371617		
2624791004	HGWC-103	Total Radium Calculation	371617		

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

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

March 12, 2020

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

RE: Project: Plant Hammond Pace Project No.: 2624792

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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,

Kein Hung

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.: 2624792

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



SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2624792

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624792001	HGWC-101	Water	10/23/19 11:30	10/24/19 10:07
2624792002	HGWC-102	Water	10/23/19 09:40	10/24/19 10:07
2624792003	HGWC-105	Water	10/23/19 09:17	10/24/19 10:07
2624792004	HGWC-103	Water	10/23/19 11:36	10/24/19 10:07



SAMPLE ANALYTE COUNT

Project: Plant Hammond Pace Project No.: 2624792

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624792001	HGWC-101	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624792002	HGWC-102	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624792003	HGWC-105	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624792004	HGWC-103	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3



Project: Plant Hammond

Pace Project No.: 2624792

Sample: HGWC-101	Lab ID:	2624792001	Collecte	ed: 10/23/19	9 11:30	Received: 10/	24/19 10:07 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 02:50	7440-38-2	
Barium	0.043	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 02:50	7440-39-3	
Beryllium	0.000075J	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 13:31	7440-41-7	
Boron	0.10	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 02:50	7440-42-8	
Cadmium	0.00020J	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 02:50	7440-43-9	
Calcium	21.9	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 02:55	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 02:50	7440-47-3	
Cobalt	0.0023J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 02:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 02:50	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:31	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	221	mg/L	10.0	10.0	1		10/29/19 13:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	5.5	mg/L	1.0	0.024	1		10/31/19 06:50	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/31/19 06:50	16984-48-8	
Sulfate	101	mg/L	10.0	0.17	10		10/31/19 17:35	14808-79-8	



Project: Plant Hammond

Pace Project No.: 2624792

Sample: HGWC-102	Lab ID:	2624792002	Collecte	ed: 10/23/19	9 09:40	Received: 10/	/24/19 10:07 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	11/01/19 16:00	11/04/19 03:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 03:01	7440-38-2	
Barium	0.037	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 03:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 13:37	7440-41-7	
Boron	3.1	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 03:01	7440-42-8	
Cadmium	0.00026J	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 03:01	7440-43-9	
Calcium	136	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 03:07	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 03:01	7440-47-3	
Cobalt	0.0018J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 03:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 03:01	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:37	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 03:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/01/19 16:00	11/04/19 03:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	11/01/19 16:00	11/04/19 03:01	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	10/29/19 09:50	10/29/19 16:05	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	736	mg/L	10.0	10.0	1		10/29/19 13:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	7.9	mg/L	1.0	0.024	1		10/31/19 07:13	16887-00-6	
Fluoride	0.22J	mg/L	0.30	0.029	1		10/31/19 07:13	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/31/19 07:13	14808-79-8	



Project: Plant Hammond

Pace Project No.: 2624792

Sample: HGWC-105	Lab ID:	2624792003	Collect	ed: 10/23/19	9 09:17	Received: 10/	/24/19 10:07 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: El	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 03:24	7440-38-2	
Barium	0.066	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 03:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 13:42	7440-41-7	
Boron	1.3	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 13:42	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 03:24	7440-43-9	
Calcium	89.4	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 03:30	7440-70-2	
Chromium	0.00040J	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 03:24	7440-47-3	
Cobalt	0.00038J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 03:24	7440-48-4	
Lead	0.000068J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 03:24	7439-92-1	
Lithium	0.0039J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:42	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	419	mg/L	10.0	10.0	1		10/29/19 13:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	3.6	mg/L	1.0	0.024	1		10/31/19 07:35	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/31/19 07:35	16984-48-8	
Sulfate	162	mg/L	10.0	0.17	10		10/31/19 17:58	14808-79-8	



Project: Plant Hammond

Pace Project No.: 2624792

Sample: HGWC-103	Lab ID:	2624792004	Collect	ed: 10/23/19	9 11:36	Received: 10/	/24/19 10:07 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: El	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 03:35	7440-38-2	
Barium	0.039	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 03:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 13:48	7440-41-7	
Boron	2.3	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 13:48	7440-42-8	
Cadmium	0.00091J	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 03:35	7440-43-9	
Calcium	86.5	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 03:41	7440-70-2	
Chromium	0.0015J	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 03:35	7440-47-3	
Cobalt	0.0021J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 03:35	7440-48-4	
Lead	0.00043J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 03:35	7439-92-1	
Lithium	0.0020J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:48	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	507	mg/L	10.0	10.0	1		10/29/19 13:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	6.1	mg/L	1.0	0.024	1		10/31/19 07:57	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/31/19 07:57	16984-48-8	
Sulfate	248	mg/L	10.0	0.17	10		10/31/19 18:20	14808-79-8	



Pace Project No.: 2624792 QC Batch: 37720 Analysis Method: EPA 7470A QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury Associated Lab Samples: 2624792002 Matrix: Water Associated Lab Samples: 2624792002 METHOD BLANK: 171214 Matrix: Water Analyzed Qualifiers Parameter Units Result Limit MDL Analyzed Qualifiers Mercury mg/L ND 0.00050 0.00014 10/29/19 15:19 Matrix: LABORATORY CONTROL SAMPLE: 171215 Imits Conc. Result % Rec Limits Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 Matrix MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171217 MS MSD MSD % Rec Max Max Parameter Units Result Conc. Conc. Result % Rec Limits PB PAP PA MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171217 MS MSD Spike Spike	Project:	Plant Hammond											
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury Associated Lab Samples: 2624792002 Matrix: Water METHOD BLANK: 171214 Matrix: Water Associated Lab Samples: 2624792002 Blank Reporting Parameter Units Blank Reporting MDL Analyzed Qualifiers Mercury mg/L ND 0.00050 0.00014 10/29/19 15:19 Qualifiers LABORATORY CONTROL SAMPLE: 171215 Spike LCS LCS % Rec Limits Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 Matrix: Matrix MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD MSD % Rec Max Parameter Units 2624786001 Spike Spike MS MSD MSD % Rec Limits RPD RPD Qualifiers Matrix: Spike Spike Spike MS MSD % Rec Limits RPD RPD Qualifiers Qualifiers Qu	Pace Project No.:	2624792											
Associated Lab Samples: 2624792002 METHOD BLANK: 171214 Associated Lab Samples: 2624792002 Parameter Units Reporting Mercury mg/L ND 0.00050 0.00014 10/29/19 15:19 LABORATORY CONTROL SAMPLE: 171215 Parameter Units Conc. Result % Rec Limits Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qualifiers MS MSD Result % Rec MS MSD % Rec Max Max Result % Rec MS MSD % Rec Max Max Result % Rec % Rec Limits RPD RPD Qualifiers RPD	QC Batch:	37720		Analy	sis Meth	od:	EPA 7470A						
METHOD BLANK: 171214 Matrix: Water Associated Lab Samples: 2624792002 Blank Reporting Parameter Units Result Limit MDL Analyzed Qualifiers Mercury mg/L ND 0.00050 0.00014 10/29/19 15:19 LABORATORY CONTROL SAMPLE: 171215 Spike LCS LCS % Rec Multitis Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 0.0021 0.0025 0.0026 105 80-120 0.0021 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171217 MS MSD MSD MSD % Rec Max Parameter Units Result Conc. Result MSD MSD MSD % Rec Max MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD MSD % Rec Max Parameter Units Result Conc. Conc. Result % Rec Max RPD RPD RPD RPD RPD Quinitis RPD RPD	QC Batch Method:	EPA 7470A		Analy	sis Desc	ription:	7470 Mercu	ıry					
Associated Lab Samples: 2624792002 Parameter Units Result Limit MDL Analyzed Qualifiers Mercury mg/L ND 0.00050 0.00014 10/29/19 15:19 Qualifiers LABORATORY CONTROL SAMPLE: 171215 LCS Kec Limits Qualifiers Parameter Units Conc. Result % Rec Limits Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 Max Matrix SPIKE & MATRIX SPIKE DUPLICATE: 171217 171217 Max Max Parameter Units Result Conc. Result MSD MSD MSD % Rec Limits Parameter Max Parameter Units Result Conc. Conc. Result % Rec % Rec Limits RPD RPD Qualifiers	Associated Lab Sar	mples: 262479200)2										
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Parameter Units Result Limit MDL Analyzed Qualifiers Mercury mg/L ND 0.00050 0.00014 10/29/19 15:19 Qualifiers LABORATORY CONTROL SAMPLE: 171215 Spike LCS LCS % Rec Qualifiers Parameter Units Conc. Result % Rec Limits Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 Matrix MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD MSD MSD % Rec Limits RPD Max Parameter Units Result Conc. Conc. Result % Rec % Rec Limits RPD Qualifiers	Associated Lab Sar	mples: 262479200)2										
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LABORATORY CONTROL SAMPLE: 171215 Parameter Units Spike LCS % Rec Mercury mg/L 0.0025 0.0026 105 80-120 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD MSD MSD % Rec Max Parameter Units 2624786001 Spike Spike MS MSD MSD % Rec Max Parameter Units Result Conc. Conc. Result % Rec % Rec Max	Para	neter	Units	Resu	ult	Limit	MD	L	Analyze	d C	alifiers		
ParameterUnitsSpike Conc.LCS Result% Rec % RecQualifiersMercurymg/L0.00250.002610580-120MATRIX SPIKE & MATRIX SPIKE DUPLICATE:171216171217MSMSDMSDMSDMSDMSDParameterUnits2624786001SpikeSpikeMSMSDMatrixNitsResultConc.Conc.Result% Rec% RecMaxParameterUnitsResultConc.Conc.Result% Rec% RecMax	Mercury		mg/L		ND	0.0005	50 0	.00014	10/29/19 1	5:19			
Parameter Units Conc. Result % Rec Limits Qualifiers Mercury mg/L 0.0025 0.0026 105 80-120 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD MSD MSD MSD % Rec Max Parameter Units 2624786001 Spike Spike MS MSD % Rec % Rec Max Parameter Units Result Conc. Conc. Result % Rec % Rec Limits RPD Qualifiers	LABORATORY CO	NTROL SAMPLE:	171215										
Mercury mg/L 0.0025 0.0026 105 80-120 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD MSD MSD Parameter Units Result Conc. Conc. Result % Rec Max				Spike	L	CS	LCS	%	6 Rec				
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171216 171217 MS MSD 2624786001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qu	Parar	neter	Units	Conc.	Re	esult	% Rec	L	imits	Qualifiers			
MS MSD 2624786001 Spike Spike MS MSD MSD % Rec Max Parameter Units Result Conc. Conc. Result % Rec % Rec Limits RPD Question	Mercury		mg/L	0.002	5	0.0026	10	5	80-120				
2624786001 Spike MS MSD MSD % Rec Max Parameter Units Result Conc. Result Result % Rec Limits RPD Queen	MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 1712	:16		171217							
Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qu				MS	MSD								
						-	-	-	-				
Mercury mg/L 0.0027 0.0025 6 20	Paramete	r Units	Result	Conc.	Conc.	Result	Result	% Red	c % Rec	Limits	RPD	RPD	Qual
	Mercury	mg/L				0.0027	0.0025				6	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.



t Hammond

Pace Project No.:	2624792
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QC Batch: 3	8024	Analysis Method:	EPA 6020B
QC Batch Method: E	PA 3005A	Analysis Description:	6020B MET
Associated Lab Sample	es: 2624792001, 2624792002, 20	624792003, 2624792004	
METHOD BLANK: 17	2889	Matrix: Water	
Associated Lab Sample	es: 2624792001, 2624792002, 2	624792003, 2624792004	

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	11/04/19 01:12	
Arsenic	mg/L	ND	0.0050	0.00035	11/04/19 01:12	
Barium	mg/L	ND	0.010	0.00049	11/04/19 01:12	
Beryllium	mg/L	ND	0.0030	0.000074	11/04/19 01:12	
Boron	mg/L	0.0059J	0.040	0.0049	11/04/19 01:12	
Cadmium	mg/L	ND	0.0025	0.00011	11/04/19 01:12	
Calcium	mg/L	ND	0.10	0.011	11/04/19 01:12	
Chromium	mg/L	ND	0.010	0.00039	11/04/19 01:12	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 01:12	
_ead	mg/L	ND	0.0050	0.000046	11/04/19 01:12	
_ithium	mg/L	ND	0.030	0.00078	11/04/19 01:12	
Molybdenum	mg/L	ND	0.010	0.00095	11/04/19 01:12	
Selenium	mg/L	ND	0.010	0.0013	11/04/19 01:12	
Thallium	mg/L	ND	0.0010	0.000052	11/04/19 01:12	

LABORATORY CONTROL SAMPLE: 172890

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
vrsenic	mg/L	0.1	0.10	100	80-120	
arium	mg/L	0.1	0.10	103	80-120	
eryllium	mg/L	0.1	0.11	114	80-120	
oron	mg/L	1	1.2	116	80-120	
admium	mg/L	0.1	0.11	106	80-120	
alcium	mg/L	1	1.1	106	80-120	
hromium	mg/L	0.1	0.10	105	80-120	
obalt	mg/L	0.1	0.10	104	80-120	
ad	mg/L	0.1	0.10	102	80-120	
hium	mg/L	0.1	0.11	112	80-120	
blybdenum	mg/L	0.1	0.10	103	80-120	
elenium	mg/L	0.1	0.10	101	80-120	
hallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SP	PIKE DUPL	ICATE: 1728	91		172892							
			MS	MSD								
		2624772007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	106	104	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

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Project: Plant Hammond Pace Project No.: 2624792

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1728	-		172892							
			MS	MSD								
		2624772007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	2.5	0.1	0.1	2.6	2.6	43	106	75-125	2	20	M6
Barium	mg/L	0.22	0.1	0.1	0.32	0.31	99	98	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.090	0.086	90	86	75-125	5	20	
Boron	mg/L	4.3	1	1	5.1	5.2	85	95	75-125	2	20	
Cadmium	mg/L	0.00012J	0.1	0.1	0.11	0.10	107	103	75-125	4	20	
Calcium	mg/L	177	1	1	170	179	-693	243	75-125	5	20	M6
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.092	0.090	92	90	75-125	2	20	
Lithium	mg/L	0.29	0.1	0.1	0.36	0.36	73	75	75-125	1	20	M1
Molybdenum	mg/L	0.49	0.1	0.1	0.58	0.60	89	105	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.093	0.092	93	92	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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Project: Pace Project No.:	Plant Hammond 2624792									
QC Batch:	37735		Analysis N	lethod:	SM 2540C					
QC Batch Method:	SM 2540C		Analysis E	Description:	2540C Total [Dissolve	ed Solids			
Associated Lab Sar	mples: 26247920	01, 2624792002,	2624792003, 26	24792004						
LABORATORY CO	NTROL SAMPLE:	171263								
			Spike	LCS	LCS	%	Rec			
Parar	neter	Units	Conc.	Result	% Rec	Li	mits	Qu	ualifiers	
Total Dissolved Soli	ids	mg/L	400	402	100		84-108			
SAMPLE DUPLICA	TE: 171264									
_			2624800005	- 1			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	21	2 2	212	0		10		
SAMPLE DUPLICA	TE: 171265									
			2624792004	Dup			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	50)7 (512	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.



Project: Plant H Pace Project No.: 262479	ammond 2											
QC Batch: 37870)		Anal	ysis Metho	d: I	EPA 300.0						
QC Batch Method: EPA 3	00.0		Anal	ysis Descri	ption:	300.0 IC An	ions					
Associated Lab Samples:	262479200	1, 2624792002,	262479200	03, 262479	2004							
METHOD BLANK: 171906				Matrix: W	ater							
Associated Lab Samples:	262479200	1, 2624792002,	262479200	03, 262479	2004							
			Bla	nk	Reporting							
Parameter		Units	Res	ult	Limit	MD	L	Analyze	d Qı	alifiers	;	
Chloride		mg/L		ND	1.	0	0.024	10/31/19 04	4:37			
Fluoride		mg/L		ND	0.3	0	0.029	10/31/19 04	4:37			
Sulfate		mg/L		ND	1.0	0	0.017	10/31/19 04	4:37			
LABORATORY CONTROL S	SAMPLE:	171907										
			Spike	LC	-	LCS		% Rec				
Parameter		Units	Conc.	Res	sult	% Rec		Limits	Qualifiers	_		
Chloride		mg/L		5	4.8	9	-	90-110				
Fluoride		mg/L		5	5.0	10		90-110				
Sulfate		mg/L		5	5.1	10	1	90-110				
MATRIX SPIKE & MATRIX S		ICATE: 1719	08		171909							
			MS	MSD								
Parameter	Units	2624786002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Re	MSD c % Rec	% Rec Limits	RPD	Max RPD	Qua
Chloride	mg/L	3.2	10	10	13.0	13.2		97 10	0 90-110	2	15	
Fluoride	mg/L	0.56	10	10	10.6	10.9	1	100 10	3 90-110	3	15	
MATRIX SPIKE SAMPLE:		171910										
			2624	800005	Spike	MS		MS	% Rec			
Parameter		Units	Re	esult	Conc.	Result		% Rec	Limits		Qualif	fiers
Chloride		mg/L		4.6	10		14.7	101	90	-110		
Fluoride		mg/L		0.099J	10		10.6	105	5 90	-110		
Sulfate		mg/L		23.2	10		28.2	50) 90	-110 N	11	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond Pace Project No.: 2624792

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No .:	2624792

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624792001	HGWC-101	EPA 3005A	38024	EPA 6020B	38049
2624792002	HGWC-102	EPA 3005A	38024	EPA 6020B	38049
2624792003	HGWC-105	EPA 3005A	38024	EPA 6020B	38049
2624792004	HGWC-103	EPA 3005A	38024	EPA 6020B	38049
2624792002	HGWC-102	EPA 7470A	37720	EPA 7470A	37761
2624792001	HGWC-101	SM 2540C	37735		
2624792002	HGWC-102	SM 2540C	37735		
2624792003	HGWC-105	SM 2540C	37735		
2624792004	HGWC-103	SM 2540C	37735		
2624792001	HGWC-101	EPA 300.0	37870		
2624792002	HGWC-102	EPA 300.0	37870		
2624792003	HGWC-105	EPA 300.0	37870		
2624792004	HGWC-103	EPA 300.0	37870		

MORE: 2624.792 The formation of the for	And Constrained and a service of the	MO# : 2624.792 New Province New Province		\prod	(1) App 11	New York	12	3		7	8	et.	CA .	~	10,000	ITEM #]	Requeste	Phone	Email .	Address	Company	Section A Required		
Ching Projections PT T Lawrence Transmoot PT	Ching Projections PT T Lawrence Transmoot PT	If is 2 WO#: 2624792 WO#: 2624792 If is a set of the set	Υ.		(1) App III Metabs = B, Ca 2. AP-4) App IV Metals = An Ba, Ba, Ca, Cr. Co. Pb Li	ADDITIONAL COMMENTS							/				MATRI			(404)508-7239 Fax	adrahambaoahamoo com		George Power - Coel Combustion Residuels	A Client Information:	Face Anervical	2
MO# : 2624792 Were normality Reading the server of the	MO# : 2624792 Were more and a point of the second of the	MO# : 2624792 MO# : 2624792 Moment Bandrin B			and en	RELING						/				ቭ잌ᇫ똫ዖᄵ╹홏똨 MATRIX CODE (see valid cod	les to left)		R		Purchase Order #	1.1	12	Section B Remited Project In		
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Image: Second and Second an	HCI NaOH NaOH NaOH NaOH NaZSZO3 Methanol Other Antalyteen Teet	Not the second of the second o	NAME AND BOMTUP							7 6					1120 19	SAMPLE TEMP AT COLLECTK										2624
Analysee Test Y/N	Analysee Test Y/N	Note: Arrainween Toest Y/M App: IV Metals (1) X App: IV Metals (2, AP-4) X X TDS, CL, F, SO4 Redium 226/228 2 Image: App: IV Metals (2, AP-4) X	- 100		-F ar	and the second			/	AJ/IN	5				2	Unpreserved H2SO4 HNO3 HCI NaOH	Preservativ		327 (MP)		Address	Company Name	Attention metallion:		DY / And	792
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Pace Ana				
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Aurier: Fed E acc: Other CLIENT: GRPouer-CCR astory Seal on Cooler/Box Present: yes no. Seale intact: yes no. ching Material: @Urbole Bags Norfs Other	Pace Ana			WU# · 2024/91
Part I Fed E acc Other acking #:				PN: BM Due Date: 11/21/1
acting ::::::::::::::::::::::::::::::::::::	ourier: Fed E		ace Other	CLIENT: GRPower-CCR
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hort Hold Time Analysis (<72hr):	ampler Name & Signature on COC:		VA 4.	
ush Turn Around Time Requested: IVes Ives <td>amples Arrived within Hold Time:</td> <td></td> <td>N/A 5.</td> <td></td>	amples Arrived within Hold Time:		N/A 5.	
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Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

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

November 21, 2019

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

RE: Project: PLANT HAMMOND Pace Project No.: 2624799

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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,

Batery Mr Damil

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.: 2624799

Pace Analytical Services Pennsylvania

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



SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624799

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624799001	HGWA-112	Water	10/22/19 10:40	10/24/19 10:07
2624799002	HGWC-117	Water	10/22/19 15:00	10/24/19 10:07
2624799003	HGWC-118	Water	10/22/19 19:08	10/24/19 10:07
2624799004	HGWA-113	Water	10/22/19 11:20	10/24/19 10:07
2624799005	HGWC-109	Water	10/22/19 14:35	10/24/19 10:07
2624799006	HGWC-107	Water	10/22/19 13:55	10/24/19 10:07



SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND

Pace Project No.: 2624799

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624799001	HGWA-112	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624799002	HGWC-117	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624799003	HGWC-118	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624799004	HGWA-113	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624799005	HGWC-109	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624799006	HGWC-107	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



Project: PLANT HAMMOND

Pace Project No.: 2624799

Sample: HGWA-112 PWS:	Lab ID: 26247990 Site ID:	Collected: 10/22/19 10:40 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.491 ± 0.311 (0.509) C:94% T:NA	pCi/L	11/15/19 07:34	13982-63-3	
Radium-228	EPA 9320	0.337 ± 0.310 (0.623) C:77% T:90%	pCi/L	11/12/19 15:56	6 15262-20-1	
Total Radium	Total Radium Calculation	0.828 ± 0.621 (1.13)	pCi/L	11/18/19 15:16	6 7440-14-4	



Project: PLANT HAMMOND

Pace Project No.: 2624799

Sample: HGWC-117 PWS:	Lab ID: 26247990 Site ID:	Collected: 10/22/19 15:00 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.383 ± 0.293 (0.519) C:87% T:NA	pCi/L	11/15/19 07:34	13982-63-3	
Radium-228	EPA 9320	0.444 ± 0.685 (1.48) C:64% T:77%	pCi/L	11/12/19 16:01	15262-20-1	
Total Radium	Total Radium Calculation	0.827 ± 0.978 (2.00)	pCi/L	11/18/19 15:16	6 7440-14-4	



Project: PLANT HAMMOND

Pace Project No.: 2624799

Sample: HGWC-118 PWS:	Lab ID: 26247990 Site ID:	003 Collected: 10/22/19 19:08 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.424 ± 0.266 (0.398) C:90% T:NA	pCi/L	11/15/19 07:34	4 13982-63-3	
Radium-228	EPA 9320	-0.247 ± 0.425 (1.01) C:82% T:89%	pCi/L	11/12/19 16:01	1 15262-20-1	
Total Radium	Total Radium Calculation	0.424 ± 0.691 (1.41)	pCi/L	11/18/19 15:16	6 7440-14-4	



Project: PLANT HAMMOND

Pace Project No.: 2624799

Sample: HGWA-113 PWS:	Lab ID: 26247990 Site ID:	Collected: 10/22/19 11:20 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.401 ± 0.255 (0.368) C:93% T:NA	pCi/L	11/15/19 07:35	5 13982-63-3	
Radium-228	EPA 9320	0.122 ± 0.462 (1.04) C:76% T:83%	pCi/L	11/12/19 16:01	15262-20-1	
Total Radium	Total Radium Calculation	0.523 ± 0.717 (1.41)	pCi/L	11/19/19 09:18	3 7440-14-4	



Project: PLANT HAMMOND

Pace Project No.: 2624799

Sample: HGWC-109 PWS:	Lab ID: 2624799 Site ID:	005 Collected: 10/22/19 14:35 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.545 ± 0.309 (0.464) C:94% T:NA	pCi/L	11/15/19 07:35	5 13982-63-3	
Radium-228	EPA 9320	-0.545 ± 0.446 (1.09) C:77% T:90%	pCi/L	11/12/19 16:01	15262-20-1	
Total Radium	Total Radium Calculation	0.545 ± 0.755 (1.55)	pCi/L	11/19/19 09:18	3 7440-14-4	



Project: PLANT HAMMOND

Pace Project No.: 2624799

Sample: HGWC-107 PWS:	Lab ID: 26247990 Site ID:	Collected: 10/22/19 13:55 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.357 ± 0.270 (0.465) C:90% T:NA	pCi/L	11/15/19 07:35	5 13982-63-3	
Radium-228	EPA 9320	0.348 ± 0.486 (1.04) C:83% T:80%	pCi/L	11/12/19 17:46	5 15262-20-1	
Total Radium	Total Radium Calculation	0.705 ± 0.756 (1.51)	pCi/L	11/19/19 09:18	3 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	PLANT HAMMO	ND			
Pace Project No.:	2624799				
QC Batch:	369310	Analysis Method:	EPA 9315		
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Rad	ium	
Associated Lab Sa	mples: 2624799	001, 2624799002, 2624799003, 2624799004, 2	624799005, 26247	99006	
METHOD BLANK:	1791698	Matrix: Water			
Associated Lab Sa	imples: 2624799	001, 2624799002, 2624799003, 2624799004, 2	624799005, 26247	99006	
Para	imeter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		0.590 ± 0.307 (0.405) C:93% T:NA	pCi/L	11/15/19 07:34	

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



QUALITY CONTROL - RADIOCHEMISTRY

Project:	PLANT HAMMON	ND			
Pace Project No.:	2624799				
QC Batch:	369311	Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 22	28	
Associated Lab Sa	mples: 2624799	001, 2624799002, 2624799003, 2624799004, 2	624799005, 262479	99006	
METHOD BLANK:	1791699	Matrix: Water			
Associated Lab Sa	mples: 2624799	001, 2624799002, 2624799003, 2624799004, 2	624799005, 262479	99006	
					o
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers

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



QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624799

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	PLANT HAMMOND
Pace Project No.:	2624799

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624799001	HGWA-112	EPA 9315	369310		
2624799002	HGWC-117	EPA 9315	369310		
2624799003	HGWC-118	EPA 9315	369310		
2624799004	HGWA-113	EPA 9315	369310		
2624799005	HGWC-109	EPA 9315	369310		
2624799006	HGWC-107	EPA 9315	369310		
2624799001	HGWA-112	EPA 9320	369311		
2624799002	HGWC-117	EPA 9320	369311		
2624799003	HGWC-118	EPA 9320	369311		
2624799004	HGWA-113	EPA 9320	369311		
2624799005	HGWC-109	EPA 9320	369311		
2624799006	HGWC-107	EPA 9320	369311		
2624799001	HGWA-112	Total Radium Calculation	371530		
2624799002	HGWC-117	Total Radium Calculation	371530		
2624799003	HGWC-118	Total Radium Calculation	371530		
2624799004	HGWA-113	Total Radium Calculation	371617		
2624799005	HGWC-109	Total Radium Calculation	371617		
2624799006	HGWC-107	Total Radium Calculation	371617		

	ble Condition Upo	
Pace Analytical WO#:26	524800	Project #
PM: BN		WO#: 2624799
PN: BN rier: Fed Ex UP CLIENT: GAPou sking #: tody Seal on Cooler/Box Present: Uy=	Due Date: 10/31 er-CCR	/19 PM: BM Due Date: 11/21/1 CLIENT: GAPower-CCR
king Material: Bubble Wrap DBubble I		ther
	Type of Ice: Wet Blue	ie None Samples on ice, cooling process has begun
pler Temperature 0.8°C	Biological Tissue is Fr	Date and Initials of DefSOR examining
ain of Custody Present:		
ain of Custody Filled Out:	Pres INO IN/A 2	
nain of Custody Relinquished:	Dies DNO DN/A 3.	
ampler Name & Signature on COC:	Ves DNO DN/A 4.	
amples Arrived within Hold Time:		
hort Hold Time Analysis (<72hr):	Yes No N/A 6	
ush Turn Around Time Requested:	Yes No ONA 7.	······
ufficient Volume:	EYes DNo DN/A 8.	
Correct Containers Used:	ZYes DNO DN/A 9.	
-Pace Containers Used:	Elyes DNO DN/A	and the second
Containers Intact:	Yes INO INA 10	· · · · · · · · · · · · · · · · · · ·
Filtered volume received for Dissolved tests	Yes No INA 11	1
Sample Labels match COC:	Ves ONO ON/A 12	
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.		3.
All containers needing preservation are found to be in		
compliance with EPA recommendation	1	itial when Lot # of added
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		preservative
Samples checked for dechlorination:	Yes No N/A 1	
Headspace in VOA Vials (>6mm):	Yes No ZNA 1	
Trip Blank Present:	Yes No DNA 1	6.
Trip Blank Custody Seals Present		1
Pace Trip Blank Lot # (if purchased):		
Client Notification/ Resolution: Person Contacted:		Field Data Required? Y / N
Comments/ Resolution:		
		3000 W28
232		
	9	
Project Manager Review:	8	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 16, 2019

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

RE: Project: PLANT HAMMOND Pace Project No.: 2624800

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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,

Kein Hung

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.: 2624800

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



SAMPLE SUMMARY

Project: PLANT HAMMOND

Pace Project No.: 2624800

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624800001	HGWA-112	Water	10/22/19 10:40	10/24/19 10:07
2624800002	HGWC-117	Water	10/22/19 15:00	10/24/19 10:07
2624800003	HGWC-118	Water	10/22/19 19:08	10/24/19 10:07
2624800004	HGWA-113	Water	10/22/19 11:20	10/24/19 10:07
2624800005	HGWC-109	Water	10/22/19 14:35	10/24/19 10:07
2624800006	HGWC-107	Water	10/22/19 13:55	10/24/19 10:07



SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND Pace Project No.: 2624800

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624800001	HGWA-112	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624800002	HGWC-117	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624800003	HGWC-118	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624800004	HGWA-113	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624800005	HGWC-109	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624800006	HGWC-107	EPA 6020B	CSW	10
		SM 2540C	MZP	1
		EPA 300.0	MWB	3



Project: PLANT HAMMOND

Pace Project No.: 2624800

Sample: HGWA-112	Lab ID:	2624800001	Collecte	ed: 10/22/19	9 10:40	Received: 10/	24/19 10:07 Ma	Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A				
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 03:47	7440-38-2		
Barium	0.028	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 03:47	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 13:54	7440-41-7		
Boron	0.016J	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 13:54	7440-42-8	В	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 03:47	7440-43-9		
Calcium	6.3	mg/L	0.10	0.011	1	11/01/19 16:00	11/04/19 03:47	7440-70-2		
Chromium	0.0040J	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 03:47	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 03:47	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 03:47	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:54	7439-93-2		
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C							
Total Dissolved Solids	81.0	mg/L	10.0	10.0	1		10/29/19 13:03			
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0							
Chloride	5.5	mg/L	1.0	0.024	1		10/31/19 08:19	16887-00-6		
Fluoride	0.050J	mg/L	0.30	0.029	1		10/31/19 08:19	16984-48-8		
Sulfate	0.60J	mg/L	1.0	0.017	1		10/31/19 08:19	14808-79-8		



Project: PLANT HAMMOND

Pace Project No.: 2624800

Sample: HGWC-117	Lab ID:	2624800002	Collecte	ed: 10/22/19	9 15:00	Received: 10/	24/19 10:07 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 03:58	7440-38-2	
Barium	0.049	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 03:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:00	7440-41-7	
Boron	1.0	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:00	7440-42-8	
Cadmium	0.00068J	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 03:58	7440-43-9	
Calcium	70.9	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 04:04	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 03:58	7440-47-3	
Cobalt	0.0064	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 03:58	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 03:58	7439-92-1	
Lithium	0.0028J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:00	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	348	mg/L	10.0	10.0	1		10/29/19 13:03		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	12.1	mg/L	1.0	0.024	1		10/31/19 08:41	16887-00-6	
Fluoride	0.042J	mg/L	0.30	0.029	1		10/31/19 08:41	16984-48-8	
Sulfate	133	mg/L	10.0	0.17	10		10/31/19 18:42	14808-79-8	



Project: PLANT HAMMOND

Pace Project No.: 2624800

Sample: HGWC-118	Lab ID:	2624800003	Collecte	ed: 10/22/19	9 19:08	Received: 10/	/24/19 10:07 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: El	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 04:10	7440-38-2	
Barium	0.054	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 04:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:05	7440-41-7	
Boron	0.65	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:05	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 04:10	7440-43-9	
Calcium	84.2	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 04:15	7440-70-2	
Chromium	0.00066J	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 04:10	7440-47-3	
Cobalt	0.00061J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 04:10	7440-48-4	
Lead	0.00025J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 04:10	7439-92-1	
Lithium	0.0027J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:05	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	354	mg/L	10.0	10.0	1		10/29/19 13:03		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	4.5	mg/L	1.0	0.024	1		10/31/19 09:04	16887-00-6	
Fluoride	0.087J	mg/L	0.30	0.029	1		10/31/19 09:04	16984-48-8	
Sulfate	80.9	mg/L	10.0	0.17	10		10/31/19 19:05	14808-79-8	



Project: PLANT HAMMOND

Pace Project No.: 2624800

Sample: HGWA-113	Lab ID:	2624800004	Collecte	ed: 10/22/19	9 11:20	Received: 10/	/24/19 10:07 Ma	Aatrix: Water		
			Report							
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: EF	PA 3005A				
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 04:33	7440-38-2		
Barium	0.027	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 04:33	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:32	7440-41-7		
Boron	0.010J	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:32	7440-42-8	В	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 04:33	7440-43-9		
Calcium	7.2	mg/L	0.10	0.011	1	11/01/19 16:00	11/04/19 04:33	7440-70-2		
Chromium	0.0023J	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 04:33	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 04:33	7440-48-4		
Lead	0.000073J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 04:33	7439-92-1		
Lithium	0.0011J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:32	7439-93-2		
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C							
Total Dissolved Solids	95.0	mg/L	10.0	10.0	1		10/29/19 13:04			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	1.9	mg/L	1.0	0.024	1		10/31/19 10:55	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		10/31/19 10:55	16984-48-8		
Sulfate	6.8	mg/L	1.0	0.017	1		10/31/19 10:55	14808-79-8		



Project: PLANT HAMMOND

Pace Project No.: 2624800

Results	Units	Report Limit													
	Units	Limit	·												
Applytical			MDL	DF	Prepared	Analyzed	CAS No.	Qual							
Analytical	Method: EPA 6	6020B Pre	paration Met	hod: EF	A 3005A										
0.0019J	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 04:44	7440-38-2								
0.087	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 04:44	7440-39-3								
ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:37	7440-41-7								
0.32	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:37	7440-42-8								
ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 04:44	7440-43-9								
42.6	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 04:50	7440-70-2								
0.00062J	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 04:44	7440-47-3								
0.0022J	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 04:44	7440-48-4								
0.000054J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 04:44	7439-92-1								
0.00088J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:37	7439-93-2								
Analytical	Method: SM 2	540C													
212	mg/L	10.0	10.0	1		10/29/19 13:15									
Analytical	Method: EPA 3	300.0													
4.6	mg/L	1.0	0.024	1		10/31/19 11:17	16887-00-6								
0.099J	0	0.30	0.029	1		10/31/19 11:17	16984-48-8								
	0			1		10/31/19 11:17	14808-79-8	M1							
	0.0019J 0.087 ND 0.32 ND 42.6 0.00062J 0.00022J 0.000054J 0.000088J Analytical I 212 Analytical I 4.6	0.0019J mg/L 0.087 mg/L ND mg/L 0.32 mg/L ND mg/L 42.6 mg/L 0.00062J mg/L 0.00023J mg/L 0.000054J mg/L 0.00088J mg/L Analytical Method: SM 2 212 mg/L Analytical Method: EPA 3 4.6 mg/L 0.099J mg/L	0.0019J mg/L 0.0050 0.087 mg/L 0.010 ND mg/L 0.0030 0.32 mg/L 0.040 ND mg/L 0.0025 42.6 mg/L 0.010 0.00062J mg/L 0.0050 0.000054J mg/L 0.0050 0.000054J mg/L 0.030 Analytical Method: SM 2540C 212 mg/L 10.0 Analytical Method: EPA 300.0 4.6 mg/L 1.0 0.099J mg/L 0.30 1.0	0.0019J mg/L 0.0050 0.00035 0.087 mg/L 0.010 0.00049 ND mg/L 0.0030 0.000074 0.32 mg/L 0.040 0.0049 ND mg/L 0.0025 0.00011 42.6 mg/L 0.0025 0.00011 42.6 mg/L 0.010 0.00039 0.0022J mg/L 0.010 0.00039 0.0025J mg/L 0.0050 0.00030 0.000054J mg/L 0.0050 0.000046 0.000088J mg/L 0.030 0.00078 Analytical Method: SM 2540C 212 mg/L 10.0 10.0 Analytical Method: EPA 300.0 4.6 mg/L 1.0 0.024 0.099J mg/L 0.30 0.024 0.024	0.0019J mg/L 0.0050 0.00035 1 0.087 mg/L 0.010 0.00049 1 ND mg/L 0.0030 0.000074 1 0.32 mg/L 0.040 0.0049 1 ND mg/L 0.0025 0.00011 1 42.6 mg/L 5.0 0.55 50 0.00062J mg/L 0.010 0.00039 1 0.0022J mg/L 0.0050 0.00030 1 0.000054J mg/L 0.0050 0.00030 1 0.000088J mg/L 0.030 0.00078 1 Analytical Method: SM 2540C 212 mg/L 10.0 10.0 1 Analytical Method: EPA 300.0 1 10.0 10.0 1 Manalytical Method: Method: EPA 300.0 1 1.0 0.024 1 0.099J mg/L 0.30 0.029 1	0.087 mg/L 0.010 0.00049 1 11/01/19 16:00 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 0.32 mg/L 0.040 0.0049 1 11/01/19 16:00 ND mg/L 0.0025 0.00011 1 11/01/19 16:00 42.6 mg/L 5.0 0.55 50 11/01/19 16:00 42.6 mg/L 0.010 0.00039 1 11/01/19 16:00 0.00062J mg/L 0.010 0.00039 1 11/01/19 16:00 0.0022J mg/L 0.0050 0.00030 1 11/01/19 16:00 0.000054J mg/L 0.030 0.00078 1 11/01/19 16:00 0.00088J mg/L 0.030 0.00078 1 11/01/19 16:00 Analytical Method: SM 2540C I 1 1 1 1 1 1 1 4.6 </td <td>0.0019J mg/L 0.0050 0.00035 1 11/01/19 16:00 11/04/19 04:44 0.087 mg/L 0.010 0.00049 1 11/01/19 16:00 11/04/19 04:44 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 ND mg/L 0.0025 0.00011 1 11/01/19 16:00 11/04/19 04:44 42.6 mg/L 0.0025 0.00011 1 11/01/19 16:00 11/04/19 04:44 0.00062J mg/L 0.0025 0.00011 1 11/01/19 16:00 11/04/19 04:44 0.00062J mg/L 0.0010 0.00039 1 11/01/19 16:00 11/04/19 04:44 0.000054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 0.000054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 0.000088J mg/L 0.030<!--</td--><td>0.0019J mg/L 0.0050 0.00035 1 11/01/19 16:00 11/04/19 04:44 7440-38-2 0.087 mg/L 0.010 0.00049 1 11/01/19 16:00 11/04/19 04:44 7440-38-2 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 7440-39-3 ND mg/L 0.0040 0.0049 1 11/01/19 16:00 11/04/19 14:37 7440-42-8 ND mg/L 0.0025 0.0011 1 11/01/19 16:00 11/04/19 04:44 7440-43-9 42.6 mg/L 5.0 0.55 50 11/01/19 16:00 11/04/19 04:44 7440-47-3 0.00062J mg/L 0.010 0.0039 1 11/01/19 16:00 11/04/19 04:44 7440-47-3 0.00054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 7439-93-2 Analytical Method: SM 2540C 1 11/01/19 16:00 11/04/19 04:44 7439-93-2 4.6 mg/L 1.0 1.0 1 10/29/19 13:15 10/31/19 11:17 4.6 mg/L</td></td>	0.0019J mg/L 0.0050 0.00035 1 11/01/19 16:00 11/04/19 04:44 0.087 mg/L 0.010 0.00049 1 11/01/19 16:00 11/04/19 04:44 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 ND mg/L 0.0025 0.00011 1 11/01/19 16:00 11/04/19 04:44 42.6 mg/L 0.0025 0.00011 1 11/01/19 16:00 11/04/19 04:44 0.00062J mg/L 0.0025 0.00011 1 11/01/19 16:00 11/04/19 04:44 0.00062J mg/L 0.0010 0.00039 1 11/01/19 16:00 11/04/19 04:44 0.000054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 0.000054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 0.000088J mg/L 0.030 </td <td>0.0019J mg/L 0.0050 0.00035 1 11/01/19 16:00 11/04/19 04:44 7440-38-2 0.087 mg/L 0.010 0.00049 1 11/01/19 16:00 11/04/19 04:44 7440-38-2 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 7440-39-3 ND mg/L 0.0040 0.0049 1 11/01/19 16:00 11/04/19 14:37 7440-42-8 ND mg/L 0.0025 0.0011 1 11/01/19 16:00 11/04/19 04:44 7440-43-9 42.6 mg/L 5.0 0.55 50 11/01/19 16:00 11/04/19 04:44 7440-47-3 0.00062J mg/L 0.010 0.0039 1 11/01/19 16:00 11/04/19 04:44 7440-47-3 0.00054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 7439-93-2 Analytical Method: SM 2540C 1 11/01/19 16:00 11/04/19 04:44 7439-93-2 4.6 mg/L 1.0 1.0 1 10/29/19 13:15 10/31/19 11:17 4.6 mg/L</td>	0.0019J mg/L 0.0050 0.00035 1 11/01/19 16:00 11/04/19 04:44 7440-38-2 0.087 mg/L 0.010 0.00049 1 11/01/19 16:00 11/04/19 04:44 7440-38-2 ND mg/L 0.0030 0.000074 1 11/01/19 16:00 11/04/19 04:44 7440-39-3 ND mg/L 0.0040 0.0049 1 11/01/19 16:00 11/04/19 14:37 7440-42-8 ND mg/L 0.0025 0.0011 1 11/01/19 16:00 11/04/19 04:44 7440-43-9 42.6 mg/L 5.0 0.55 50 11/01/19 16:00 11/04/19 04:44 7440-47-3 0.00062J mg/L 0.010 0.0039 1 11/01/19 16:00 11/04/19 04:44 7440-47-3 0.00054J mg/L 0.0050 0.00030 1 11/01/19 16:00 11/04/19 04:44 7439-93-2 Analytical Method: SM 2540C 1 11/01/19 16:00 11/04/19 04:44 7439-93-2 4.6 mg/L 1.0 1.0 1 10/29/19 13:15 10/31/19 11:17 4.6 mg/L							



Project: PLANT HAMMOND

Pace Project No.: 2624800

Sample: HGWC-107	Lab ID:	2624800006	Collecte	ed: 10/22/19	9 13:55	Received: 10/	24/19 10:07 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: El	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 04:55	7440-38-2	
Barium	0.039	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 04:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:43	7440-41-7	
Boron	0.91	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:43	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 04:55	7440-43-9	
Calcium	58.1	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 05:01	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 04:55	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 04:55	7440-48-4	
Lead	0.000079J	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 04:55	7439-92-1	
Lithium	0.00094J	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:43	7439-93-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	308	mg/L	10.0	10.0	1		10/29/19 13:15		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	3.6	mg/L	1.0	0.024	1		10/31/19 12:02	16887-00-6	
Fluoride	0.047J	mg/L	0.30	0.029	1		10/31/19 12:02	16984-48-8	
Sulfate	123	mg/L	10.0	0.17	10		10/31/19 19:27	14808-79-8	



Project: PLANT HAMMOND

Pace Project No.: 2624800

QC Batch:	3802	4	Analysis Method:	EPA 6020B
QC Batch Method:	EPA	3005A	Analysis Description:	6020B MET
Associated Lab Sam	ples:	2624800001, 2624800002, 2	624800003, 2624800004, 26	24800005, 2624800006

METHOD BLANK: 17288	9 Matrix: Water
Associated Lab Samples:	2624800001, 2624800002, 2624800003, 2624800004, 2624800005, 2624800006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	11/04/19 01:12	
Barium	mg/L	ND	0.010	0.00049	11/04/19 01:12	
Beryllium	mg/L	ND	0.0030	0.000074	11/04/19 01:12	
Boron	mg/L	0.0059J	0.040	0.0049	11/04/19 01:12	
Cadmium	mg/L	ND	0.0025	0.00011	11/04/19 01:12	
Calcium	mg/L	ND	0.10	0.011	11/04/19 01:12	
Chromium	mg/L	ND	0.010	0.00039	11/04/19 01:12	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 01:12	
Lead	mg/L	ND	0.0050	0.000046	11/04/19 01:12	
Lithium	mg/L	ND	0.030	0.00078	11/04/19 01:12	

LABORATORY CONTROL SAMPLE: 172890

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.11	114	80-120	
Boron	mg/L	1	1.2	116	80-120	
Cadmium	mg/L	0.1	0.11	106	80-120	
Calcium	mg/L	1	1.1	106	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.11	112	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1728	91		172892							
Parameter	Units	2624772007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	2.5	0.1	0.1	2.6	2.6	43	106	75-125	2	20	M6
Barium	mg/L	0.22	0.1	0.1	0.32	0.31	99	98	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.090	0.086	90	86	75-125	5	20	
Boron	mg/L	3.8	1	1	5.1	5.2	85	95	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	4	20	
Calcium	mg/L	177	1	1	170	179	-693	243	75-125	5	20	M6
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.092	0.090	92	90	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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Project: PLANT HAMMOND Pace Project No.: 2624800

MATRIX SPIKE & MATRIX SP	PIKE DUPL	ICATE: 1728	91		172892							
			MS	MSD								
		2624772007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Lithium	mg/L	0.29	0.1	0.1	0.36	0.36	73	75	75-125	1	20	M1

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REPORT OF LABORATORY ANALYSIS

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Project: Pace Project No.:	PLANT HAMMONE 2624800)								
QC Batch:	37734		Analysis I	Method:	SM 2540C					
QC Batch Method:	SM 2540C		Analysis [Description:	2540C Total D	issolved	d Solids			
Associated Lab Sar	mples: 262480000	01, 2624800002,	2624800003, 26	624800004						
LABORATORY CO	NTROL SAMPLE:	171260								
			Spike	LCS	LCS	% R	lec			
Parar	neter	Units	Conc.	Result	% Rec	Lim	its	Qı	alifiers	
Total Dissolved Soli	ids	mg/L	400	395	99		84-108			
SAMPLE DUPLICA	TE: 171261									
			2624674001				Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	20	<u>59</u>	270	0		10		
SAMPLE DUPLICA	TE: 171262									
			2624786001	l Dup			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Soli	ids	mg/L	69	93	709	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.



Project: PLA Pace Project No.: 2624	NT HAMMOND 1800							
QC Batch: 37	735	Analysis I	Method:	SM 2540C				
QC Batch Method: SN	I 2540C	Analysis I	Description:	2540C Total D	issolved Solids			
Associated Lab Samples:	2624800005, 26248000	006						
LABORATORY CONTRO	L SAMPLE: 171263							
		Spike	LCS	LCS	% Rec			
Parameter	Units	Conc.	Result	% Rec	Limits	Qu	alifiers	
Total Dissolved Solids	mg/L	400	402	100	84-108			
SAMPLE DUPLICATE:	171264							
		262480000	5 Dup		Max			
Parameter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Solids	mg/L	2	12 2	12	0	10		
SAMPLE DUPLICATE:	171265							
		2624792004	4 Dup		Max			
Parameter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Solids	mg/L	5	07 5	12	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.



QUALITY CONTROL DATA

,	LANT HAMMON 624800	D										
	37870		Analy	/sis Metho	d: E	EPA 300.0						
QC Batch Method:	EPA 300.0		Analy	/sis Descri	ption: 3	300.0 IC Ani	ons					
Associated Lab Samp	les: 26248000	01, 2624800002,				300005, 262	248000	06				
METHOD BLANK: 1	71006			Matrix: W	ator							
Associated Lab Samp		01, 2624800002,	262490000			200005 261	040000	06				
Associated Lab Samp	20248000	01, 2024800002,	Blar		Reporting	500005, 262	248000	00				
Parame	ter	Units	Res		Limit	MDL	_	Analyzed	d Qi	alifiers	5	
Chloride		mg/L		ND	1.(D	0.024	10/31/19 04	l:37			
Fluoride		mg/L		ND	0.30)	0.029	10/31/19 04	:37			
Sulfate		mg/L		ND	1.0	0	0.017	10/31/19 04	1:37			
LABORATORY CONT		171907	Spike	LC		LCS		6 Rec	0			
Parame	ter	Units	Conc.	Res		% Rec		imits	Qualifiers	_		
Chloride		mg/L		5	4.8	96		90-110				
Fluoride Sulfate		mg/L		5 5	5.0 5.1	101 101		90-110 90-110				
Sullate		mg/L		5	5.1	10		90-110				
MATRIX SPIKE & MA	TRIX SPIKE DUP	LICATE: 1719	08		171909							
			MS	MSD					_			
Parameter	Units	2624786002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Red	MSD c % Rec	% Rec Limits	RPD	Max RPD	Qua
Chloride	mg/L	3.2	10	10	13.0	13.2		97 100	90-110	2	15	
Fluoride	mg/L	0.56	10	10	10.6	10.9	1	00 103	3 90-110	3	15	
MATRIX SPIKE SAMF	LE:	171910										
			26248	300005	Spike	MS		MS	% Rec			
Parame	ter	Units	Re	sult	Conc.	Result		% Rec	Limits		Qualit	fiers
Chloride		mg/L		4.6	10	1	4.7	101	90	-110		
Fluoride		mg/L		0.099J	10		0.6	105		-110		
Sulfate		mg/L		23.2	10	2	28.2	50	90	-110 N	11	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624800

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.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	PLANT HAMMOND
Pace Project No.:	2624800

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624800001	HGWA-112	EPA 3005A	38024	EPA 6020B	38049
2624800002	HGWC-117	EPA 3005A	38024	EPA 6020B	38049
2624800003	HGWC-118	EPA 3005A	38024	EPA 6020B	38049
2624800004	HGWA-113	EPA 3005A	38024	EPA 6020B	38049
2624800005	HGWC-109	EPA 3005A	38024	EPA 6020B	38049
2624800006	HGWC-107	EPA 3005A	38024	EPA 6020B	38049
2624800001	HGWA-112	SM 2540C	37734		
2624800002	HGWC-117	SM 2540C	37734		
2624800003	HGWC-118	SM 2540C	37734		
2624800004	HGWA-113	SM 2540C	37734		
2624800005	HGWC-109	SM 2540C	37735		
2624800006	HGWC-107	SM 2540C	37735		
2624800001	HGWA-112	EPA 300.0	37870		
2624800002	HGWC-117	EPA 300.0	37870		
2624800003	HGWC-118	EPA 300.0	37870		
2624800004	HGWA-113	EPA 300.0	37870		
2624800005	HGWC-109	EPA 300.0	37870		
2624800006	HGWC-107	EPA 300.0	37870		

	ble Condition Upo	
Pace Analytical WO#:26	524800	Project #
PM: BN		WO#: 2624799
PN: BN rier: Fed Ex UP CLIENT: GAPou sking #: tody Seal on Cooler/Box Present: Uy=	Due Date: 10/31 er-CCR	/19 PM: BM Due Date: 11/21/1 CLIENT: GAPower-CCR
king Material: Bubble Wrap DBubble I		ther
	Type of Ice: Wet Blue	ie None Samples on ice, cooling process has begun
pler Temperature 0.8°C	Biological Tissue is Fr	Date and Initials of DefSOR examining
ain of Custody Present:		
ain of Custody Filled Out:	Pres INO IN/A 2	
nain of Custody Relinquished:	Dies DNO DN/A 3.	
ampler Name & Signature on COC:	Ves DNO DN/A 4.	
amples Arrived within Hold Time:		
hort Hold Time Analysis (<72hr):	Yes No N/A 6	
ush Turn Around Time Requested:	Yes No ONA 7.	······
ufficient Volume:	EYes DNo DN/A 8.	
Correct Containers Used:	ZYes DNO DN/A 9.	
-Pace Containers Used:	Elyes DNO DN/A	and the second
Containers Intact:	Yes INO INA 10	· · · · · · · · · · · · · · · · · · ·
Filtered volume received for Dissolved tests	Yes No INA 11	1
Sample Labels match COC:	Ves ONO ON/A 12	
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.		3.
All containers needing preservation are found to be in		
compliance with EPA recommendation	1	itial when Lot # of added
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		preservative
Samples checked for dechlorination:	Yes No N/A 1	
Headspace in VOA Vials (>6mm):	Yes No ZN/A 1	
Trip Blank Present:	TYES NO DINA 1	6.
Trip Blank Custody Seals Present		1
Pace Trip Blank Lot # (if purchased):		
Client Notification/ Resolution: Person Contacted:		Field Data Required? Y / N
Comments/ Resolution:		
		3000 W28
232		
	9	
Project Manager Review:	8	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 21, 2019

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

RE: Project: PLANT HAMMOND Pace Project No.: 2624802

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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,

Batery Mr Damil

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.: 2624802

Pace Analytical Services Pennsylvania

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



SAMPLE SUMMARY

Project: PLANT HAMMOND Pace Project No.: 2624802

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624802001	FB-01	Water	10/22/19 17:10	10/24/19 10:07



SAMPLE ANALYTE COUNT

Project:PLANT HAMMONDPace Project No.:2624802

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624802001	FB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA



Project: PLANT HAMMOND

Pace Project No.: 2624802

Sample: FB-01 PWS:	Lab ID: 26248020 Site ID:	Collected: 10/22/19 17:10 Sample Type:	Received:	10/24/19 10:07	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.270 ± 0.222 (0.392) C:97% T:NA	pCi/L	11/15/19 10:17	7 13982-63-3	
Radium-228	EPA 9320	-0.147 ± 0.412 (0.993) C:83% T:84%	pCi/L	11/12/19 17:50	0 15262-20-1	
Total Radium	Total Radium Calculation	0.270 ± 0.634 (1.39)	pCi/L	11/19/19 09:18	3 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT I	HAMMOND				
Pace Project No.: 2624802	2				
QC Batch: 369310)	Analysis Method:	EPA 9315		
QC Batch Method: EPA 93	315	Analysis Description:	9315 Total Radiur	n	
Associated Lab Samples:	2624802001				
METHOD BLANK: 1791698	}	Matrix: Water			
Associated Lab Samples:	2624802001				
Parameter	Act	± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.590 ± 0.307	(0.405) C:93% T:NA	pCi/L	11/15/19 07:34	

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



QUALITY CONTROL - RADIOCHEMISTRY

PLANT HAMMON	D			
2624802				
369311	Analysis Method:	EPA 9320		
EPA 9320	Analysis Description:	9320 Radium 22	28	
mples: 26248020	01			
1791699	Matrix: Water			
mples: 26248020	01			
meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
	0.174 ± 0.362 (0.799) C:80% T:87%	pCi/L	11/12/19 15:54	
1	2624802 369311 EPA 9320 mples: 26248020 1791699 mples: 26248020	369311 Analysis Method: EPA 9320 Analysis Description: mples: 2624802001 1791699 Matrix: Water mples: 2624802001 meter Act ± Unc (MDC) Carr Trac	2624802 369311 Analysis Method: EPA 9320 369311 Analysis Method: EPA 9320 mples: 2624802001 9320 Radium 22 1791699 Matrix: Water mples: 2624802001 Meter Act ± Unc (MDC) Carr Trac Units	2624802 369311 Analysis Method: EPA 9320 BPA 9320 Analysis Description: 9320 Radium 228 mples: 2624802001 9320 Radium 228 1791699 Matrix: Water mples: 2624802001 Meter Act ± Unc (MDC) Carr Trac Units Analyzed

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



QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624802

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND Pace Project No.: 2624802

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624802001	FB-01	EPA 9315	369310		
2624802001	FB-01	EPA 9320	369311		
2624802001	FB-01	Total Radium Calculation	371617		

		12. AP-4	(1) App	1000	12	1	10	9	8 10 A	1		5		3	2	1	ITEM #			11	Request	Phone	Allanta, Email	Address	Company	Section A Required	
		(2, AP-4) Age IV Metals = A4, Ba, Ba, C4, C4, C4, C6, Pb, U , MO	3) App. III Metals = 8, Ca	ADOITIONAL CONMENTS	\backslash											F8-01	(A-Z, 0-9 (, -) (A-Z, 0-9 (, -) Sample ids must be unique Traux	SAMPLE ID Source Weat What Weat Weat Weat Weat Weat Weat Weat We	MATRI: Owner		Requested Due Date Shaward Tar	(404)508-7239 Fax	Allanta, GA 30339 Emeil about an anno com	2480 Maner Road	Georgia Power - Coal Combustion Residuals	Pacerikal Section A Required Client Information:	•
	+	8	D	and the second				K	R									o st ⊿ Mat			Project #	Project Name	Purchase Order #	Copy To	Report	Section B Required Project Information:	
		8	3	Z							-	-	-	-	-	47	MATRIX CODE	free value or	ides to leff)							Proje	
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124		8	0.	III.	-												H2SO4							N	1		N
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Page 10 of 11

Sa	mple Condition U	pon Receipt	
	: 2624803	10/31/19	10#:2624802
cking #: UPS PM : BM	GAPouer-CCR	124 000 1	: BM Due Date: 11/21/15 LIENT: GAPower-CCR
stody Seal on Cooler/Box Present. Uye	23	12	
cking Material: Bubble Wrap			
ermometer Used SHR 214	Type of Ice: Wet	Blue None	Date and Initials of person examining
oler Temperature	Biological Tissue is		contents:
np should be above freezing to 6°C		omments:	
ain of Custody Present:	Pres No N/A 1		
ain of Custody Filled Out:	ZYes INO IN/A 2		
nain of Custody Relinquished:	Pres DNo DN/A 3		
ampler Name & Signature on COC:	ZYes DNo DN/A	k	
amples Arrived within Hold Time:		5.	
nort Hold Time Analysis (<72hr):		ŝ	
ush Turn Around Time Requested:		7	
ufficient Volume:	EYes DNO DNA	8	
orrect Containers Used:		9.	
-Pace Containers Used:	Eyes DNO DN/A		
ontainers Intact:		10.	
iltered volume received for Dissolved tests			
ample Labels match COC:			
A 1978-542			
-Includes date/time/ID/Analysis Matrix: Il containers needing preservation have been checked		42	
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Il containers needing preservation are found to be i ompliance with EPA recommendation.	n Øyes 🗆 No 🗇 N/A		
		Initial when	Lot # of added
xceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		completed	preservative
Samples checked for dechlorination:			
leadspace in VOA Vials (>6mm):			
rip Blank Present:		16.	14
Trip Blank Custody Seals Present	□Yes □No ØN/A	1	2
Pace Trip Blank Lot # (if purchased):		1	
Client Notification/ Resolution:			Field Data Required? Y / N
Person Contacted:	Date	Time	
Comments/ Resolution:		88 - 17 L .	
			3000 W28
200			
5			

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 17, 2019

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

RE: Project: PLANT HAMMOND Pace Project No.: 2624803

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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,

Kein Hung

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.: 2624803

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



SAMPLE SUMMARY

Project: PLANT HAMMOND Pace Project No.: 2624803

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624803001		Water	10/22/19 17:10	10/24/19 10:07

REPORT OF L	ABORATORY	ANALYSIS
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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND Pace Project No.: 2624803

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624803001	FB-01	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3



ANALYTICAL RESULTS

Project: PLANT HAMMOND

Pace Project No.: 2624803

Sample: FB-01	Lab ID:	2624803001	Collecte	ed: 10/22/19	9 17:10	Received: 10/	/24/19 10:07 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: Ef	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	11/01/19 16:00	11/04/19 05:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 05:07	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 05:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 14:49	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 14:49	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 05:07	7440-43-9	
Calcium	0.011J	mg/L	0.10	0.011	1	11/01/19 16:00	11/04/19 05:07	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 05:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 05:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 05:07	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 14:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 05:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/01/19 16:00	11/04/19 05:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	11/01/19 16:00	11/04/19 05:07	7440-28-0	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.00014	1	10/29/19 09:50	10/29/19 16:31	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/29/19 13:15		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	ND	mg/L	1.0	0.024	1		10/31/19 12:24	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/31/19 12:24		
Sulfate	ND	mg/L	1.0	0.017	1		10/31/19 12:24		
		<u> </u>			-				



Project:	PLANT HAMMON	D										
Pace Project No.:	2624803											
QC Batch:	37720		Analy	sis Meth	od:	EPA 7470A						
QC Batch Method:	EPA 7470A		Analy	sis Desc	ription:	7470 Mercu	ıry					
Associated Lab Sar	nples: 26248030	01										
METHOD BLANK:	171214			Matrix: \	Water							
Associated Lab Sar	nples: 26248030	01										
			Blan		Reporting							
Parar	neter	Units	Resu	ilt	Limit	MD	L	Analyze	d Q	ualifiers		
Mercury		mg/L		ND	0.0005	0 0.	.00014	10/29/19 1	5:19			
LABORATORY CO	NTROL SAMPLE:	171215										
			Spike	L	.CS	LCS	%	Rec				
Parar	neter	Units	Conc.	Re	esult	% Rec	L	imits	Qualifiers			
Mercury		mg/L	0.002	5	0.0026	10	5	80-120				
MATRIX SPIKE & N	IATRIX SPIKE DUF	PLICATE: 1712	:16		171217							
			MS	MSD								
		2624786001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Units	Result	Conc.	Conc.	Result	Result	% Rec	c % Rec	Limits	RPD	RPD	Qual

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



Project: PLANT HAMMOND

Pace Project No.: 2624803

QC Batch: 38024		Analysis Meth	nod: EPA	6020B		
QC Batch Method: EPA 3005A		Analysis Des	cription: 6020	DB MET		
Associated Lab Samples: 262480	3001					
METHOD BLANK: 172889		Matrix:	Water			
Associated Lab Samples: 262480	3001					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	11/04/19 01:12	
Arsenic	mg/L	ND	0.0050	0.00035	11/04/19 01:12	
Barium	mg/L	ND	0.010	0.00049	11/04/19 01:12	
Beryllium	mg/L	ND	0.0030	0.000074	11/04/19 01:12	
Boron	mg/L	0.0059J	0.040	0.0049	11/04/19 01:12	
Cadmium	mg/L	ND	0.0025	0.00011	11/04/19 01:12	
Calcium	mg/L	ND	0.10	0.011	11/04/19 01:12	
Chromium	mg/L	ND	0.010	0.00039	11/04/19 01:12	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 01:12	
Lead	mg/L	ND	0.0050	0.000046	11/04/19 01:12	
Lithium	mg/L	ND	0.030	0.00078	11/04/19 01:12	
Molybdenum	mg/L	ND	0.010	0.00095	11/04/19 01:12	
Selenium	mg/L	ND	0.010	0.0013	11/04/19 01:12	
Thallium	mg/L	ND	0.0010	0.000052	11/04/19 01:12	

LABORATORY CONTROL SAMPLE: 172890

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
ntimony	mg/L	0.1	0.11	107	80-120	
rsenic	mg/L	0.1	0.10	100	80-120	
arium	mg/L	0.1	0.10	103	80-120	
eryllium	mg/L	0.1	0.11	114	80-120	
pron	mg/L	1	1.2	116	80-120	
idmium	mg/L	0.1	0.11	106	80-120	
llcium	mg/L	1	1.1	106	80-120	
romium	mg/L	0.1	0.10	105	80-120	
palt	mg/L	0.1	0.10	104	80-120	
d	mg/L	0.1	0.10	102	80-120	
ium	mg/L	0.1	0.11	112	80-120	
lybdenum	mg/L	0.1	0.10	103	80-120	
lenium	mg/L	0.1	0.10	101	80-120	
allium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SP	IKE DUPL	ICATE: 1728	91		172892							
			MS	MSD								
		2624772007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	106	104	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

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Project: PLANT HAMMOND

Pace Project No.: 2624803

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 1728	-		172892							
		2624772007	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	2.5	0.1	0.1	2.6	2.6	43	106	75-125	2	20	M6
Barium	mg/L	0.22	0.1	0.1	0.32	0.31	99	98	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.090	0.086	90	86	75-125	5	20	
Boron	mg/L	3.8	1	1	5.1	5.2	85	95	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	4	20	
Calcium	mg/L	177	1	1	170	179	-693	243	75-125	5	20	M6
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.092	0.090	92	90	75-125	2	20	
Lithium	mg/L	0.29	0.1	0.1	0.36	0.36	73	75	75-125	1	20	M1
Molybdenum	mg/L	0.49	0.1	0.1	0.58	0.60	89	105	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.093	0.092	93	92	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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Project: Pace Project No.:	PLANT HAMMOND 2624803							
QC Batch:	37735		Analysis M	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids		
Associated Lab San	nples: 2624803001							
LABORATORY COM	NTROL SAMPLE: 1	71263				_		
Paran	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qu	alifiers
Total Dissolved Solie	ds —	mg/L	400	402	100	84-108		
SAMPLE DUPLICA	TE: 171264							
Paran	neter	Units	2624800005 Result	Dup Result	RPD	Max RPD		Qualifiers
Total Dissolved Solie		mg/L	21		212	0	10	
SAMPLE DUPLICA	TE: 171265							
Paran	neter	Units	2624792004 Result	Dup Result	RPD	Max RPD		Qualifiers
Total Dissolved Solie	ds	mg/L	50		512	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.



EPA 300.0

Analysis Method:

Project:	PLANT HAMMOND
Pace Project No.:	2624803
QC Batch:	37870

METHOD BLANK: 171906		Matrix	Water				
Associated Lab Samples: 26248030	01						
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analyz	ed	Qualifiers
Chloride	mg/L	ND	1.	0.0	024 10/31/19	04:37	
Fluoride	mg/L	ND	0.3	0 0.0	029 10/31/19	04:37	
Sulfate	mg/L	ND	1.	0.0	017 10/31/19	04:37	
	171907						
LABORATORY CONTROL SAMPLE: Parameter	171907 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	s
Parameter	Units					Qualifier	S
Parameter		Conc.	Result	% Rec	Limits	Qualifiers	S
Parameter Chloride Fluoride	Units mg/L	5	Result 4.8	% Rec	Limits 90-110	Qualifiers	S
Parameter Chloride Fluoride Sulfate	Units mg/L mg/L mg/L	Conc. 5 5 5	Result 4.8 5.0 5.1	% Rec 96 101	Limits 90-110 90-110	Qualifier	S
LABORATORY CONTROL SAMPLE: Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX SPIKE DUF	Units mg/L mg/L mg/L	Conc. 5 5 5	Result 4.8 5.0 5.1 171909	% Rec 96 101	Limits 90-110 90-110	Qualifier	<u>s</u>

Parameter	Units	2624786002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.2	10	10	13.0	13.2	97	100	90-110	2	15	
Fluoride	mg/L	0.56	10	10	10.6	10.9	100	103	90-110	3	15	

MATRIX SPIKE SAMPLE:	171910						
Parameter	Units	2624800005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.6	10	14.7	101	90-110	
Fluoride	mg/L	0.099J	10	10.6	105	90-110	
Sulfate	mg/L	23.2	10	28.2	50	90-110 N	11

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT HAMMOND

Pace Project No.: 2624803

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND Pace Project No.: 2624803

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624803001	FB-01	EPA 3005A	38024	EPA 6020B	38049
2624803001	FB-01	EPA 7470A	37720	EPA 7470A	37761
2624803001	FB-01	SM 2540C	37735		
2624803001	FB-01	EPA 300.0	37870		

		12. AP-4	(1) App	1000	12	1	10	9	8 10 A	1		5		3	2	1	ITEM #			11	Request	Phone	Allanta, Email	Address	Company	Section A Required	
		(2, AP-4) Age IV Metals = A4, Ba, Ba, C4, C4, Ca, Pb, U , MO	3) App. III Metals = 8, Ca	ADOITIONAL CONMENTS	\backslash											F8-01	(A-Z, 0-9 (, -) (A-Z, 0-9 (, -) Sample ids must be unique Traux	SAMPLE ID Source Weat What Weat Weat Weat Weat Weat Weat Weat We	MATRI: Owner		Requested Due Date Shaward Tar	(404)508-7239 Fax	Allanta, GA 30339 Emeil about an anno com	2480 Maner Road	Georgia Power - Coal Combustion Residuals	Pacerikal Section A Required Client Information:	•
	+	8	D	and the second				K	R									o st ⊿ Mat			Project #	Project Name	Purchase Order #	Copy To	Report	Section B Required Project Information:	
		8	3	Z							-	-	-	-	-	47	MATRIX CODE	free value or	ides to leff)							Proje	
		15	GEARS	RELINQUES	\vdash				1				-	-	-	6	SAMPLE TYPE				ñ	₂ [†]	•	uren i			
		E	8						1	,0	-				\vdash				T		GW 658 1		3	Petty		omna	
		Runor/ sco	9	NOUNTRY / ALLEND					1	1						10/22/01	DATE	ST				Plant Hammond		Lauren Petty, Geosyntec	ן ו	tion:	
5		2	1000yake	A			C			1	2.					17.00	TIME	START	Q	11				synte	L		
SIGNATURE OF SAMPLER:		8	K	MIN				-		1	3					8			COLLECTED		1	ł	1	0	ł		
ATU			Ľ				1			$ \rangle$	0					heapled	DATE		CTEC	П			1			2	WO#:2624803
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Page 13 of 14

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

Data Validation Reports

Geosyntec[▷] consultants

Memorandum

Date: October 8, 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 2622317, 2622318, 2622352, 2622353, 2622354, 2622355, 2622398, 2622399, 2622400, 2622401, 2622402 and 2622403

SITE: Plant Hammond AP

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fourteen aqueous samples and two equipment blanks, collected 21-23 August 2019, as part of the Plant Hammond AP onsite 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
- Fluoride 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); 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);

Laboratory ID	Client ID
2622317001	HGWA-111
2622317002	HGWA-112
2622317003	HGWA-113
2622318001	HGWA-111
2622318002	HGWA-112
2622318003	HGWA-113
2622352001	HGWA-122
2622352002	HGWC-121A
2622352003	HGWC-120
2622353001	HGWA-122
2622353002	HGWC-121A
2622353003	HGWC-120
2622354001	HGWC-117
2622354002	HGWC-101
2622354003	HGWC-118
2622354004	HGWC-103

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2622354005	HGWC-105
2622355001	HGWC-117
2622355002	HGWC-101
2622355003	HGWC-118
2622355004	HGWC-103
2622355005	HGWC-105
2622398001	HGWC-124
2622399001	HGWC-124
2622400001	EB-01
2622400002	EB-02
2622401001	EB-01
2622401002	EB-02
2622402001	HGWC-107
2622402002	HGWC-109
2622402001	HGWC-107
2622402002	HGWC-109

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:

- 2622317, 2622318, 2622352, 2622353, 2622354 and 2622355: The relinquishing signature, date and time were missing for the final sample transfer on the COCs.
- 2622354 and 2622355: The collection time of HGWC-103 was listed as 1430 on the label and 1450 on the COC. The sample was logged in per the COC.
- 2622354, 2622355, 2622402 and 2622403: The years were missing from the start and end collection times from some or all of the samples.

- 2622400 and 2622401: There were time discrepancies between the relinquished by and received by times. For the first sample transfer the relinquished by time was documented as 08/23/19 1530 and the received by time was documented as 08/23/19 1540. For the second sample transfer the relinquished by time was documented as 08/26/19 0815 and the received by time was documented as 08/26/19 0815 and the received by time was documented as 08/26/19 1830.
- 2622402 and 2622403: There were time discrepancies between the relinquished by and received by times. For the second sample transfer the relinquished by time was documented as 08/23/19 1530 and the received by time was documented as 08/23/19 1540. For the third sample transfer the relinquished by time was documented as 08/26/19 0815 and the received by time was documented as 08/26/19 0815

1.0 METALS

The samples were analyzed for metals 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 (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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
- \otimes 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 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 34179, 34320 and 34496). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

2622317: Antimony was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 34179. Since antimony was not detected in the associated samples, no qualifications were applied to the data.

2622352 and 2622354: Chromium was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 34320. Therefore, the chromium concentrations in the associated samples less than five times the method blank concentration were 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**
HGWA-122	Chromium	0.00060	J	0.0006	U*	BL
HGWC-120	Chromium	0.00072	J	0.00072	U*	BL
HGWC-101	Chromium	0.00064	J	0.00064	U*	BL
HGWC-103	Chromium	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 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three batch MS/MSD pairs were 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). Three 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 set, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs.

1.7 Field Blank

A field blank was not collected with the sample set.

1.8 <u>Field Duplicate</u>

A field duplicate was not collected with the sample set.

1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated non-detect results were not reported.

1.10 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag B used in the level II reports were not included in the EDDs. In addition, there were project 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 (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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 <u>Overall Assessment</u>

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 <u>Holding Time</u>

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 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 34231, 34265 and 34391). Mercury was not detected in the method blanks above the MDL.

2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three batch MS/MSD pairs were 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 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

2.6 Equipment Blank

Two equipment blanks were collected with the sample set, EB-01 and EB-02. Mercury was not detected in the equipment blanks above the MDL.

2.7 Field Blank

A field blank was not collected with the sample set.

2.8 Field Duplicate

A field duplicate was not collected with the sample set.

2.9 <u>Sensitivity</u>

The samples were reported to the MDL. No elevated non-detect results were reported.

2.10 <u>Electronic Data Deliverables Review</u>

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 project 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 FLUORIDE

The samples were analyzed for fluoride by EPA method 300.0.

The areas of data review are listed below. A leading check mark (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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 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 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 34532, 34533 and 34680). 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). One sample set specific MS was reported using sample HGWC-107. The recovery result was within the laboratory specified acceptance criteria.

Two batch MSs and three 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 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

3.6 <u>Laboratory Duplicate</u>

Laboratory duplicates were not reported with the data.

3.7 Equipment Blank

Two equipment blanks were collected with the sample set, EB-01 and EB-02. Fluoride was not detected in the equipment blanks above the MDL.

3.8 Field Blank

A field blank was not collected with the sample set.

3.9 Field Duplicate

A field duplicate was not collected with the sample set.

3.10 Sensitivity

The samples were reported to the MDL. No elevated non-detect results were reported.

3.11 <u>Electronic Data Deliverables Review</u>

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 project 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 (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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
- \otimes 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 <u>Holding Times</u>

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 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the radium-228 data (batches 358895, 358894 and 359966). Three method blanks were reported for the radium-226 data (batches 359801, 359490 and 359964). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

2622318, 2622355 and 2622399: Radium-226 (0.563 pCi/L) was detected at a concentration greater than the MDC in the method blank in batch 359801. Therefore, the radium-226 concentration in the associated sample greater than the MDC and with a normalized absolute difference (NAD) less than 2.58 was U* qualified as not detected at the reported concentration. Also, samples with a combined radium 226 + 228 concentration greater than the MDC with a radium-228 concentration less than the MDC and a U* qualified radium-226 concentration were U* qualified as not detected at the reported concentration.

2622353: Radium-228 (0.862 pCi/L) was detected at a concentration greater than the MDC in the method blank in batch 358894. Therefore, the radium-228 concentration in the associated sample greater than the MDC and with a 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
HGWA-111	Radium-226	0.492	NA	0.492	U*	BL
HGWA-112	Radium-226	0.417	NA	0.417	U*	BL
HGWA-122	Radium-228	0.886	NA	0.886	U*	BL
HGWC-101	Radium-226	0.474	NA	0.474	U*	BL
HGWC-118	Radium-226	0.492	NA	0.492	U*	BL
HGWC-103	Radium-226	0.434	NA	0.434	U*	BL
HGWC-124	Radium-226	0.450	NA	0.450	U*	BL
HGWC-124	Combined Radium 226 + 228	0.834	NA	0.834	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 <u>Laboratory Control Sample</u>

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. One LCS and two 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.

4.6 <u>Laboratory Duplicate</u>

Four batch laboratory duplicates were reported for radium-226 and one batch laboratory duplicate was 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.

4.7 <u>Tracers and Carriers</u>

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.

4.8 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 blank above the MDCs, with the following exception.

Radium-226 (0.539 pCi/L) was detected at a concentration greater than the MDC in EB-02. Therefore, the radium-226 concentration in the associated sample greater than the MDC and with a NAD less than 2.58 was U* qualified as not detected at the reported concentration. Also, samples with combined radium 226 + 228 concentrations greater than the MDC with a radium-228 concentration less than the MDC and a U* qualified radium-226 concentration were U* qualified as not detected at the reported concentration.

Sample	Analyte	Laborator y Result (pCi/L)	Laborator y Flag	Validatio n Result (pCi/L)	Validatio n Qualifier	Reaso n Code
HGWA-111	Radium-226	0.492	NA	0.492	U*	BE
HGWA-112	Radium-226	0.417	NA	0.417	U*	BE
HGWC-121A	Radium-226	0.635	NA	0.635	U*	BE
HGWC-121A	Combined Radium 226 + 228	1.30	NA	1.30	U*	BE
HGWC-120	Radium-226	0.845	NA	0.845	U*	BE
HGWC-120	Combined Radium 226 + 228	1.35	NA	1.35	U*	BE
HGWC-101	Radium-226	0.474	NA	0.474	U*	BE
HGWC-118	Radium-226	0.492	NA	0.492	U*	BE
HGWC-103	Radium-226	0.434	NA	0.434	U*	BE
HGWC-124	Radium-226	0.450	NA	0.450	U*	BE
HGWC-124	Combined Radium 226 + 228	0.834	NA	0.834	U*	BE
HGWC-107	Radium-226	0.502	NA	0.502	U*	BE
HGWC-107	Combined Radium 226 + 228	1.69	NA	1.69	J	BE

pCi/L- picocuries per liter NA-not applicable

4.9 Field Blank

A field blank was not collected with the sample set.

4.10 Field Duplicate

A field duplicate was not collected with the sample set.

4.11 Sensitivity

The samples were reported to the MDCs. No elevated non-detect results were reported.

4.12 <u>Electronic Data Deliverables Review</u>

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

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

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.

Geosyntec[▷]

consultants

Memorandum

Date:	20 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 2624782, 2624784, 2624785, 2624786, 2624787, 2624788, 2624791, 2624792, 2624799, 2624800, 2624802 and 2624803

SITE: Plant Hammond AP3/4

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fifteen aqueous samples, one field duplicate sample and one field blank, collected 21-23 October 2019, as part of the Plant Hammond AP3/4 on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Mercury by USEPA Method 7470A
- Total Dissolved Solids (TDS) by Standard Method 2540C
- 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. Plant Hammond AP3/4 Data Validation 20 January 2020 Page 2

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).

Laboratory ID	Client ID
2624782001	HGWA-122
2624782002	HGWC-124
2624782003	HGWC-121A
2624784001	HGWA-122
2624784002	HGWC-124
2624784003	HGWC-121A
2624785001	HGWC-120
2624785002	FD-01
2624786001	HGWC-120
2624786002	FD-01
2624787001	HGWA-111
2624788001	HGWA-111
2624791001	HGWC-101
2624791002	HGWC-102
2624791003	HGWC-105
2624791004	HGWC-103
2624792001	HGWC-101

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2624792002	HGWC-102
2624792003	HGWC-105
2624792004	HGWC-103
2624799001	HGWA-112
2624799002	HGWC-117
2624799003	HGWC-118
2624799004	HGWA-113
2624799005	HGWC-109
2624799006	HGWC-107
2624800001	HGWA-112
2624800002	HGWC-117
2624800003	HGWC-118
2624800004	HGWA-113
2624800005	HGWC-109
2624800006	HGWC-107
2624802001	FB-01
2624803001	FB-01

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2624785 and 2624786: There was no time of collection listed for the field duplicate, FD-01. The laboratory assigned the collection time of 00:00. Also, the year was not documented for the relinquished by and received by times for the second transfer.
- 2624787 and 2624788: The year was not documented for the sample collection time and relinquished by time for the sample transfer.

- 2624791, 2624792, 2624799 and 2624800: The year was not documented for the sample collection times for samples HGWC-101, HGWC-102, HGWA-112, HGWC-117 and HGWC-118 and the relinquished by and received by times for the sample transfers.
- 2624802 and 2624803: The year was not documented for the received by time for the first transfer and the relinquished by and received by times for the second transfer.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3005A/6020B. (Mercury was evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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
- \otimes 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 the dataset is 100%.

1.2 <u>Holding Time</u>

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 <u>Method Blank</u>

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 37696 and 38024). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

2624786, 2624792, 2624800 and 2624803: Boron (0.0059 mg/L) was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 38024. Therefore, the boron 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-112	Boron	0.016	JB	0.016	U*	BL
HGWA-113	Boron	0.010	JB	0.010	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 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two batch MS/MSD pairs were 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 <u>Laboratory Control Sample (LCS)</u>

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 Equipment Blank

An equipment blank was not collected with the sample set.

1.7 Field Blank

One field blank was collected with the sample sets, FB-01. Metals were not detected in the field blank above the MDLs, with the following exception.

Calcium (0.011 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in FB-01. Since calcium was detected in the associated samples at concentrations greater than five times the field blank concentration, no qualifications were applied to the data.

1.8 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision [relative percent difference (RPD) \leq 20% or the difference between the concentrations < RL] was demonstrated between the field duplicate and the original sample HGWC-120.

1.9 <u>Sensitivity</u>

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 flag B used in the level II reports was not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

2.0 MERCURY

The samples were analyzed by USEPA method 7470A.

The areas of data review are listed below. A leading check mark (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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 the dataset is 100%.

2.2 <u>Holding Time</u>

The holding time for the 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 <u>Method Blank</u>

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 37720). Mercury was not detected in the method blank above the MDL.

2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

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 <u>Laboratory Control Sample</u>

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 result was within the laboratory specified acceptance criteria.

2.6 Equipment Blank

An equipment blank was not collected with the sample set.

2.7 Field Blank

One field blank was collected with the sample sets, FB-01. Mercury was not detected in the field blank above the MDL.

2.8 <u>Field Duplicate</u>

The field duplicate was not analyzed for mercury.

2.9 <u>Sensitivity</u>

The samples were reported to the MDL. Elevated nondetect results were not 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. No discrepancies were identified between the level II reports and the EDDs.

3.0 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 (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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 this analysis, for the dataset is 100%.

3.2 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

3.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the anions (batches 37730, 37858 and 37870). The wet chemistry parameters were not detected in the method blanks above the MDLs, with the following exceptions.

2624784 and 2624787: Chloride (0.034 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 37730. 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.

2624786: Chloride (0.0032 mg/L) and sulfate (0.36 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 37858. 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.

3.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

One sample set MS/MSD pair using sample FD-01 and one MS using sample HGWC-109 were reported for the anions. The RPD and recovery results were within the laboratory specified acceptance criteria, with the following exception.

2624800: The recovery of sulfate in the MS using sample HGWC-109 was low and outside the laboratory specified acceptance criteria. Therefore, the chloride concentration in sample HGWC-109 was J qualified as estimated.

One batch MS and two 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.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWC-109	Sulfate	23.2	M1	23.2	J	М-

mg/L- milligram per liter

M1-laboratory flag indicating MS recovery exceeded the QC limits

3.5 <u>Laboratory Control Sample</u>

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.

3.6 <u>Laboratory Duplicate</u>

Four sample set specific laboratory duplicates were reported for TDS using samples HGWA-122, HGWC-120, HGWA-113 and HGWC-109. The RPD results were within the laboratory specified acceptance criteria.

Two 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

An equipment blank was not collected with the sample set.

3.8 Field Blank

One field blank was collected with the sample sets, FB-01. The wet chemistry parameters were not detected in the field blank above the MDLs.

3.9 <u>Field Duplicate</u>

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-120.

3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

3.11 <u>Electronic Data Deliverables Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II report was not included in the EDDs. 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 (\checkmark) indicates an area of review in which the data were acceptable. A preceding crossed circle (\otimes) 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
- \otimes 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 <u>Holding Times</u>

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 <u>Method Blank</u>

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 for the radium-228 data (batches 369306 and 369311). Two method blanks were reported for the radium-226 data (batches 369307 and 369310). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exception.

2624785, 2624791 and 2624799: Radium-226 was detected at concentrations greater than the MDC in the method blank in batch 369310. Therefore, the radium-226 concentrations in the associated samples less than five times the method blank concentrations were U* qualified as not detected.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWC-120	Radium-226	0.760	NA	0.760	U*	BL
FD-01	Radium-226	0.420	NA	0.420	U*	BL
HGWC-103	Radium-226	0.571	NA	0.571	U*	BL
HGWC-118	Radium-226	0.424	NA	0.424	U*	BL
HGWA-113	Radium-226	0.401	NA	0.401	U*	BL
HGWC-109	Radium-226	0.545	NA	0.545	U*	BL

pCi/L-picocuries per liter NA-not applicable

4.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

MS/MSD pairs were not reported with the data.

4.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Two LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma (2 σ)] results were within the laboratory specified acceptance criteria.

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for radium-226 using sample BGWC-19. The RER (2σ) result was within the laboratory specified acceptance criteria.

Two 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. The recovery and RPD results were within the laboratory specified acceptance criteria.

4.7 <u>Tracers and Carriers</u>

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.

4.8 Equipment Blank

An equipment blank was not collected with the sample set.

4.9 Field Blank

One field blank was collected with the sample sets, FB-01. Radium-226 and radium-228 were not detected in the field blank above the MDCs.

4.10 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision (RER $(2\sigma) < 3$) was demonstrated between the field duplicates and the original samples BGWA-29, HGWC-120.

4.11 <u>Sensitivity</u>

The samples were reported to the MDCs. No elevated nondetect results were reported.

4.12 <u>Electronic Data Deliverables Review</u>

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."
Н	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 B2 Field Data Sheets Date: 2019-08-21 14:56:39

Project Information:		Pump Information:	
Operator Name	Chad Russo	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	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWA-111	Final Pumping Rate	150 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	14.60 ft	Total Volume Pumped	8.25 L

Low-Flow Sa	mpling Stabiliz	ation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:33:14	600.02	22.43	6.29	144.85	0.42	15.44	4.22	33.11
Last 5	14:38:14	900.02	22.42	6.45	189.87	0.43	15.44	4.11	31.71
Last 5	14:43:14	1200.02	22.55	6.54	198.18	0.33	15.45	3.95	30.63
Last 5	14:48:14	1500.02	22.60	6.56	201.18	0.65	15.45	3.92	31.16
Last 5	14:53:14	1800.02	22.73	6.60	206.94	0.55	15.44	3.88	30.60
Variance 0			0.13	0.09	8.31			-0.16	-1.08
Variance 1			0.05	0.02	3.00			-0.03	0.53
Variance 2			0.13	0.03	5.76			-0.04	-0.56

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 43.21 ft.

Grab Samples HGWA-111 Grab Date: 2019-08-21 17:45:59

Company Name Geo Project Name GP-		0"		Pump Mod Tubing Typ Tubing Dia	Pump Information:Pump Model/TypeAlexisTubing TypepolyethyleneTubing Diameter0.17 inTubing Lengthft			
Turbidity Make/Model	LaMo	otte 2020we		Pump place	ement from TOC		ft	
Well Information:Well IDWell diameter2 irWell Total DepthftScreen LengthDepth to Water15.0				Stabilizatio	ing Rate	(100 mL/min 0.09 L 300 sec 3.6 in 3.25 L	
Low-Flow Sampling Stab								
Time Stabilization	Elapsed	Temp C +/- 0.5	рН +/- 0.1	+/- 5%	5/cm Turb NTU +/- 10	DTW ft	RDO mg/L +/- 10%	ORP mV +/- 10
Last 5 16:41:11 Last 5 16:46:11 Last 5 16:51:11 Last 5 Last 5	300.03 600.02 900.02	24.62 25.00 25.48	5.84 5.81 5.80	74.78 74.14 73.69	0.28 2.80 0.60	16.12 16.18 16.12	1.24 1.22 1.17	37.43 36.38 35.73
Variance 0 Variance 1		nan 0.38	nan -0.03	nan -0.64			nan -0.03	nan -1.05

-0.01

0.49

Notes

Variance 2

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 39.90 ft.

-0.45

-0.05

-0.66

Grab Samples HGWA-112 Grab Date: 2019-08-21 17:48:26

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	613229		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWA-113	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	12.42 ft	Total Volume Pumped	7.5 L

Low-Flow Sar	mpling Stabiliz	ation Summary	,						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:32:54	1199.92	24.59	6.06	103.36	0.18	19.22	1.81	72.12
Last 5	16:37:54	1499.91	24.76	6.07	101.77	0.07	19.52	1.84	71.80
Last 5	16:42:54	1799.90	24.93	6.06	102.46	0.10	19.81	1.97	71.78
Last 5	16:47:54	2099.89	25.19	6.04	101.66	0.20	20.08	1.91	71.93
Last 5	16:52:54	2399.88	25.15	6.05	101.40	0.28	20.34	1.85	71.32
Variance 0			0.17	-0.01	0.69			0.13	-0.02
Variance 1			0.26	-0.01	-0.81			-0.06	0.15
Variance 2			-0.05	0.01	-0.25			-0.06	-0.61

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 36.11 ft.

Grab Samples HGWA-113 Grab Date: 2019-08-22 13:58:13

Project Information:		Pump Information:	
Operator Name	Chad Russo	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	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWC-101	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	13.58 ft	Total Volume Pumped	6.5 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:21:56	900.02	24.71	5.42	196.82	1.41	16.19	0.72	96.99
Last 5	12:26:56	1200.02	25.07	5.39	199.48	0.54	16.38	0.64	96.59
Last 5	12:31:56	1500.02	25.00	5.40	194.59	3.11	16.54	0.62	95.12
Last 5	12:36:56	1800.03	25.17	5.36	196.69	3.00	16.64	0.57	94.74
Last 5	12:41:56	2100.03	25.33	5.39	192.55	2.45	17.76	0.56	93.28
Variance 0			-0.07	0.02	-4.90			-0.02	-1.47
Variance 1			0.16	-0.04	2.11			-0.05	-0.37
Variance 2			0.16	0.03	-4.15			-0.01	-1.47

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 37.96 ft.

Grab Samples HGWC-101 Grab Date: 2019-08-22 16:08:37

Project Information:		Pump Information:	
Operator Name	Chad Russo	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	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWC-103	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	14.38 ft	Total Volume Pumped	4.5 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:05:07	300.03	22.33	5.58	716.13	5.92	14.48	0.71	137.24
Last 5	14:10:07	600.02	22.29	5.58	708.82	6.01	14.47	0.53	135.35
Last 5	14:15:07	900.02	22.24	5.57	711.39	4.70	14.48	0.89	133.68
Last 5	14:20:07	1200.03	22.10	5.56	705.24	3.89	14.48	0.84	132.68
Last 5	14:25:07	1500.03	22.44	5.55	703.84	4.27	14.48	0.70	131.21
Variance 0			-0.05	-0.01	2.56			0.36	-1.68
Variance 1			-0.14	-0.01	-6.15			-0.06	-0.99
Variance 2			0.34	-0.01	-1.40			-0.14	-1.48

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 36.70 ft.

Grab Samples HGWC-103 Grab

SmarTroll log output unavailable for the sampling of well HGWC-105. Paper purge log provided.

					GR	OUNDWATER SAM	IPLING LOG SI	HEET		
Client:		Plant He DIGWC-	n Coll	pany		Project No.	GW65	21		Sampling Date: 8/2-2/19
Site:		Plant He	immond	ι <i>/</i>			AP-4		5	Sampler's Name: Chand Russ
Well ID:		HGWC-	105			Pump Type/Model:	persta	HK/	5. 	Sample Collection Time: +7 1640
Total Depth (ft):		44.85	,			Tubing Material:			- Sa	mple Purge Rate (mL/min): 100
Depth to Water (ft):		18.2			Pu	ump Intake Depth (ft);	39		-	Sample ID: HGWG-65
Well Diameter (in):		2				start/Stop Purge Time:		715	-	Laboratory Analyses: APD IV
Well Volume (gal) = 0).041d ² h:	4,3	7			Purge Rate (mL/min):				
Well Volume (L) = ga		16.5	4			tal Purge Volume (L):				
d = well diameter (inc							1	ell Volume Other:	-	QA/QC Collected?
Well Type:		StickUp	0 - 7			Sampling Method	\sim		-	QA/QC I.D.
Well Lock:	Yes	No					timp tentering			4/1/40 ID
Well Cap Condition:	Gor	Replace			All sample co	ontainers requiring c	hemical preserv	ation properly preser	ved prior to demo	b from well? (Yes) No
Well Tag Present:	Yes	No		2						
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.)
1617	6.02	207.90		0.94	25.76	372	19.43	100		
622	6.02	205-00	117.80	0.74	25.78	2.37	18.42	100	1.75	
1627	6.01		115.80	0.49	25.70	2.74	18.42	100	2.25	
1637	6.04	263.10	113.10	0.48	26.35	8 3.29	18.40	100	3.25	
								· · · · · · · · · · · · · · · · · · ·		
							P			
							115	19		
	2							0.122/1		
								-01-		
										<u> </u>
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	

Date: 2019-08-23 09:43:31

Project Information:Operator NameChad RussoCompany NameGeosyntec ConsultantsProject NameGP-Plant HammondSite NamePlant HammondLatitude0° 0' 0"Longitude0° 0' 0"Sonde SN541714Turbidity Make/ModelLaMotte 2020we			Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length Pump placement from TOC			Alexis polyethylene 0.17 in ft ft			
Well ID Well diamete Well Total De Screen Leng	Yell Information: HGWC-107 Yell ID HGWC-107 Yell diameter 2 in Yell Total Depth ft			Pumping Information:		300 sec 3.6 in			
Low-Flow Sa		ation Summary							
Stabilization	Time	Elapsed	Temp C +/- 0.5	рН +/- 0.1	SpCond µS/ +/- 5%	/cmTurb NTU +/- 10	DTW f	t RDO mg/L +/- 10%	ORP mV +/- 10
Last 5 Last 5 Last 5 Last 5 Last 5 Last 5	08:50:59 08:55:59 09:00:59	300.06 600.02 900.02	21.31 21.19 21.24	6.26 6.26 6.26	423.07 422.22 420.90	0.59 0.76 1.35	15.50 15.50 15.50	0.31 0.24 0.21	113.40 101.09 94.77
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.12	0.00	-0.85			-0.07	-12.31
Variance 2			0.05	0.01	-1.32			-0.03	-6.32

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 38.08 ft.

Grab Samples HGWC-107 Grab Date: 2019-08-23 10:42:23

Project Information:Operator NameChad RussoCompany NameGeosyntec ConsultantsProject NameGP-Plant HammondSite NamePlant HammondLatitude0° 0' 0"Longitude0° 0' 0"Sonde SN541714			Pump Infor Pump Mode Tubing Typ Tubing Diar Tubing Len	el/Type e neter		Alexis polyethylene 0.17 in ft			
Turbidity Ma	ke/Model	LaN	otte 2020we		Pump place	ement from TOC		ft	
Well Informa Well ID Well diamete Well Total De Screen Leng Depth to Wat	IDHGWC-109diameter2 inTotal Depthftten Length10 ft		Final Pump Total Syste Calculated Stabilizatio	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped		100 mL/min 0.09 L 300 sec 3.6 in 4.25 L			
Low-Flow Sa	mpling Stabiliz								
Stabilization	Time	Elapsed	Temp C +/- 0.5	рН +/- 0.1	SpCond µS, +/- 5%	/cmTurb NTU +/- 10	DTW ft	RDO mg/L +/- 10%	ORP mV +/- 10
Last 5 Last 5 Last 5 Last 5 Last 5 Last 5	10:04:28 10:09:28 10:14:28	300.05 600.02 900.02	20.77 20.48 20.27	6.69 6.73 6.76	365.18 367.28 365.30	3.66 2.87 2.45	10.17 10.18 10.17	0.25 0.17 0.13	10.59 0.01 -6.44
Variance 0			nan	nan	nan			nan	nan
Variance 1 Variance 2			-0.29 -0.21	0.03 0.03	2.11 -1.99			-0.08 -0.04	-10.58 -6.45
variance Z			-0.21	0.05	-1.99			-0.04	-0.45

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 31.02 ft.

Grab Samples HGWC-109 Grab Date: 2019-08-22 10:10:05

Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN Turbidity Make/Model	Chad Russo Geosyntec Consultan GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0" 541714 LaMotte 2020we	ts	Tubing Type Tubing Diameter Tubing Length			Alexis polyethylene 0.17 in ft ft		
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	ell Information: HI ID HGWC-117 HI diameter 2 in HI Total Depth ft reen Length 10 ft		Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped			100 mL/min 0.09 L 300 sec 3.6 in 3.5 L		
Low-Flow Sampling Stabilization Sun								
Time Elapse Stabilization	d Temp C +/- 0.5	рН +/- 0.1	SpCond µS/c +/- 5%	mTurb NTU +/- 10	DTW ft	t RDO mg/L +/- 10%	ORP mV +/- 10	
Last 5 09:16:40 300.00 Last 5 09:21:40 600.02 Last 5 09:26:40 900.02 Last 5 Last 5	6 21.66 2 21.78	5.50 5.54 5.53	245.91 245.19 243.65	0.31 0.68 0.43	17.05 17.05 17.05	0.24 0.25 0.24	78.38 75.04 74.48	
Variance 0 Variance 1 Variance 2	nan 0.12 0.10	nan 0.03 -0.00	nan -0.72 -1.54			nan 0.01 -0.02	nan -3.35 -0.56	

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 39.92 ft.

Grab Samples HGWC-117 Grab Date: 2019-08-22 11:36:25

Project Information:Operator NameChad RussoCompany NameGeosyntec ConsultantsProject NameGP-Plant HammondSite NamePlant HammondLatitude0° 0' 0"Longitude0° 0' 0"Sonde SN541714Turbidity Make/ModelLaMotte 2020we			Tubing Type pol						
Well ID Well diamete	II Information: II ID HGWC-118 II diameter 2 in II Total Depth ft reen Length 10 ft		Pump placement from TOC Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped		200 mL/min 0.09 L 300 sec 3.6 in 3 L				
Low-Flow Sa		ation Summary							
Stabilization	Time	Elapsed	Temp C +/- 0.5	рН +/- 0.1	SpCond µS/ +/- 5%	/cmTurb NTU +/- 10	DTW ft	t RDO mg/L +/- 10%	ORP mV +/- 10
Last 5 Last 5 Last 5 Last 5 Last 5 Last 5 Last 5	10:47:27 10:52:27 10:57:27	300.03 600.02 900.02	22.71 22.51 22.37	6.92 6.91 6.93	494.64 504.01 506.65	0.52 0.52 0.74	13.96 13.96 13.96	0.47 0.25 0.14	90.30 90.26 90.68
Variance 0			nan	nan	nan			nan	nan
Variance 1 Variance 2			-0.20 -0.14	-0.01 0.02	9.37 2.64			-0.23 -0.11	-0.04 0.42
			0.14	0.02	2.01			0.11	0.72

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 250-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A). Total depth = 40.82 ft.

Grab Samples HGWC-118 Grab Date: 2019-10-21 15:49:03

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	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWA-111	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	15.95 ft	Total Volume Pumped	17 L

Low-Flow Sar	npling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:10:03	2400.00	19.68	6.98	311.16	8.39	17.16	3.34	64.34
Last 5	15:15:03	2699.99	19.60	6.98	312.60	8.92	17.16	3.34	64.86
Last 5	15:20:03	2999.99	19.55	6.98	312.38	8.22	17.16	3.34	65.14
Last 5	15:25:03	3299.99	19.59	7.01	316.53	6.92	17.16	3.32	64.94
Last 5	15:30:03	3599.99	19.53	7.02	318.32	4.98	17.16	3.31	65.23
Variance 0			-0.04	0.00	-0.22			0.00	0.29
Variance 1			0.04	0.02	4.15			-0.02	-0.20
Variance 2			-0.05	0.02	1.79			-0.02	0.29

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 43.24'

Grab Samples HGWA-111 Grab Date: 2019-10-22 10:51:13

Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN Turbidity Make/Model	Chad Russo Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0" 643819 LaMotte 2020we	Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length Pump placement from TOC	Alexis polyethylene 0.17 in 30 ft 30 ft		
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	HGWA-112 2 in ft 10 ft 16.83 ft	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	150 mL/min 0.2239027 L 300 sec 3.6 in 2.5 L		
Low-Flow Sampling Stabilization Sur	nmary				
Time Elapse		SpCond µS/cmTurb NTU DTW ft	3,		
Stabilization	+/- 0.5 +/- 0.1	+/- 5% +/- 10	+/- 10% +/- 10		
Last 5 09:58:01 300.0 Last 5 10:03:01 600.0		82.17 0.82 17.65 81.15 0.75 17.69	1.66 62.05 1.65 61.29		
Last 5 10:08:01 900.0 Last 5 Last 5		80.76 1.04 17.72	1.69 61.17		
Variance 0	nan nan	nan	nan nan		
Variance 1	-0.13 -0.01	-1.02	-0.01 -0.76		
Variance 2	-0.09 -0.01	-0.39	0.04 -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 = 39.92'

Grab Samples HGWA-112 Grab Date: 2019-10-22 11:25:42

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	31.53 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	31.53 ft
Well Information:		Pumping Information:	
Well ID	HGWA-113	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6257317 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.98 ft	Total Volume Pumped	6.5 L

Low-Flow Sa	mpling Stabiliz	ation Summary	1						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:30:09	2699.94	20.47	5.97	93.99	11.21	18.01	1.31	-160.79
Last 5	10:35:09	2999.93	20.43	5.97	95.23	6.83	18.23	1.15	-161.28
Last 5	10:40:09	3299.92	20.39	5.97	96.44	4.98	18.41	1.01	-161.45
Last 5	10:45:09	3599.91	20.74	5.97	97.16	4.91	18.60	0.98	-164.42
Last 5	10:50:09	3899.90	21.05	5.98	97.58	4.93	18.73	0.97	-170.69
Variance 0			-0.04	0.00	1.21			-0.14	-0.17
Variance 1			0.35	-0.00	0.71			-0.03	-2.98
Variance 2			0.31	0.01	0.42			-0.01	-6.27

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), CI, 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 = 36.21'

Grab Samples HGWA-113 Grab Date: 2019-10-23 11:33:45

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	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33 ft
Well Information:		Pumping Information:	
Well ID	HGWC-101	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.632293 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.23 ft	Total Volume Pumped	4.5 L

Low-Flow Sa	mpling Stabiliz	zation Summar	y						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:26:48	300.07	17.68	5.31	297.72	2.74	17.56	0.29	74.66
Last 5	10:31:48	600.02	18.28	5.30	312.88	2.28	17.55	0.29	76.20
Last 5	10:36:48	900.01	18.50	5.32	316.85	1.70	17.58	0.27	76.96
Last 5	10:41:48	1200.01	18.64	5.33	314.30	1.42	17.61	0.29	77.62
Last 5									
Variance 0			0.60	-0.01	15.16			-0.01	1.55
Variance 1			0.22	0.02	3.97			-0.01	0.76
Variance 2			0.13	0.01	-2.54			0.02	0.65

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 38.01'

Grab Samples HGWC-101 Grab Date: 2019-10-23 09:43:29

Project Information:		Pump Information:	
Operator Name	Chad Russo	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	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33 ft
Well Information:		Pumping Information:	
Well ID	HGWC-102	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.237293 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.45 ft	Total Volume Pumped	4.5 L

Low-Flow Sar	npling Stabiliz	ation Summary	/						
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:51:29	600.02	17.05	5.70	869.08	1.66	15.64	0.28	74.70
Last 5	08:56:29	900.02	17.05	5.70	917.48	1.09	15.64	0.23	76.35
Last 5	09:01:29	1200.02	17.02	5.69	987.24	1.19	15.64	0.23	81.32
Last 5	09:06:29	1500.01	17.10	5.68	987.95	1.09	15.64	0.22	82.93
Last 5	09:11:29	1800.01	17.10	5.68	986.80	0.85	15.64	0.19	84.19
Variance 0			-0.03	-0.01	69.75			0.00	4.97
Variance 1			0.08	-0.00	0.71			-0.00	1.61
Variance 2			-0.00	0.00	-1.15			-0.04	1.25

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 36.9'

Grab Samples HGWC-102 Grab Date: 2019-10-23 11:38:05

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	32.68 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	32.68 ft
Well Information:		Pumping Information:	
Well ID	HGWC-103	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6308647 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.70 ft	Total Volume Pumped	8 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:44:07	3599.91	16.82	5.49	701.07	8.71	15.78	0.24	-170.93
Last 5	10:49:07	3899.90	16.75	5.49	701.23	7.21	15.78	0.25	-170.94
Last 5	10:54:07	4199.90	16.82	5.49	699.65	7.03	15.78	0.25	-171.17
Last 5	10:59:07	4499.89	16.82	5.49	699.13	6.09	15.78	0.26	-171.41
Last 5	11:04:07	4799.87	16.82	5.49	698.06	4.93	15.78	0.26	-171.40
Variance 0			0.07	-0.00	-1.58			0.00	-0.23
Variance 1			0.00	-0.00	-0.52			0.01	-0.23
Variance 2			0.00	-0.00	-1.07			0.01	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 = 37.65'

Grab Samples HGWC-103 Grab Date: 2019-10-23 09:22:18

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	39.67 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	39.67 ft
Well Information:		Pumping Information:	
Well ID	HGWC-105	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.662064 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	20.33 ft	Total Volume Pumped	4 L

Low-Flow Sa	mpling Stabiliz	ation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:28:40	1199.99	16.05	6.49	613.24	14.30	20.45	0.54	-167.24
Last 5	08:33:40	1499.98	16.14	6.46	616.07	9.23	20.45	0.38	-168.30
Last 5	08:38:40	1799.97	16.15	6.46	616.42	6.21	20.45	0.32	-168.90
Last 5	08:43:40	2099.96	16.10	6.46	617.32	4.97	20.45	0.30	-169.00
Last 5	08:48:39	2399.95	16.19	6.46	614.51	4.73	20.45	0.28	-169.45
Variance 0			0.01	-0.00	0.35			-0.06	-0.60
Variance 1			-0.04	-0.00	0.90			-0.02	-0.11
Variance 2			0.09	-0.00	-2.81			-0.02	-0.45

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 = 44.92'

Grab Samples HGWC-105 Grab Date: 2019-10-22 16:02:49

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	33.20 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33.20 ft
Well Information:		Pumping Information:	
Well ID	HGWC-107	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6331857 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	17.51 ft	Total Volume Pumped	3 L

Low-Flow Sar	npling Stabiliz	ation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:07:56	600.01	21.94	6.30	413.12	1.53	17.51	0.99	-99.10
Last 5	15:12:56	900.00	21.83	6.24	414.12	1.76	17.51	0.61	-99.27
Last 5	15:17:56	1199.99	21.72	6.22	413.54	2.43	17.51	0.44	-96.36
Last 5	15:22:56	1499.98	21.68	6.20	413.28	2.46	17.51	0.36	-93.79
Last 5	15:27:56	1799.97	21.49	6.19	410.95	2.55	17.51	0.32	-92.94
Variance 0			-0.11	-0.03	-0.58			-0.18	2.91
Variance 1			-0.05	-0.02	-0.26			-0.07	2.57
Variance 2			-0.19	-0.01	-2.33			-0.05	0.85

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 = 38.12'

Grab Samples HGWC-107 Grab Date: 2019-10-22 14:36:48

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	26.36 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	26.36 ft
Well Information:		Pumping Information:	
Well ID	HGWC-109	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.6026558 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	11.36 ft	Total Volume Pumped	3 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:45:33	600.01	22.08	6.51	351.98	10.06	11.38	1.70	-153.01
Last 5	13:50:33	900.00	22.03	6.52	355.65	7.39	11.38	0.99	-143.29
Last 5	13:55:33	1199.99	21.54	6.54	356.67	6.27	11.38	0.54	-131.06
Last 5	14:00:33	1499.98	21.36	6.56	355.77	4.71	11.38	0.37	-118.46
Last 5	14:05:33	1799.97	21.30	6.58	353.13	4.07	11.38	0.30	-108.44
Variance 0			-0.49	0.02	1.02			-0.44	12.22
Variance 1			-0.18	0.02	-0.89			-0.17	12.60
Variance 2			-0.07	0.02	-2.64			-0.08	10.02

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 = 31.03'

Grab Samples HGWC-109 Grab Date: 2019-10-22 15:09:17

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	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWC-117	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	18.83 ft	Total Volume Pumped	39 L

Low-Flow Sa	mpling Stabiliz	ation Summary							
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:29:59	9899.92	19.19	6.16	512.49	5.91	18.83	0.12	71.73
Last 5	14:34:59	10199.92	19.17	6.16	513.10	5.70	18.83	0.12	71.86
Last 5	14:39:59	10499.91	19.19	6.16	513.00	5.65	18.83	0.11	72.01
Last 5	14:44:59	10799.91	19.19	6.16	515.05	5.15	18.83	0.12	72.30
Last 5	14:49:59	11099.91	19.24	6.17	516.86	4.91	18.83	0.12	72.36
Variance 0			0.01	-0.00	-0.10			-0.00	0.15
Variance 1			0.01	0.01	2.05			0.00	0.29
Variance 2			0.04	0.00	1.82			-0.00	0.06

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 39.94'

Grab Samples HGWC-117 Grab Date: 2019-10-22 19:09:29

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	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	HGWC-118	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	15.46 ft	Total Volume Pumped	35.5 L

Low-Flow Sar	mpling Stabiliz	zation Summary							
	Time	Elapsed	Temp C	рН	SpCond µS/	cm Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:34:19	10199.92	18.53	7.02	528.76	9.61	15.58	0.10	75.39
Last 5	18:39:19	10499.92	18.48	7.02	528.89	9.94	15.58	0.11	75.24
Last 5	18:44:19	10799.91	18.46	7.03	528.97	9.82	15.58	0.10	75.15
Last 5	18:49:19	11099.91	18.44	7.03	529.11	9.83	15.58	0.10	75.07
Last 5	18:54:19	11399.91	18.32	7.33	1.07			6.78	58.86
Variance 0			-0.02	0.00	0.08			-0.01	-0.09
Variance 1			-0.02	0.00	0.14			-0.00	-0.08
Variance 2			-0.12	0.30	-528.04			6.69	-16.21

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 = 41.80'

Grab Samples HGWC-118 Grab

APPENDIX C

Statistical Analyses

 Table C-1

 Assessment Monitoring Interwell Prediction Limit Comparison

 Plant Hammond AP-4, Floyd County, Georgia

Purpose of Sampling Event: Verification Boron (mg/L) HGWC-101 0.023 - 0.10 Boron (mg/L) HGWC-103 0.023 - 2.3 Boron (mg/L) HGWC-107 0.023 - 0.91 Boron (mg/L) HGWC-107 0.023 - 0.91 Boron (mg/L) HGWC-107 0.023 - 0.65 Boron (mg/L) HGWC-101 58.4 - 86.5 Calcium (mg/L) HGWC-103 58.4 - 88.1 Calcium (mg/L) HGWC-103 58.4 - 88.1 Calcium (mg/L) HGWC-103 58.4 - 88.1 Calcium (mg/L) HGWC-103 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 3.6 Chloride (mg/L) HGWC-103 5.7 - 3.6 Chloride (mg/L) HGWC-103 5.7 - 4.6 Chloride (mg/L) HGWC-104 5.7 - 4.5 <	Parameter	Well ID	Upper PL	Lower PL	Oct 21-23 2019		
Boron (mg/L) HGWC-103 0.023 - 2.3 Boron (mg/L) HGWC-105 0.023 - 1.3 Boron (mg/L) HGWC-107 0.023 - 0.91 Boron (mg/L) HGWC-109 0.023 - 0.32 Boron (mg/L) HGWC-117 0.023 - 0.65 Calcium (mg/L) HGWC-118 0.023 - 0.65 Calcium (mg/L) HGWC-101 58.4 - 21.9 Calcium (mg/L) HGWC-105 58.4 - 89.4 Calcium (mg/L) HGWC-107 58.4 - 42.6 Calcium (mg/L) HGWC-109 58.4 - 84.2 Chloride (mg/L) HGWC-103 5.7 - 5.5 Chloride (mg/L) HGWC-105 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 4.6 Chloride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) <th></th> <th></th> <th>Purpose of Sa</th> <th>mpling Event:</th> <th>Verification</th>			Purpose of Sa	mpling Event:	Verification		
Boron (mg/L) HGWC-105 0.023 - 1.3 Boron (mg/L) HGWC-107 0.023 - 0.91 Boron (mg/L) HGWC-109 0.023 - 0.32 Boron (mg/L) HGWC-117 0.023 - 0.65 Calcium (mg/L) HGWC-101 58.4 - 21.9 Calcium (mg/L) HGWC-103 58.4 - 86.5 Calcium (mg/L) HGWC-105 58.4 - 88.4 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-108 5.7 - 3.6 Chloride (mg/L) HGWC-103 5.7 - 3.6 Chloride (mg/L) HGWC-104 0.23 - ND Fluoride (mg/L) <td>Boron (mg/L)</td> <td>HGWC-101</td> <td>0.023</td> <td>-</td> <td>0.10</td>	Boron (mg/L)	HGWC-101	0.023	-	0.10		
Boron (mg/L) HGWC-107 0.023 - 0.91 Boron (mg/L) HGWC-109 0.023 - 0.32 Boron (mg/L) HGWC-117 0.023 - 1.0 Boron (mg/L) HGWC-118 0.023 - 0.65 Calcium (mg/L) HGWC-101 58.4 - 86.5 Calcium (mg/L) HGWC-103 58.4 - 89.4 Calcium (mg/L) HGWC-107 58.4 - 89.4 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 3.6 Chloride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-103 0.23	Boron (mg/L)	HGWC-103	0.023	-	2.3		
Boron (mg/L) HGWC-109 0.023 - 0.32 Boron (mg/L) HGWC-117 0.023 - 1.0 Boron (mg/L) HGWC-118 0.023 - 0.65 Calcium (mg/L) HGWC-101 58.4 - 21.9 Calcium (mg/L) HGWC-105 58.4 - 89.4 Calcium (mg/L) HGWC-107 58.4 - 89.4 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 6.1 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 4.6 Chloride (mg/L) HGWC-103 5.7 - 4.5 Fluoride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-107 0.23	Boron (mg/L)	HGWC-105	0.023	-			
Boron (mg/L) HGWC-117 0.023 - 1.0 Boron (mg/L) HGWC-118 0.023 - 0.65 Calcium (mg/L) HGWC-101 58.4 - 21.9 Calcium (mg/L) HGWC-103 58.4 - 86.5 Calcium (mg/L) HGWC-107 58.4 - 88.1 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-117 58.4 - 84.2 Chloride (mg/L) HGWC-103 5.7 - 5.5 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 4.6 Chloride (mg/L) HGWC-108 5.7 - 4.5 Fluoride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - ND Fluoride (mg/L)	Boron (mg/L)	HGWC-107	0.023	-	0.91		
Boron (mg/L) HGWC-118 0.023 - 0.65 Calcium (mg/L) HGWC-101 58.4 - 21.9 Calcium (mg/L) HGWC-103 58.4 - 86.5 Calcium (mg/L) HGWC-105 58.4 - 89.4 Calcium (mg/L) HGWC-107 58.4 - 42.6 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-117 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 3.6 Chloride (mg/L) HGWC-104 5.7 - 4.6 Chloride (mg/L) HGWC-107 5.7 - 4.5 Fluoride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-107 0.23 <td>Boron (mg/L)</td> <td>HGWC-109</td> <td>0.023</td> <td>-</td> <td>0.32</td>	Boron (mg/L)	HGWC-109	0.023	-	0.32		
Calcium (mg/L)HGWC-101 58.4 - 21.9 Calcium (mg/L)HGWC-103 58.4 - 86.5 Calcium (mg/L)HGWC-105 58.4 - 89.4 Calcium (mg/L)HGWC-107 58.4 - 42.6 Calcium (mg/L)HGWC-109 58.4 - 42.6 Calcium (mg/L)HGWC-117 58.4 - 84.2 Chloride (mg/L)HGWC-101 5.7 - 5.5 Chloride (mg/L)HGWC-103 5.7 - 6.1 Chloride (mg/L)HGWC-107 5.7 - 3.6 Chloride (mg/L)HGWC-107 5.7 - 3.6 Chloride (mg/L)HGWC-101 5.7 - 4.6 Chloride (mg/L)HGWC-107 5.7 - 4.5 Fluoride (mg/L)HGWC-101 0.23 -NDFluoride (mg/L)HGWC-103 0.23 -NDFluoride (mg/L)HGWC-107 0.23 -NDFluoride (mg/L)HGWC-107 0.23 - 0.047 JFluoride (mg/L)HGWC-107 7.1 5.5 5.3 pH (s.u.)HGWC-107 7.1 5.5 6.2 pH (s.u.)HGWC-107 7.1 5.5 6.2 pH (s.u.)HGWC-107 7.1 5.5 6.2 pH (s.u.)HGWC-101 7.1 5.5 6.2 pH (s.u.)HGWC-103 7.1 5.5 6.2 pH (s.u.)HGWC-103 7.1 5.5 6.2 pH (s.u.	Boron (mg/L)	HGWC-117	0.023	-	1.0		
Calcium (mg/L) HGWC-103 58.4 - 86.5 Calcium (mg/L) HGWC-105 58.4 - 89.4 Calcium (mg/L) HGWC-107 58.4 - 58.1 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-117 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 4.6 Chloride (mg/L) HGWC-107 5.7 - 4.5 Fluoride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-107 0.23 - 0.042 J Fluoride	Boron (mg/L)	HGWC-118	0.023	-	0.65		
Calcium (mg/L) HGWC-105 58.4 - 89.4 Calcium (mg/L) HGWC-107 58.4 - 58.1 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-117 58.4 - 42.6 Calcium (mg/L) HGWC-118 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-105 5.7 - 3.6 Chloride (mg/L) HGWC-109 5.7 - 3.6 Chloride (mg/L) HGWC-109 5.7 - 4.6 Chloride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-107 0.23 - 0.042 J Fluoride (m	Calcium (mg/L)	HGWC-101	58.4	-	21.9		
Calcium (mg/L) HGWC-107 58.4 - 58.1 Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-117 58.4 - 70.9 Calcium (mg/L) HGWC-118 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 6.1 Chloride (mg/L) HGWC-105 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 4.6 Chloride (mg/L) HGWC-118 5.7 - 4.5 Fluoride (mg/L) HGWC-118 5.7 - 4.5 Fluoride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-101 7.1 5.5 5.3 pH (s.u.) </td <td>Calcium (mg/L)</td> <td>HGWC-103</td> <td></td> <td>-</td> <td>86.5</td>	Calcium (mg/L)	HGWC-103		-	86.5		
Calcium (mg/L) HGWC-109 58.4 - 42.6 Calcium (mg/L) HGWC-117 58.4 - 70.9 Calcium (mg/L) HGWC-118 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-105 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-109 5.7 - 4.6 Chloride (mg/L) HGWC-101 5.7 - 4.5 Fluoride (mg/L) HGWC-117 5.7 - 4.5 Fluoride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-107 0.23 - 0.042 J Fluoride (mg/L) HGWC-103 7.1 5.5 5.5 pH (su.) HGWC-107 7.1	Calcium (mg/L)	HGWC-105	58.4	-	89.4		
Calcium (mg/L) HGWC-117 58.4 - 70.9 Calcium (mg/L) HGWC-118 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 6.1 Chloride (mg/L) HGWC-105 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-109 5.7 - 4.6 Chloride (mg/L) HGWC-117 5.7 - 4.5 Fluoride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-108 0.23 - 0.047 J Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-107 7.1 5.5 5.3 pH		HGWC-107	58.4	-	58.1		
Calcium (mg/L) HGWC-118 58.4 - 84.2 Chloride (mg/L) HGWC-101 5.7 - 5.5 Chloride (mg/L) HGWC-103 5.7 - 6.1 Chloride (mg/L) HGWC-105 5.7 - 3.6 Chloride (mg/L) HGWC-107 5.7 - 3.6 Chloride (mg/L) HGWC-109 5.7 - 4.6 Chloride (mg/L) HGWC-117 5.7 - 4.5 Fluoride (mg/L) HGWC-101 0.23 - ND Fluoride (mg/L) HGWC-105 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-109 0.23 - 0.047 J Fluoride (mg/L) HGWC-117 0.23 - 0.047 J Fluoride (mg/L) HGWC-101 7.1 5.5 5.3 pf (s.u.) HGWC-103 7.1 5.5 5.5 pf (s.u.) HGWC-107 7.1	Calcium (mg/L)			-			
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Fluoride (mg/L) HGWC-103 0.23 - ND Fluoride (mg/L) HGWC-105 0.23 - ND Fluoride (mg/L) HGWC-107 0.23 - 0.047 J Fluoride (mg/L) HGWC-109 0.23 - 0.047 J Fluoride (mg/L) HGWC-109 0.23 - 0.042 J Fluoride (mg/L) HGWC-117 0.23 - 0.042 J Fluoride (mg/L) HGWC-118 0.23 - 0.042 J Fluoride (mg/L) HGWC-118 0.23 - 0.042 J pH (s.u.) HGWC-101 7.1 5.5 5.3 pH (s.u.) HGWC-103 7.1 5.5 6.5 pH (s.u.) HGWC-107 7.1 5.5 6.2 pH (s.u.) HGWC-117 7.1 5.5 6.2 pH (s.u.) HGWC-117 7.1 5.5 6.2 pH (s.u.) HGWC-118 7.1 5.5 6.2 pH (s.u.) HGWC-103 14 <t< td=""><td>Chloride (mg/L)</td><td>HGWC-118</td><td>5.7</td><td>-</td><td>4.5</td></t<>	Chloride (mg/L)	HGWC-118	5.7	-	4.5		
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Fluoride (mg/L)HGWC-1180.23-0.087 JpH (s.u.)HGWC-1017.15.55.3pH (s.u.)HGWC-1037.15.55.5pH (s.u.)HGWC-1057.15.56.5pH (s.u.)HGWC-1077.15.56.2pH (s.u.)HGWC-1097.15.56.6pH (s.u.)HGWC-1097.15.56.6pH (s.u.)HGWC-1177.15.56.2pH (s.u.)HGWC-1187.15.57.0Sulfate (mg/L)HGWC-10114-101Sulfate (mg/L)HGWC-10514-162Sulfate (mg/L)HGWC-10714-123Sulfate (mg/L)HGWC-10914-23.2Sulfate (mg/L)HGWC-11714-133				-			
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Sulfate (mg/L) HGWC-107 14 - 123 Sulfate (mg/L) HGWC-109 14 - 23.2 Sulfate (mg/L) HGWC-117 14 - 133							
Sulfate (mg/L) HGWC-109 14 - 23.2 Sulfate (mg/L) HGWC-117 14 - 133	· · · · ·						
Sulfate (mg/L) HGWC-117 14 - 133							
	Sulfate (mg/L)	HGWC-117 HGWC-118	14		80.9		

 Table C-1

 Assessment Monitoring Interwell Prediction Limit Comparison

 Plant Hammond AP-4, Floyd County, Georgia

Parameter	Well ID	Upper PL Lower PL		Oct 21-23 2019
	Verification			
TDS (mg/L)	HGWC-101	249	-	221
TDS (mg/L)	HGWC-103	249	-	507
TDS (mg/L)	HGWC-105	249	-	419
TDS (mg/L)	HGWC-107	249	-	308
TDS (mg/L)	HGWC-109	249	-	212
TDS (mg/L)	HGWC-117	249	-	348
TDS (mg/L)	HGWC-118	249	-	354

Notes:

- = Not applicable

-- = Indicates the parameter was not analyzed as part of the verification event.

J = Indicates that analyte was estimated and detected between the laboratory Method I (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.

parameter in which the field result is compared to both the upper and lower PL.

Interwell Prediction Limit - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-4 Printed 3/12/2020, 3:51 PM

				j						-	
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-101	0.02274	n/a	10/23/2019	0.1	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-103	0.02274	n/a	10/23/2019	2.3	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-105	0.02274	n/a	10/23/2019	1.3	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-107	0.02274	n/a	10/22/2019	0.91	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-109	0.02274	n/a	10/22/2019	0.32	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-117	0.02274	n/a	10/22/2019	1	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-118	0.02274	n/a	10/22/2019	0.65	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Calcium (mg/L)	HGWC-103	58.4	n/a	10/23/2019	86.5	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	58.4	n/a	10/23/2019	89.4	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	58.4	n/a	10/22/2019	70.9	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	58.4	n/a	10/22/2019	84.2	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	10/23/2019	6.1	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	10/22/2019	12.1	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-101	7.09	5.47	10/23/2019	5.33	Yes	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	10/23/2019	101	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	10/23/2019	248	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	10/23/2019	162	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-107	14	n/a	10/22/2019	123	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	10/22/2019	23.2	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-117	14	n/a	10/22/2019	133	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-118	14	n/a	10/22/2019	80.9	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-103	248.8	n/a	10/23/2019	507	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	248.8	n/a	10/23/2019	419	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-107	248.8	n/a	10/22/2019	308	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	248.8	n/a	10/22/2019	348	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	248.8	n/a	10/22/2019	354	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2

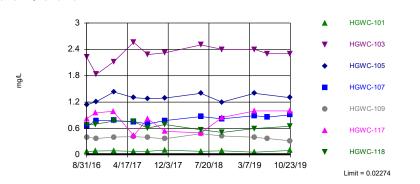
Interwell Prediction Limit - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-4 Printed 3/12/2020, 3:51 PM

			Hammond AP	Client: Georgia F	Power Data	: Hammo	ona AP-	4 Printe	a 3/12/2020, 3:51 PN	1	
<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-101	0.02274	n/a	10/23/2019	0.1	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-103	0.02274	n/a	10/23/2019	2.3	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-105	0.02274	n/a	10/23/2019	1.3	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-107	0.02274	n/a	10/22/2019	0.91	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-109	0.02274	n/a	10/22/2019	0.32	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-117	0.02274	n/a	10/22/2019	1	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Boron (mg/L)	HGWC-118	0.02274	n/a	10/22/2019	0.65	Yes	30	20	sqrt(x)	0.001075	Param Inter 1 of 2
Calcium (mg/L)	HGWC-101	58.4	n/a	10/23/2019	21.9	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-103	58.4	n/a	10/23/2019	86.5	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-105	58.4	n/a	10/23/2019	89.4	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-107	58.4	n/a	10/22/2019	58.1	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-109	58.4	n/a	10/22/2019	42.6	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-117	58.4	n/a	10/22/2019	70.9	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Calcium (mg/L)	HGWC-118	58.4	n/a	10/22/2019	84.2	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-101	5.7	n/a	10/23/2019	5.5	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-103	5.7	n/a	10/23/2019	6.1	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-105	5.7	n/a	10/23/2019	3.6	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-107	5.7	n/a	10/22/2019	3.6	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-109	5.7	n/a	10/22/2019	4.6	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-117	5.7	n/a	10/22/2019	12.1	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-118	5.7	n/a	10/22/2019	4.5	No	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-101	0.2306	n/a	10/23/2019	0.3ND	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-103	0.2306	n/a	10/23/2019	0.3ND	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-105	0.2306	n/a	10/23/2019	0.3ND	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-107	0.2306	n/a	10/22/2019	0.047	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-109	0.2306	n/a	10/22/2019	0.099	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-117	0.2306	n/a	10/22/2019	0.042	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	HGWC-118	0.2306	n/a	10/22/2019	0.087	No	33	24.24	sqrt(x)	0.001075	Param Inter 1 of 2
pH (s.u.)	HGWC-101	7.09	5.47	10/23/2019	5.33	Yes	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-103	7.09	5.47	10/23/2019	5.49	No	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-105	7.09	5.47	10/23/2019	6.46	No	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-107	7.09	5.47	10/22/2019	6.19	No	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-109	7.09	5.47	10/22/2019	6.58	No	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-117	7.09	5.47	10/22/2019	6.17	No	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
pH (s.u.)	HGWC-118	7.09	5.47	10/22/2019	7.03	No	33	0	n/a	0.003256	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-101	14	n/a	10/23/2019	101	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	10/23/2019	248	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-105	14	n/a	10/23/2019	162	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	10/22/2019	102	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-109	14	n/a	10/22/2019	23.2	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-103	14	n/a	10/22/2019	133	Yes	30	0	n/a	0.00191	NP Inter (normality) 1 of 2 NP Inter (normality) 1 of 2
	HGWC-118			10/22/2019	80.9		30	0		0.00191	NP Inter (normality) 1 of 2 NP Inter (normality) 1 of 2
Sulfate (mg/L) Total Dissolved Solids (mg/L)	HGWC-118 HGWC-101	14 248.8	n/a	10/23/2019	221	Yes		0	n/a	0.00191	Param Inter 1 of 2
()	HGWC-101 HGWC-103	248.8	n/a n/a	10/23/2019 10/23/2019	507	No Xos	29 29	0 0	ln(x)	0.001075 0.001075	
Total Dissolved Solids (mg/L)		248.8	n/a n/a			Yes	29 20		ln(x)		Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-105	248.8	n/a n/a	10/23/2019	419 208	Yes	29 20	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-107	248.8	n/a	10/22/2019	308	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-109	248.8	n/a	10/22/2019	212	No	29 20	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-117	248.8	n/a	10/22/2019	348	Yes	29 20	0	ln(x)	0.001075	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-118	248.8	n/a	10/22/2019	354	Yes	29	0	ln(x)	0.001075	Param Inter 1 of 2

Exceeds Limit: HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118

Prediction Limit Interwell Parametric



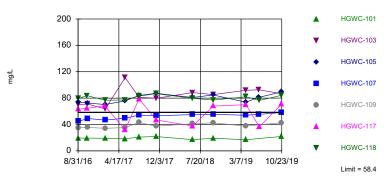
Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.09644, Std. Dev.=0.02682, n=30, 20% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9044, critical = 0.9. Kappa = 2.027 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.





Exceeds Limit: HGWC-103, HGWC-105, HGWC-117, HGWC-118

Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 30 background values. Annual per-constituent alpha = 0.02642. Individual comparison alpha = 0.00191 (1 of 2). Comparing 7 points to limit.

Constituent: Calcium Analysis Run 3/12/2020 3:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-4

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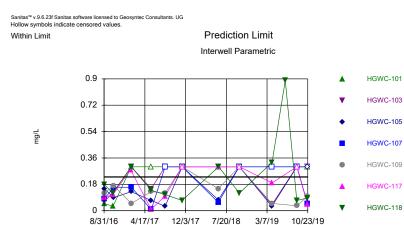
ng/L

Prediction Limit Exceeds Limit: HGWC-103, HGWC-117 Interwell Non-parametric 20 HGWC-101 HGWC-103 16 **HGWC-105** 12 **HGWC-107** 8 HGWC-109 HGWC-117 HGWC-118 0

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 30 background values. Annual per-constituent alpha = 0.02642. Individual comparison alpha = 0.00191 (1 of 2). Comparing 7 points to limit.

Limit = 5.7

8/31/16 4/17/17 12/3/17 7/20/18 3/7/19 10/23/19



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.2662, Std. Dev.=0.1067, n=33, 24.24% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9166, critical = 0.906. Kappa = 2.007 (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.

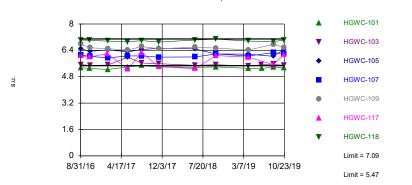
Limit = 0.2306

Constituent: Chloride Analysis Run 3/12/2020 3:48 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

Constituent: Fluoride Analysis Run 3/12/2020 3:48 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

Exceeds Limits: HGWC-101

Prediction Limit

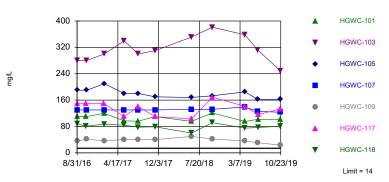


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 33 background values. Annual perconstituent alpha = 0.04511. Individual comparison alpha = 0.003256 (1 of 2). Comparing 7 points to limit.

> Constituent: pH Analysis Run 3/12/2020 3:48 PM Hammond AP Client: Georgia Power Data: Hammond AP-4



Exceeds Limit: HGWC-101, HGWC-103, HGWC-105, HGWC-107, HGWC-109, HGWC-117, HGWC-118 Prediction Limit Interwell Non-parametric

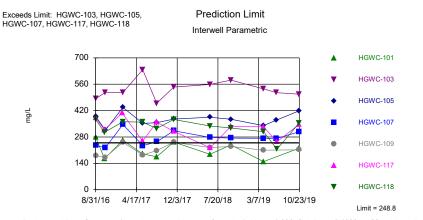


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 30 background values. Annual per-constituent alpha = 0.002642. Individual comparison alpha = 0.00191 (1 of 2). Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 3/12/2020 3:48 PM

Hammond AP Client: Georgia Power Data: Hammond AP-4

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Background Data Summary (based on natural log transformation): Mean=4.636, Std. Dev.=0.4322, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9377, critical = 0.898. Kappa = 2.037 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.05498. Individual comparison alpha = 0.00175. Comparing 7 points to limit.

Constituent: Total Dissolved Solids Analysis Run 3/12/2020 3:48 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

Intrawell Prediction Limit - Significant Results

Hammond AP Client: Georgia Power Data: Hammond AP-4 Printed 1/30/2020, 9:26 AM

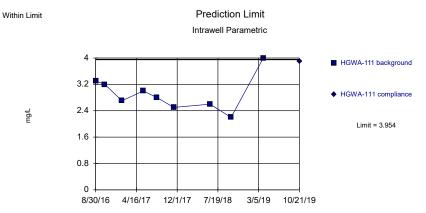
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method
Chloride (mg/L)	HGWC-107	3.595	n/a	10/22/2019	3.6	Yes	10	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-117	10.21	n/a	10/22/2019	12.1	Yes	9	0	No	0.001075	Param 1 of 3

Intrawell Prediction Limit - All Results

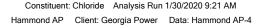
Hammond AP Client: Georgia Power Data: Hammond AP-4 Printed 1/30/2020, 9:26 AM

<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Chloride (mg/L)	HGWA-111	3.954	n/a	10/21/2019	3.9	No	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWA-112	5.789	n/a	10/22/2019	5.5	No	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWA-113	2.107	n/a	10/22/2019	1.9	No	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-101	6.089	n/a	10/23/2019	5.5	No	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-103	6.887	n/a	10/23/2019	6.1	No	10	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-105	4.177	n/a	10/23/2019	3.6	No	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-107	3.595	n/a	10/22/2019	3.6	Yes	10	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-109	5.793	n/a	10/22/2019	4.6	No	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-117	10.21	n/a	10/22/2019	12.1	Yes	9	0	No	0.001075	Param 1 of 3
Chloride (mg/L)	HGWC-118	4.764	n/a	10/22/2019	4.5	No	9	0	No	0.001075	Param 1 of 3

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Background Data Summary: Mean=2.922, Std. Dev.=0.531, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9533, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

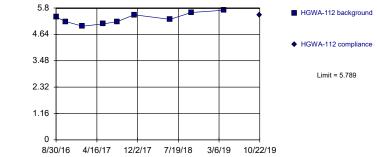


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Within Limit

mg/L

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=5.333, Std. Dev.=0.2345, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9679, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

> Constituent: Chloride Analysis Run 1/30/2020 9:21 AM Hammond AP Client: Georgia Power Data: Hammond AP-4

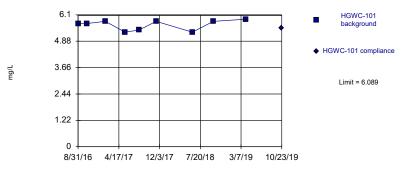
Prediction Limit Intrawell Parametric 2.2 HGWA-113 background 1.76 ♦ HGWA-113 compliance 1.32 mg/L Limit = 2.107 0.88 0.44 0 8/30/16 4/16/17 12/2/17 7/19/18 3/6/19 10/22/19

Background Data Summary: Mean=1.8, Std. Dev.=0.1581, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8978, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

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Within Limit

Prediction Limit Intrawell Parametric

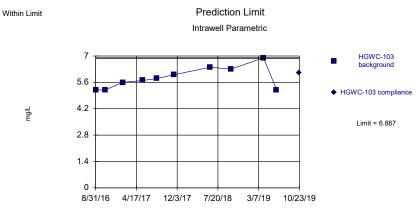


Background Data Summary: Mean=5.633, Std. Dev.=0.2345, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8291, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

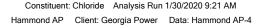
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Within Limit

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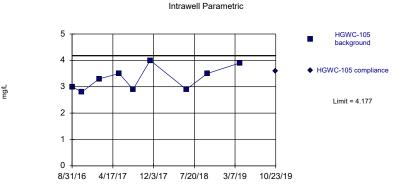
Background Data Summary: Mean=5.83, Std. Dev.=0.5755, n=10. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9233, critical = 0.781. Kappa = 1.836 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.



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Prediction Limit



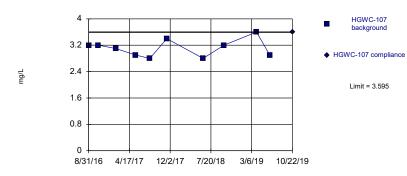
Background Data Summary: Mean=3.311, Std. Dev.=0.4457, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9016, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 1/30/2020 9:21 AM Hammond AP Client: Georgia Power Data: Hammond AP-4

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Exceeds Limit

Prediction Limit

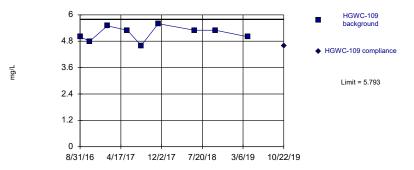


Background Data Summary: Mean=3.11, Std. Dev.=0.2644, n=10. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.922, critical = 0.781. Kappa = 1.836 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

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Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=5.156, Std. Dev.=0.3283, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9469, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

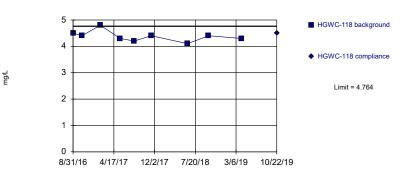
Prediction Limit Exceeds Limit Intrawell Parametric 20 HGWC-117 background 16 ♦ HGWC-117 compliance 12 ng/L Limit = 10.21 8 4 0 8/31/16 4/17/17 12/2/17 7/20/18 3/6/19 10/22/19

Background Data Summary: Mean=6.244, Std. Dev.=2.04, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8676, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 1/30/2020 9:21 AM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=4.378, Std. Dev.=0.1986, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9197, critical = 0.764. Kappa = 1.942 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 1/30/2020 9:21 AM Hammond AP Client: Georgia Power Data: Hammond AP-4



Trend Test - Significant Results

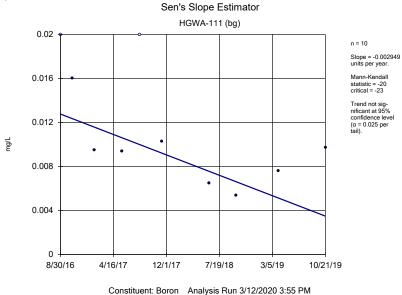
		Hammond AP	Client: Georgia Power	Data: Hammo	Data: Hammond AP-4		3/12/2020, 3	3:58 PM			
Constituent	Well	Slope	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-107	0.05659	37	27	Yes	11	0	n/a	n/a	0.05	NP
Calcium (mg/L)	HGWC-107	3.563	43	27	Yes	11	0	n/a	n/a	0.05	NP
Chloride (mg/L)	HGWC-103	0.5087	30	27	Yes	11	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWA-113 (bg)	-1.978	-33	-23	Yes	10	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	HGWC-105	-9.35	-34	-27	Yes	11	0	n/a	n/a	0.05	NP

Trend Test - All Results

Hammond AP Client: Georgia Power Data: Hammond AP-4 Printed 3/12/2020, 3:58 PM

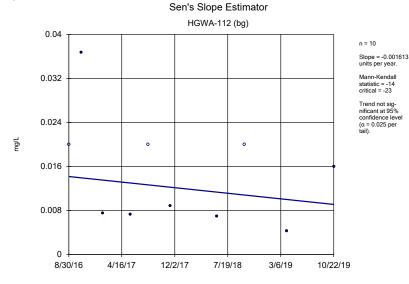
			Hammond AP	Client: Georgia Power	Data: Hammond	Data: Hammond AP-4		8/12/2020, 3	3:58 PM			
<u>Co</u>	onstituent	Well	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Bo	oron (mg/L)	HGWA-111 (bg)	-0.002949	-20	-23	No	10	20	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWA-112 (bg)	-0.001613	-14	-23	No	10	30	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWA-113 (bg)	-0.004208	-21	-23	No	10	10	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWC-101	0.004089	7	23	No	10	0	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWC-103	0.06603	15	27	No	11	0	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWC-105	0.03802	11	23	No	10	0	n/a	n/a	0.05	NP
Вс	oron (mg/L)	HGWC-107	0.05659	37	27	Yes	11	0	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWC-109	-0.008063	-11	-27	No	11	0	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWC-117	0.0179	11	23	No	10	0	n/a	n/a	0.05	NP
Bo	oron (mg/L)	HGWC-118	-0.04563	-19	-23	No	10	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWA-111 (bg)	1.092	1	23	No	10	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWA-112 (bg)	-0.07411	-3	-23	No	10	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWA-113 (bg)	0.2427	14	23	No	10	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWC-103	7.128	27	27	No	11	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWC-105	4.589	25	27	No	11	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWC-107	3.563	43	27	Yes	11	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWC-117	1.843	7	27	No	11	0	n/a	n/a	0.05	NP
Ca	alcium (mg/L)	HGWC-118	0.1664	1	27	No	11	0	n/a	n/a	0.05	NP
Cł	nloride (mg/L)	HGWA-111 (bg)	-0.25	-7	-23	No	10	0	n/a	n/a	0.05	NP
Cł	nloride (mg/L)	HGWA-112 (bg)	0.1446	23	23	No	10	0	n/a	n/a	0.05	NP
Cł	nloride (mg/L)	HGWA-113 (bg)	-0.04101	-9	-23	No	10	0	n/a	n/a	0.05	NP
Cł	nloride (mg/L)	HGWC-103	0.5087	30	27	Yes	11	0	n/a	n/a	0.05	NP
Cł	nloride (mg/L)	HGWC-117	0.6938	10	23	No	10	0	n/a	n/a	0.05	NP
p⊦	ł (s.u.)	HGWA-111 (bg)	-0.04585	-4	-27	No	11	0	n/a	n/a	0.05	NP
p⊦	l (s.u.)	HGWA-112 (bg)	-0.02226	-3	-27	No	11	0	n/a	n/a	0.05	NP
p⊦	ł (s.u.)	HGWA-113 (bg)	0.003891	4	27	No	11	0	n/a	n/a	0.05	NP
p⊦	l (s.u.)	HGWC-101	0	0	30	No	12	0	n/a	n/a	0.05	NP
Su	ılfate (mg/L)	HGWA-111 (bg)	0	0	23	No	10	0	n/a	n/a	0.05	NP
Su	ılfate (mg/L)	HGWA-112 (bg)	-0.005155	ō -2	-23	No	10	0	n/a	n/a	0.05	NP
Su	Ilfate (mg/L)	HGWA-113 (bg)	-1.978	-33	-23	Yes	10	0	n/a	n/a	0.05	NP
Su	ılfate (mg/L)	HGWC-101	-2.86	-14	-27	No	11	0	n/a	n/a	0.05	NP
	ılfate (mg/L)	HGWC-103	12.72	19	27	No	11	0	n/a	n/a	0.05	NP
Sı	Ilfate (mg/L)	HGWC-105	-9.35	-34	-27	Yes	11	0	n/a	n/a	0.05	NP
Su	ılfate (mg/L)	HGWC-107	0	1	27	No	11	0	n/a	n/a	0.05	NP
	ılfate (mg/L)	HGWC-109	-1.73	-11	-27	No	11	0	n/a	n/a	0.05	NP
Su	ılfate (mg/L)	HGWC-117	-5.41	-13	-27	No	11	0	n/a	n/a	0.05	NP
Su	ılfate (mg/L)	HGWC-118	-2.386	-19	-27	No	11	0	n/a	n/a	0.05	NP
	tal Dissolved Solids (mg/L)	HGWA-111 (bg)	4.773	3	23	No	10	0	n/a	n/a	0.05	NP
To	tal Dissolved Solids (mg/L)	HGWA-112 (bg)	3.916	11	20	No	9	0	n/a	n/a	0.05	NP
To	tal Dissolved Solids (mg/L)	HGWA-113 (bg)	2.173	6	23	No	10	0	n/a	n/a	0.05	NP
Тс	tal Dissolved Solids (mg/L)	HGWC-103	7.365	1	27	No	11	0	n/a	n/a	0.05	NP
Тс	tal Dissolved Solids (mg/L)	HGWC-105	8.714	3	27	No	11	0	n/a	n/a	0.05	NP
Тс	tal Dissolved Solids (mg/L)	HGWC-107	18.53	13	27	No	11	0	n/a	n/a	0.05	NP
Тс	tal Dissolved Solids (mg/L)	HGWC-117	-18.12	-13	-27	No	11	0	n/a	n/a	0.05	NP
Тс	tal Dissolved Solids (mg/L)	HGWC-118	-19.75	-18	-27	No	11	0	n/a	n/a	0.05	NP

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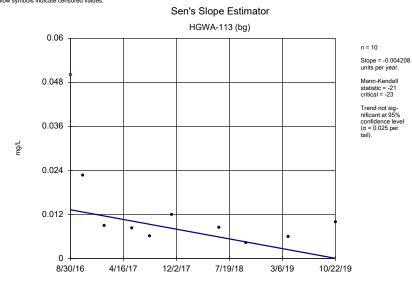
Hammond AP Client: Georgia Power Data: Hammond AP-4

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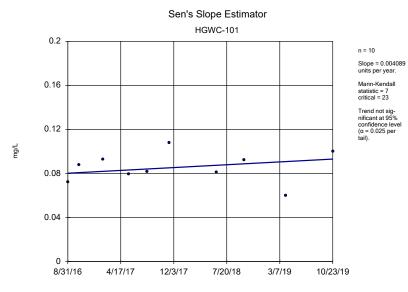


Constituent: Boron Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

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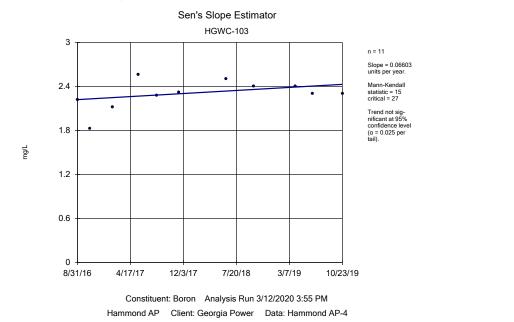


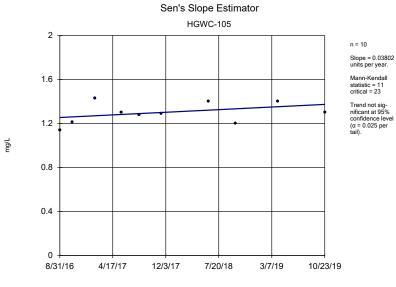
Constituent: Boron Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas[™] v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Boron Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

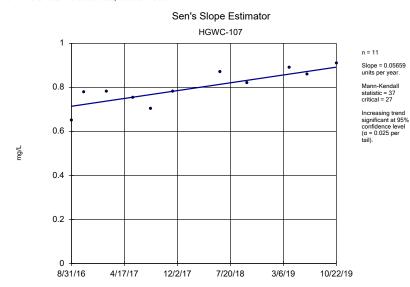




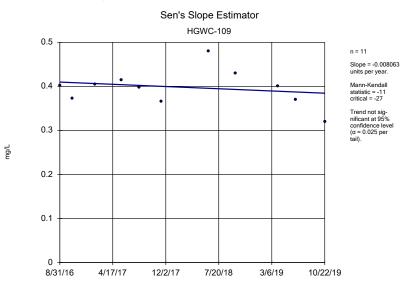


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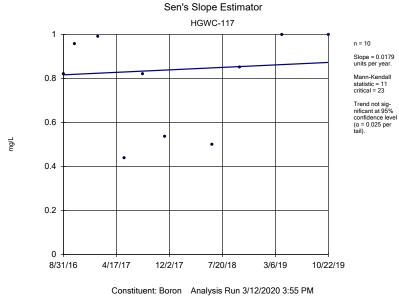


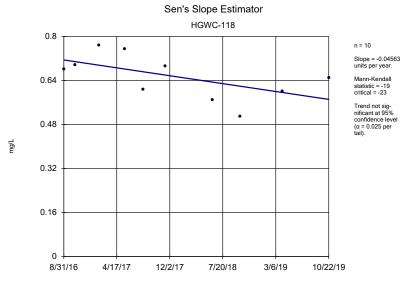
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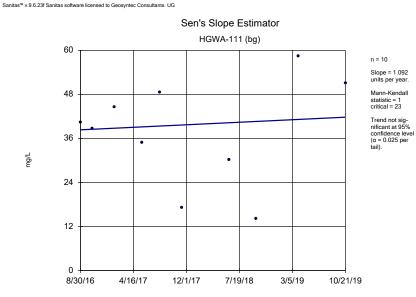
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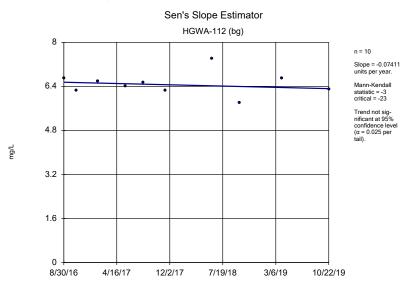




Constituent: Boron Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4



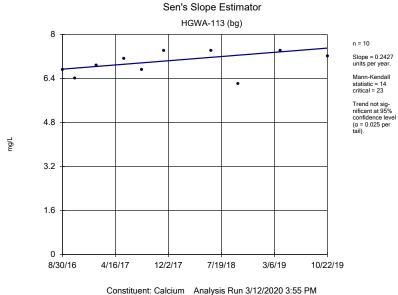
Constituent: Calcium Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

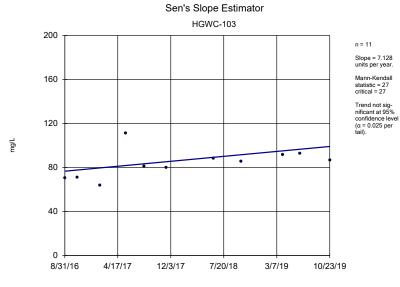


Constituent: Calcium Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

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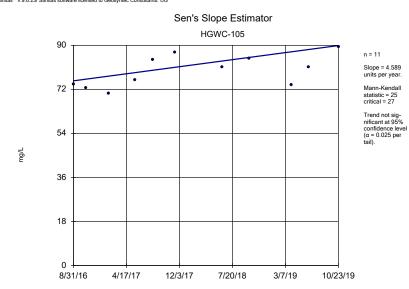




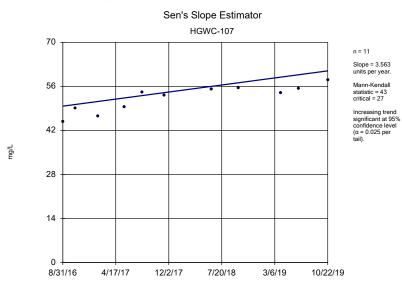


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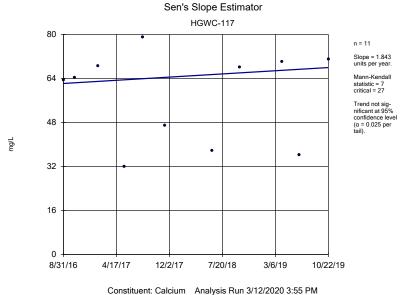


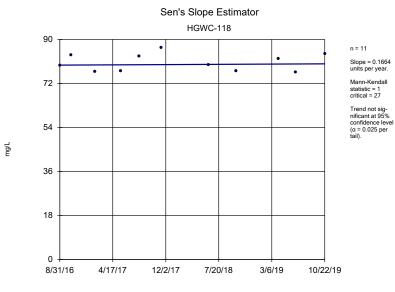
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Constituent: Calcium Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

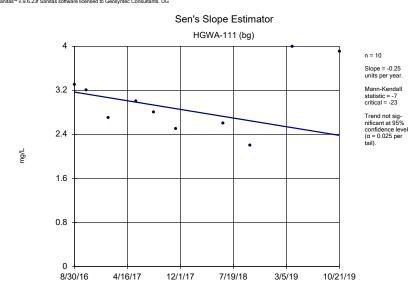




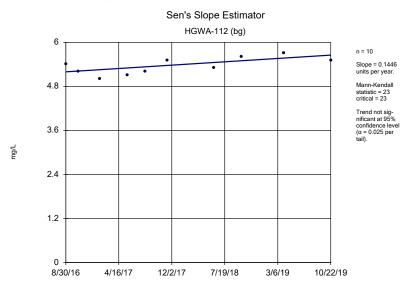


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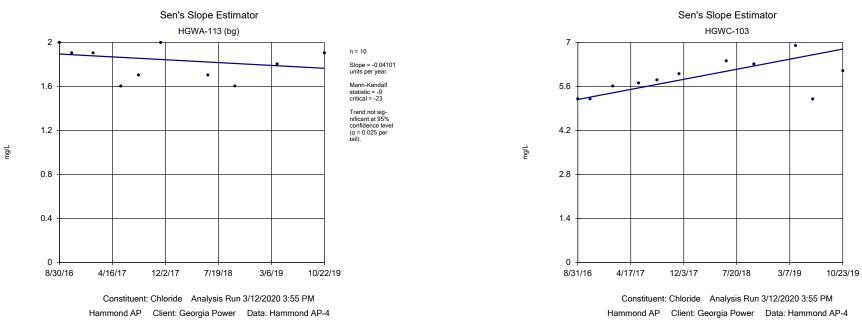
Constituent: Chloride Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

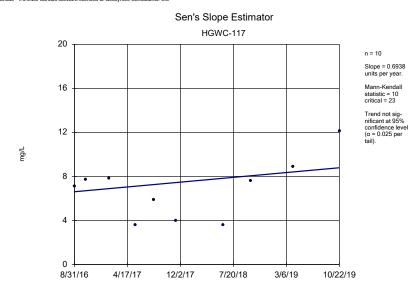


Constituent: Chloride Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

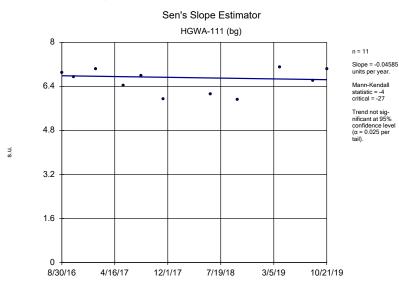
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Constituent: Chloride Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



n = 11

Slope = 0.5087

units per year.

Mann-Kendall

statistic = 30 critical = 27

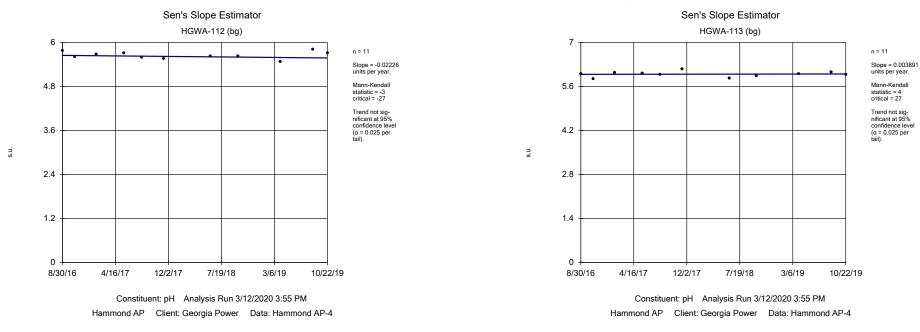
Increasing trend significant at 95% confidence level

(α = 0.025 per tail).

Constituent: pH Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

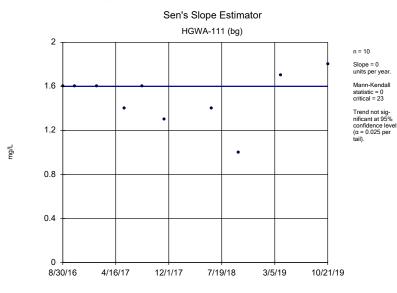
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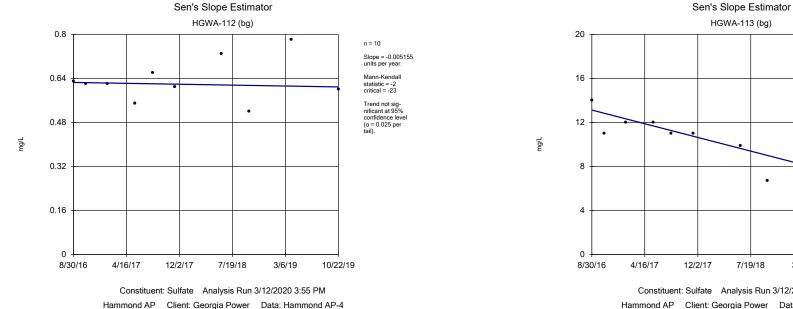




Constituent: pH Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4



n = 10 Slope = -1.978 units per year. Mann-Kendall statistic = -33 critical = -23

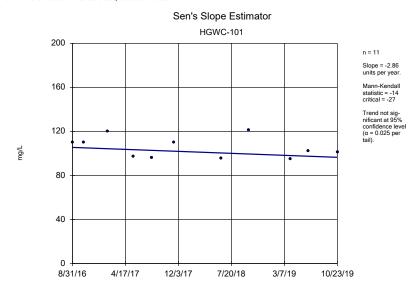
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

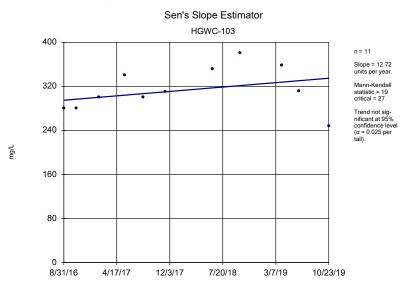
3/6/19

10/22/19

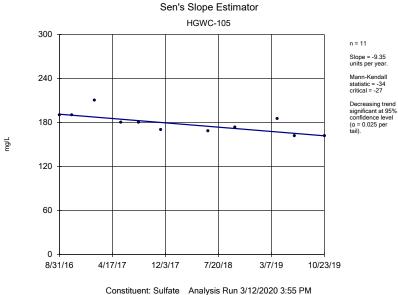
Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

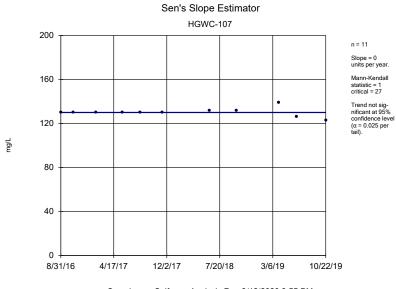


Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

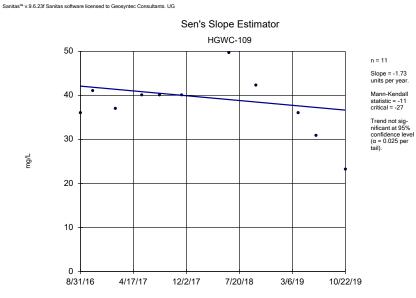


Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

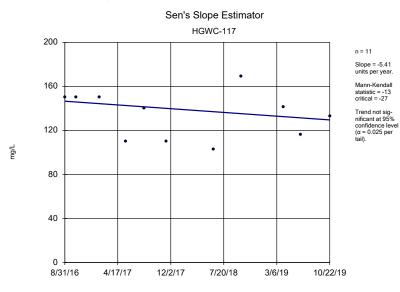




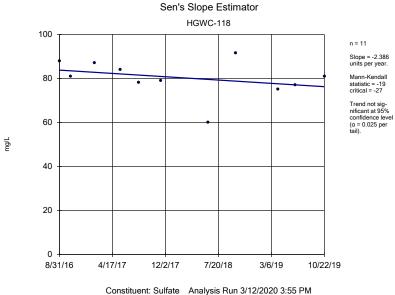
Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

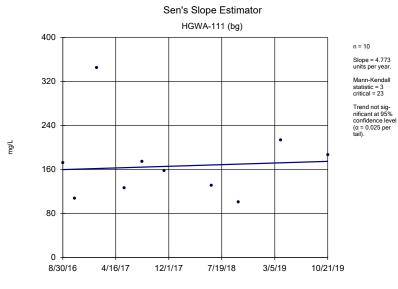


Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



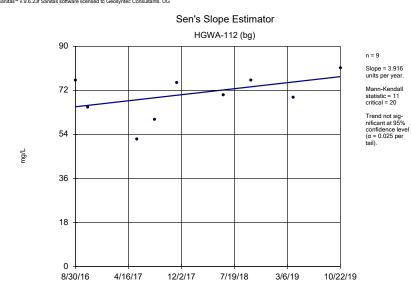
Constituent: Sulfate Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4



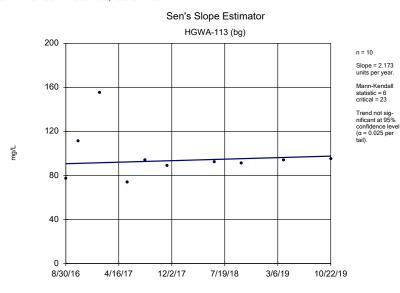


Constituent: Total Dissolved Solids Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4

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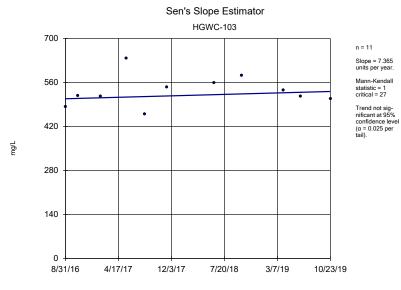


Constituent: Total Dissolved Solids Analysis Run 3/12/2020 3:55 PM Hammond AP Client: Georgia Power Data: Hammond AP-4 Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

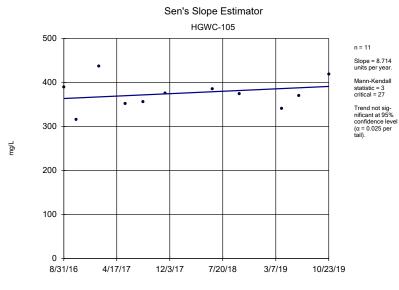


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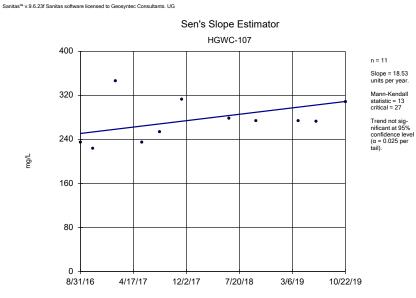




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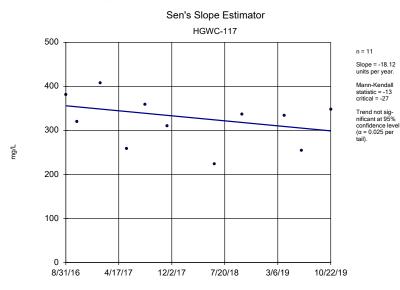


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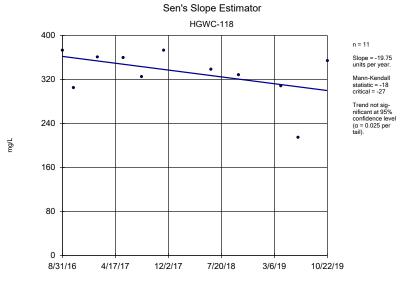
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