



Prepared for

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**2020 SEMIANNUAL GROUNDWATER
MONITORING & CORRECTIVE ACTION
REPORT**

**GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 2 (AP-2)**

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CERTIFICATION STATEMENT

This 2020 Semiannual Groundwater Monitoring & Corrective Action Report, Georgia Power Company - Plant Hammond – Ash Pond 2 (AP-2) 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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August 31, 2020
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LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
DO	dissolved oxygen
ft/day	feet per day
ft/ft	feet per foot
GA EPD	Georgia Environmental Protection Division
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
K_h	horizontal hydraulic conductivity
MCL	Maximum Contaminant Level
mg/L	milligram per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric turbidity units
ORP	oxidation-reduction potential
Pace Analytical	Pace Analytical Services, LLC.
PE	professional engineer
QA/QC	Quality Assurance/Quality Control
SSI	statistically significant increase
SSL	statistically significant level
s.u.	standard unit
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D] and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants has prepared this *2020 Semiannual Groundwater Monitoring & Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company (Georgia Power) Plant Hammond (Site) Ash Pond 2 (AP-2). GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a) adopt the Federal CCR rule by reference. For ease of reference, the USEPA CCR rules are cited within this report. This report documents groundwater monitoring activities completed for AP-2 from January through August 2020.

Due to statistically significant levels (SSLs) of cobalt identified in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2019a), Georgia Power initiated an assessment of corrective measures (ACM) program for AP-2 in January 2019. Pursuant to 40 CFR 257.96(b), Georgia Power continues to monitor groundwater associated with AP-2 in accordance with the assessment monitoring program established for the unit in 2018, including semiannual monitoring and reporting pursuant to 40 CFR 257.90 through 40 CFR 257.95 of the Federal CCR rule, and GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a).

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 decommissioned in July 2019, and no longer produce electricity.

AP-2 is a 21-acre surface impoundment. Dewatered ash from AP-2 is excavated and transported to the nearby Huffaker Road facility, a permitted solid waste disposal location owned and operated by Georgia Power.

1.2 Regional Geology & Hydrogeologic Setting

The following section summarizes the geologic and hydrogeologic conditions at AP-2 as described in the *Hydrogeologic Assessment Report Revision 01 – AP-2* (HAR Rev 01) submitted to GA EPD in December 2019 under separate cover in support of the AP-2 solid waste handling permit (Geosyntec, 2019c).

1.2.1 Regional and Site Geology

The Site is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. Geologic mapping performed at the Site by Petrologic Solutions, Inc. under the direction of Golder (Golder, 2018) indicates that AP-2 is underlain by the lower units of the Cambrian age Conasauga Formation, consisting of mostly calcareous shale. Based on review of subsurface investigations at AP-2, the bedrock was identified as predominantly calcareous shale and fissile black shale. AP-2 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 angular and sub-rounded chert fragments, and dolomite, sandstone, and shale fragments. 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 the Site. 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-2 is a regional groundwater aquifer that occurs primarily in the residuum and within the weathered and fractured bedrock. Based on observations of 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-2, is expected to be very low permeability. The regional groundwater flow direction is expected to be from north to south; however, the local flow direction beneath AP-2 is predominantly east to west with an additional southwesterly component.

1.3 Groundwater Monitoring Well Network

In accordance with 40 CFR 257.91, a groundwater monitoring system was installed at AP-2 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-2 consists of 11 monitoring wells. The well network was certified by a professional engineer (PE) on October 17, 2017; the certification is maintained in the AP-2 Operating Record.

As part of the assessment monitoring program, eight additional groundwater monitoring wells (MW-21D, MW-22, MW-23D, and MW-37D) and piezometers (MW-33, MW-34D, MW-35, MW-36D) have been installed since 2018 to characterize groundwater quality and flow conditions downgradient of AP-2. Pursuant to 40 CFR 257.195(g)(1)(iv), the delineation wells will continue to be sampled concurrently with the compliance monitoring well network. The piezometers will be sampled as needed to support the ACM program.

A network of piezometers has been installed at the Site that are used to gauge water levels to define groundwater flow direction and gradients. In addition to the wells and piezometers listed above, there are six piezometers used to gauge groundwater levels in vicinity of AP-2: MW-8, MW-9, MW-12, MW-16, MW-17, and MW-18.

The locations of the compliance monitoring wells, delineation wells, and piezometers associated with AP-2 are shown on **Figure 2**; well construction details are listed in **Table 1**.

2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR 257.90(e), the following describes monitoring-related activities performed during January through August 2020 and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with 40 CFR 257.93.

2.1 Monitoring Well Installation and Maintenance

Three piezometers (MW-34D, MW-35, and MW-36D) and one delineation well (MW-37D) were installed in May 2020 to provide additional data to characterize groundwater quality and flow conditions downgradient of AP-2. A well installation report that includes detailed boring and well construction logs for the installation of well MW-37D and piezometers MW-34D, MW-35, and MW-36D is provided in **Appendix A**. The installation report was submitted to GA EPD in July 2020.

The AP-2 well network was re-surveyed by GEL Solutions on May 19, 2020. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. The new survey data are incorporated into this report's applicable tables; a copy of the well survey data certified by a Georgia-licensed surveyor is included with the well installation report provided in **Appendix A**. A set of revised boring and well constructions logs that incorporate the new survey data will be submitted to EPD under separate cover in September 2020.

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 subsequent groundwater sampling event. The well inspection forms for this reporting period are provided in **Appendix B**.

2.2 Assessment Monitoring

Georgia Power initiated an assessment monitoring program for groundwater at AP-2 in January 2018. Statistical analyses of the 2018 assessment monitoring groundwater data identified SSLs of cobalt in AP-2 compliance wells HGWC-15 and HGWC-18. Pursuant

to 40 CFR 257.96, an ACM was initiated for AP-2 in January 2019. An *Assessment of Corrective Measures Report* was subsequently prepared for AP-2 (Geosyntec, 2019b) and submitted to GA EPD in June 2019 and posted to the CCR compliance website in July 2019. In accordance with 40 CFR 257.96(b), groundwater continues to be monitored at AP-2 under the assessment monitoring program as the ACM phase is implemented.

The initial annual Appendix IV sampling event was conducted in early March 2020 with the first semiannual assessment monitoring event occurring in late March and early April 2020. The number of groundwater samples collected for analysis and the dates the samples were collected at AP-2 during this reporting period is summarized in **Table 2**. Details of these events and analytical results are discussed in Section 3, while the statistical results are discussed in Section 4.

2.3 Additional Sampling

Supplemental groundwater sampling events were conducted in January and June 2020 to collect additional data in support of the continued evaluation of corrective measures as presented in the ACM Report. The supplementary data will be used (i) to evaluate attenuation mechanisms and rates and aquifer capacity for attenuation; (ii) conduct geochemical fingerprinting of the groundwater relative to source water; and (iii) establish a set of groundwater quality data for newly installed delineation wells. The scope of these additional efforts and associated results are presented in the *Semiannual Remedy Selection and Design Progress Report* provided in **Appendix C**.

Due to the presence of a surface water feature in the downgradient direction of HGWC-18 (refer to **Figure 2**), installation of additional wells to horizontally characterize the area is infeasible. However, as a proactive measure, Georgia Power collected surface water samples in the unnamed creek west of AP-2 and the Coosa River. The surface water samples were collected in July 2020; the locations are shown on **Figure 2**. The laboratory reports associated with the sampling event are provided in **Appendix D**. Georgia Power will continue collecting the surface water samples on a frequency that coincides with the semiannual assessment monitoring events.

3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were implemented, and the groundwater sampling results that were obtained in connection with the assessment monitoring program conducted at AP-2 during this reporting period.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth to groundwater level measurements were recorded from the AP-2 wells and piezometers and used to calculate the corresponding groundwater elevations. The calculated groundwater elevations for the March 2020 and March/April 2020 events are presented in **Table 3**. The May 2020 survey data was used to calculate the groundwater elevations for both events. The March 2 and March 23, 2020 elevations reported using the new survey data are generally representative of the groundwater elevations reported for prior monitoring events.

The groundwater elevation data were used to prepare potentiometric surface maps for the March and March/April 2020 events, which are presented on **Figures 3** and **4**, respectively. Groundwater in the AP-2 area flows under the influence of topography from higher elevations on the northern and eastern side of the Site in a westerly direction with a southwesterly flow component.

3.2 Groundwater Gradient and Flow Velocity

The groundwater hydraulic gradient within the uppermost aquifer beneath AP-2 was calculated using the groundwater elevation data from the March 2020 events. The hydraulic gradient is commonly calculated between two points along the groundwater flow path perpendicular to groundwater elevation contours. Ideally, this flow path originates and concludes with groundwater elevations reported for two wells, but this may not be feasible and still remain perpendicular to the contours. At the request of GA EPD, the hydraulic gradients in this report were calculated between upgradient and downgradient wells selected to provide the most accurate alignment possible relative to the interpreted groundwater flow path. Hydraulic gradients were calculated across the central portion of AP-2 between wells MW-18 and HGWC-17. The supporting calculations are presented in **Table 4**. The presented hydraulic gradients represent the calculated average of the March and March/April 2020 events. The general trajectory of the flow paths used in the calculations and associated potentiometric contour lines are shown on **Figures 3** and **4**.

The average hydraulic gradient along the westerly flow path lines is 0.011 feet per foot (ft/ft). The approximate horizontal flow velocities associated with AP-2 were calculated using the following derivative of Darcy's Law. The calculations are presented on **Table 4**.

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

where:

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

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

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

$$n_e = \text{Effective porosity}$$

The horizontal hydraulic conductivity (K_h) measurements were calculated by ERM (2018) from slug test data collected in a subset of AP-2 wells and piezometers. Results were broadly grouped based on the lithology in which the wells or piezometers were screened. At AP-2, hydraulic conductivities for wells and piezometers screened in the alluvium, colluvium, and residuum averaged 1.65×10^{-4} centimeters per second (cm/sec) [0.47 feet per day (ft/day)]. An effective porosity value of 0.15 was used to represent average lithologic conditions at AP-2, derived based on review of literature, observed site lithology, and professional judgement. Applying these values and the average hydraulic gradient, the average groundwater flow velocity underneath AP-2 was calculated as 0.034 ft/day. The flow velocity calculations are provided in **Table 4**.

3.3 Groundwater Sampling Procedures

During the reporting period, groundwater samples were collected from the compliance monitoring and delineation well networks using low-flow sampling procedures in accordance with 40 CFR 257.93(a). Twelve of the 15 wells/piezometers were purged and sampled using the installed bladder pump with dedicated tubing during the March and March/April assessment monitoring events; MW-21D, MW-23D and MW-33 were sampled using a peristaltic pump equipped with new disposable polyethylene tubing during these two events. During the supplemental sampling event in June 2020, MW-

21D, MW-33, MW-35, and MW-36D were sampled using a peristaltic pump, with MW-34D and MW-37D sampled using a QED bladder pump; both sampling pump types were equipped with new disposable polyethylene tubing. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters [i.e., pH, conductivity, oxidation-reduction potential (ORP), temperature, and dissolved oxygen (DO)] during well purging to verify stabilization prior to sampling. Turbidity was measured using a LaMotte 2020we[®] portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

- pH \pm 0.1 Standard Units (s.u.).
- Conductivity \pm 5%.
- \pm 0.2 milligrams per liter (mg/L) or \pm 10%, whichever is greater for 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, 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. (Pace Analytical) in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the monitoring events conducted in March and March/April 2020 are provided in **Appendix D**. The field forms generated during January and June 2020 supplemental sampling events are also provided in this appendix.

3.4 Laboratory Analyses

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

The groundwater analytical results from the March and March/April 2020 monitoring events and supplemental delineation sampling events in January and June 2020 are

summarized in **Table 5**. The Pace Analytical laboratory reports associated with the results presented in **Table 5** are provided in **Appendix D**.

3.5 Quality Assurance & Quality Control Summary

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events in accordance with the site's *Groundwater Monitoring Plan* (Geosyntec, 2020), and included the following: field duplicates, equipment blanks, and field blank samples. QA/QC samples were collected in laboratory-provided bottles and submitted under the same chain of custody as the primary samples for analysis of the same parameters by Pace Analytical.

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

4.0 STATISTICAL ANALYSIS

The following section summarizes the statistical analysis of Appendix III groundwater monitoring data performed pursuant to 40 CFR 257.93. In addition, pursuant to 40 CFR 257.95(d)(2), Georgia Power established groundwater protection standards (GWPS) for the Appendix IV constituents and completed statistical analyses of the Appendix IV groundwater monitoring data obtained during the March/April assessment monitoring event. The report generated from the analyses is provide in **Appendix E**. The March/April 2020 data were analyzed by Groundwater Stats Consulting (GSC) (GSC, 2020).

4.1 Statistical Methods

Analytical data from the March/April 2020 assessment monitoring event were statistically analyzed in accordance with the PE-certified Statistical Analysis Method Certification (October 2017, revised January 2020). 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).

Appendix III statistical analysis was performed to determine if Appendix III constituents have returned to background levels. Appendix IV constituents were evaluated to determine if concentrations statistically exceeded the established state and federal GWPS. Detailed statistical methods used for Appendix III and Appendix IV constituents are discussed in statistical analysis package provided in **Appendix E** and summarized in Sections 4.1.1 and 4.1.2. The GWPS were finalized pursuant to 40 CFR 257.95(d)(2) and presented in **Table 6**.

4.1.1 Appendix III Statistical Methods

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for each of the Appendix III parameters. Interwell prediction limits (PLs) pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. The most recent sample from each downgradient well is compared to the background limit to determine whether there are significant statistical increases (SSIs). An "initial

exceedance" occurs when an Appendix III constituent reported in the groundwater of a downgradient compliance monitoring well exceeds the constituent's associated PL. The 1-of-2 resample plan allows for collection of an independent resample. A confirmed exceedance is noted only when the resample confirms the initial exceedance by also exceeding the statistical limit. If the resample falls within its respective prediction limit, no exceedance is declared.

4.1.2 Appendix IV Statistical Methods

To statistically compare groundwater data to GWPS, confidence intervals are constructed for each of the detected Appendix IV constituents in each downgradient compliance monitoring well. The confidence intervals are compared to both the state and federal GWPS. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its GWPS. If a confidence interval exceeds a GWPS, a statistically significant level (SSL) exceedance is identified.

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

- (1) The maximum contaminant level (MCL) established under 40 CFR 141.62 and 141.66.
- (2) Where an MCL has not been established:
 - (i) Cobalt 0.006 mg/L;
 - (ii) Lead 0.015 mg/L;
 - (iii) Lithium 0.040 mg/L; and
 - (iv) Molybdenum 0.10 mg/L.
- (3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

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

- (1) The federally established MCL.

- (2) Where an MCL has not been established, the background concentration.
- (3) Background levels for constituents where the background level is higher than the MCL.

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

4.2 Statistical Analyses Results

Based on review of the full Appendix III statistical analysis discussion presented in **Appendix E**, groundwater conditions have not returned to background and assessment monitoring should continue. Based on the included Appendix IV statistical analysis, an SSL of cobalt was identified in well HGWC-18 in exceedance of the state and federal GWPS of 0.038 mg/L, derived from site background concentrations. The reported cobalt SSL for HGWC-18 is consistent with the statistical analyses of the 2019 groundwater data. A groundwater exceedance notification acknowledging the March/April 2020 SSL of cobalt was placed in the Operating Record on August 31, 2020, pursuant to 40 CFR 257.95(g).

4.3 Delineation Data

The Co SSL identified in HGWC-18 is vertically delineated by MW-21D (**Table 5**). Due to the presence of a surface water feature in the downgradient direction of HGWC-18 (refer to **Figure 2**), installation of additional wells to horizontally characterize this area is infeasible. Georgia Power proactively collected surface water samples from the unnamed creek west of AP-2 and the Coosa River in July 2020. The surface water samples from both the unnamed creek and the Coosa River indicate cobalt is not detected above the reporting limit of 0.005 mg/L. Based on cobalt results for data collected to date, no cobalt impacts to surface water have been detected and horizontal characterization is complete.

The following provides a summary of the statistical analyses performed for select delineation wells to assess the presence of SSLs of Appendix IV constituents. GSC applied the methods described in Sections 4.1.2; the report generated from the analyses is provided as an addendum to the main statistical report in **Appendix E**. Due to non-routine (or ACM investigation) sampling, some Appendix IV constituents at a well location have differing number of data. GSC also statistically analyzed available Appendix III data as described in Section 4.1.1 and determined that SSIs were reported

in the delineation wells. However, the focus of the following discussion relates to the Appendix IV data analysis to determine possible SSLs.

In accordance with Section 21.1.1 of the Unified Guidance (USEPA, 2009), four independent data is the minimum population size recommended to construct confidence intervals required to assess SSLs for Appendix IV constituents. At the time of this report, only the following delineation wells met this criteria: MW-21D, MW-22, and MW-23D. The data sets for MW-33, MW-34D, MW-35, MW-36D, and MW-37D are limited to less than four independent datums and therefore not subject to the statistical analyses.

Confidence intervals were constructed for MW-21D, MW-22, and MW-23D and compared to both the state and federal GWPS. The statistical analysis identified an SSL of molybdenum in MW-21D in excess of the state GWPS, but not the federal GWPS. The molybdenum concentrations in well MW-21D exhibits a steadily decreasing trend from 0.045 mg/L, reported for the initial sampling of this well in March 2019, to its current lowest detection of 0.019 mg/L for the June 2020 supplemental sampling event. Georgia Power has already installed a well (MW-37D) to vertically delineate the HGWC-18/MW-21D well pair. However, the Appendix IV data set for MW-37D is limited to less than four independent datums, which is the required number to construct confidence intervals to statistically evaluate to GWPS. Georgia Power will continue to monitor these wells until an adequately sized data set is constructed to complete statistical analyses.

In late August 2020, Georgia Power installed additional background wells upgradient to AP-2 to better characterize the deeper zones of the aquifer. The wells will be sampled in September 2020, and the data used to evaluate the need for additional vertical delineation wells downgradient of AP-2. A more detailed discussion regarding horizontal and vertical delineation is presented in the *Semiannual Remedy Selection and Design Progress Report* provided in **Appendix C**.

5.0 MONITORING PROGRAM STATUS

5.1 Assessment Monitoring Status

Pursuant to 40 CFR 257.96(b), Georgia Power will continue to monitor the groundwater at AP-2 in accordance with the assessment monitoring program regulations of 40 CFR 257.95 while ACM efforts are continued to be evaluated. Pursuant to 40 CFR 257.195(g) (1)(iv), the delineation wells will continue to be sampled as part of the ongoing semiannual assessment groundwater monitoring program.

5.2 Assessment of Corrective Measures

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

- (i) the current conceptual site model applicable to evaluating groundwater corrective measures proposed in the ACM Report (Geosyntec, 2019b);
- (ii) the analytical data obtained during supplemental ACM-specific field investigations;
- (iii) the status of evaluating applicable corrective measures; and
- (iv) the planned activities and anticipated schedule for the following semi-annual reporting period.

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

6.0 CONCLUSIONS & FUTURE ACTIONS

This 2020 *Semiannual Groundwater Monitoring & Corrective Action Report* for Plant Hammond AP-2 was prepared to fulfill the requirements of USEPA's CCR Rule and GA EPD Rules for Solid Waste Management 391-3-4-.10. Statistical analysis of the March/April 2020 assessment monitoring data for AP-2 confirmed the continued presence of an SSL of cobalt in AP-2 compliance monitoring well HGWC-18. The analysis also identified an SSL of molybdenum in delineation well MW-21D.

The cobalt SSL in HGWC-18 is vertically delineated to below the state and federal GWPS by MW-21D. Georgia Power proactively collected surface water samples from the unnamed creek west of AP-2 and the Coosa River in July 2020. The data for samples from both the unnamed creek and the Coosa River indicate cobalt is not detected above the reporting limit of 0.005 mg/L. Based on cobalt results for data collected to date, no cobalt impacts to surface water have been detected and horizontal characterization is complete. Georgia Power will continue to collect surface water samples on a frequency coinciding with the semiannual groundwater assessment monitoring events.

An SSL of molybdenum was identified during the reporting period in delineation well MW-21D. However, the molybdenum concentrations in groundwater have steadily decreased since the well was initially sampled; the lowest concentration reported for this well of 0.019 mg/L was recorded during the latest sampling event. To characterize background groundwater conditions and support ACM efforts, Georgia Power installed six additional monitoring wells upgradient of the four Hammond CCR units (AP-1, AP-2, AP-3, and AP-4) in late August 2020. The six new wells will be screened to characterize groundwater conditions in zones of the aquifer deeper than the six wells currently used to establish background conditions the Site (i.e., HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, and HGWA-6). Groundwater data from MW-21D will be evaluated against sample results for the new background wells to assess the source of the molybdenum SSL. Pending this evaluation, Georgia Power will continue routine monitoring of MW-21D and will implement the necessary measures to further delineate Appendix IV constituents in the vicinity of this well if conditions change.

Georgia Power will continue to monitor groundwater in the vicinity of AP-2 under the current assessment monitoring program and adaptively manage the Site as and new data become available. Georgia Power will continue efforts to assess corrective measures as presented in the ACM Report provided in **Appendix C**. The second semiannual assessment monitoring event is scheduled to occur in September 2020.

7.0 REFERENCES

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TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond AP-2, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Ground Surface Elevation (ft)	Top of Casing Elevation ⁽²⁾ (ft)	Top of Screen Elevation ⁽²⁾ (ft)	Bottom of Screen Elevation ⁽²⁾ (ft)	Well Depth (ft BTOC) ⁽³⁾	Screen Interval Length
Compliance Monitoring Well										
HGWA-1	Upgradient	12/3/2014	1550423.32	1940770.00	592.32	595.21	573.12	563.12	32.49	10
HGWA-2	Upgradient	12/2/2015	1549796.87	1939845.15	585.29	587.92	570.29	560.29	27.95	10
HGWA-3	Upgradient	12/2/2015	1549794.41	1939833.39	585.23	587.74	553.23	543.23	44.51	10
HGWA-4	Upgradient	12/3/2014	1549930.45	1939385.45	584.94	587.60	572.24	562.24	25.76	10
HGWA-5	Upgradient	12/10/2015	1548633.33	1937184.17	580.52	583.24	564.92	554.92	28.72	10
HGWA-6	Upgradient	12/11/2015	1548636.35	1937177.73	580.72	583.38	543.72	533.72	49.66	10
HGWC-14	Downgradient	10/16/2014	1547998.96	1938406.27	594.67	597.25	564.67	554.67	42.98	10
HGWC-15	Downgradient	10/20/2014	1547875.33	1937854.92	578.73	581.49	553.93	543.93	37.96	10
HGWC-16	Downgradient	10/21/2014	1548209.83	1937540.33	577.36	580.02	557.36	547.36	33.06	10
HGWC-17	Downgradient	10/22/2014	1548449.71	1937538.98	581.51	584.30	566.91	556.91	27.79	10
HGWC-18	Downgradient	10/22/2014	1548821.27	1937558.32	581.36	584.18	566.86	556.86	27.71	10
Piezometer										
MW-8	Downgradient	10/29/2014	1548171.86	1940016.70	584.25	587.37	565.05	555.05	32.72	10
MW-9	Downgradient	10/29/2014	1548131.38	1938922.16	588.42	591.67	569.12	559.12	32.95	10
MW-12	Downgradient	10/21/2014	1547853.78	1937525.46	580.59	584.33	555.79	545.79	38.94	10
MW-16	Downgradient	10/27/2014	1549104.17	1937940.06	571.70	575.22	562.20	552.20	23.42	10
MW-17	Downgradient	10/28/2014	1549163.28	1938345.81	583.68	587.67	568.98	558.98	29.09	10
MW-18	Downgradient	10/29/2014	1548984.15	1938712.73	589.75	593.07	571.05	561.05	32.42	10
MW-33	Downgradient	11/21/2019	1547973.50	1938412.13	591.19	593.92	566.60	556.60	37.72	10
MW-34D	Downgradient	5/6/2020	1547996.82	1938392.20	593.83	596.51	530.48	520.48	73.68	10
MW-35	Downgradient	5/13/2020	1547905.33	1938417.82	571.88	574.40	558.70	548.70	23.52	10
MW-36D	Downgradient	5/7/2020	1548435.43	1937538.19	581.44	584.10	534.12	524.12	57.65	10
Delineation Monitoring Well										
MW-21D	Downgradient	11/19/2018	1548814.86	1937555.78	581.16	583.84	542.36	532.36	51.88	10
MW-22	Downgradient	11/15/2018	1547854.68	1937832.04	576.05	578.51	551.45	541.45	37.47	10
MW-23D	Downgradient	11/15/2018	1547876.55	1937843.89	579.06	581.30	529.46	519.46	62.24	10
MW-37D	Downgradient	5/8/2020	1548803.01	1937551.05	580.95	583.58	514.65	504.65	76.63	10

Notes:

ft MSL = feet mean sea level.

ft BTOC = feet below top of casing.

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey data obtained 5/19/2020.

(2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data obtained 5/19/2020.

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

Table 2
Groundwater Sampling Event Summary for 2020
Plant Hammond AP-2, Floyd County, Georgia

Well ID	Hydraulic Location	Jan 22, 2020	Mar 2-3, 2020	Mar 25 to Apr 1, 2020	Jun 17-18, 2020	Status of Monitoring Well
Purpose of Sampling Event:		Supplemental Delineation	App. IV Annual	Assessment	Supplemental Delineation	
<i>Compliance Monitoring Well</i>						
HGWA-1	Upgradient	--	X	X	--	Assessment
HGWA-2	Upgradient	--	X	X	--	Assessment
HGWA-3	Upgradient	--	X	X	--	Assessment
HGWA-4	Upgradient	--	X	X	--	Assessment
HGWA-5	Upgradient	--	X	X	--	Assessment
HGWA-6	Upgradient	--	X	X	--	Assessment
HGWC-14	Downgradient	--	X	X	--	Assessment
HGWC-15	Downgradient	--	X	X	--	Assessment
HGWC-16	Downgradient	--	X	X	--	Assessment
HGWC-17	Downgradient	--	X	X	--	Assessment
HGWC-18	Downgradient	--	X	X	--	Assessment
<i>Delineation Monitoring Well</i>						
MW-21D	Downgradient	--	X	X	X	Assessment
MW-22	Downgradient	--	X	X	--	Assessment
MW-23D	Downgradient	--	X	X	--	Assessment
MW-37D	Downgradient	--	--	--	X	Assessment
<i>Piezometer</i>						
MW-33	Downgradient	X	--	X	X	Assessment
MW-34D	Downgradient	--	--	--	X	Assessment
MW-35	Downgradient	--	--	--	X	Assessment
MW-36D	Downgradient	--	--	--	X	Assessment

Table 3
 Summary of Groundwater Elevations
 Plant Hammond AP-2, Floyd County, Georgia

Well ID	Top of Casing Elevation ⁽¹⁾ (ft)	March 2, 2020		March 23, 2020	
		Depth to Water (ft BTOC)	Groundwater Elevation ⁽¹⁾ (ft)	Depth to Water (ft BTOC)	Groundwater Elevation ⁽¹⁾ (ft)
Compliance Monitoring Well Network					
HGWA-1	595.21	7.40	587.81	7.37	587.84
HGWA-2	587.92	4.41	583.51	5.15	582.77
HGWA-3	587.74	4.47	583.27	4.69	583.05
HGWA-4	587.60	3.80	583.80	3.74	583.86
HGWA-5	583.24	3.79	579.45	3.96	579.28
HGWA-6	583.38	3.08	580.30	3.16	580.22
HGWC-14	597.25	23.52	573.73	24.02	573.23
HGWC-15	581.49	12.55	568.94	14.43	567.06
HGWC-16	580.02	7.83	572.19	9.93	570.09
HGWC-17	584.30	14.75	569.55	16.95	567.35
HGWC-18	584.18	14.80	569.38	17.06	567.12
Piezometer					
MW-8	586.93	16.00	570.93	17.41	569.52
MW-9	590.95	12.21	578.74	12.88	578.07
MW-12	583.27	14.25	569.02	16.79	566.48
MW-16	574.22	4.30	569.92	5.08	569.14
MW-17	586.78	7.92	578.86	7.49	579.29
MW-18	592.28	9.68	582.60	10.25	582.03
MW-33	593.92	20.76	573.16	21.27	572.65
MW-34D ⁽²⁾	596.51	--	--	--	--
MW-35 ⁽²⁾	574.40	--	--	--	--
MW-36D ⁽²⁾	584.10	--	--	--	--
Delineation Monitoring Wells					
MW-21D	583.84	13.75	570.09	15.71	568.13
MW-22	578.51	9.78	568.73	12.29	566.22
MW-23D	581.30	12.39	568.91	15.15	566.15
MW-37D ⁽²⁾	583.58	--	--	--	--
Surface Water Gauge					
Coosa River	--	--	568.50	--	--

Notes:

-- = not measured or not applicable.

ft = feet.

ft BTOC = feet below top of casing.

(1) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data obtained 5/19/2020.

(2) MW-34D, MW-35, MW-36D and MW-37D installed in May 2020.

Table 4
Groundwater Gradient and Flow Velocity Calculations for 2020
Plant Hammond AP-2, Floyd County, Georgia

Flow Path Direction ⁽¹⁾	March 2, 2020				March 23, 2020				Average $\Delta h/\Delta l$ (ft/ft)
	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	h_1 (ft)	h_2 (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)	
Westerly Flow Path (MW-18 to HGWC-17)	582.60	569.55	1,300	0.010	582.03	567.35	1,300	0.011	0.011

Flow Path Direction ⁽¹⁾	Averaged for 2020			
	K (ft/d)	n	$\Delta h/\Delta l$ (ft/ft)	V (ft/d) ⁽²⁾
Westerly Flow Path (MW-18 to HGWC-17)	0.47	0.15	0.011	0.034

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

ft/yr = feet per year

h_1, h_2 = point of interpreted groundwater elevation

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

K = hydraulic conductivity

Δl = distance between location 1 and 2

n = effective porosity

V = groundwater flow velocity

(1) Flow path direction relative to the orientation of AP-2 and illustrated on Figures 3 and 4 of associated report.

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

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-1	HGWA-2	HGWA-2	HGWA-3	HGWA-3	HGWA-4	HGWA-4	HGWA-5	HGWA-5	HGWA-6	HGWA-6	HGWC-14	HGWC-14	HGWC-15	HGWC-15	HGWC-16	HGWC-16		
Sample Date:	3/2/2020	3/25/2020	3/2/2020	3/25/2020	3/2/2020	3/25/2020	3/2/2020	3/26/2020	3/2/2020	3/26/2020	3/2/2020	3/25/2020	3/3/2020	3/30/2020	3/3/2020	3/26/2020	3/3/2020	3/30/2020		
Parameter ^(1,2,3)																				
APPENDIX III	Boron*	--	0.025 J	--	0.039 J	--	0.0096 J	--	0.012 J	--	0.0072 J	--	0.021 J	--	11.7	--	2.1	--	2.4	
	Calcium*	--	127	--	23.0	--	89.8	--	14.9	--	27.8	--	58.1	--	600	--	240	--	208	
	Chloride*	--	20.4	--	5.2	--	6.1	--	3.4	--	1.4	--	1.2	--	236	--	142	--	80.2	
	Fluoride	0.076 J	0.098 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.053 J	0.066 J	<0.050	<0.050	<0.050	0.092 J	0.064 J	<0.050	<0.050	0.059 J	
	pH	7.10	6.95	5.43	5.36	7.12	7.4	5.63	5.77	6.80	6.38	7.67	7.39	4.77	4.57	6.00	6.03	7.1	7.09	
	Sulfate*	--	85.9	--	46.3	--	50.5	--	<0.50	--	21.6	--	35.1	--	1150	--	438	--	223	
	TDS	--	496	--	138	--	284	--	69.0	--	104	--	240	--	2590	--	1000	--	787	
APPENDIX IV	Antimony	<0.00027	--	<0.00027	--	<0.00027	--	<0.00027	--	<0.00027	--	<0.00027	--	<0.00027	--	<0.00027	--	<0.00027	--	
	Arsenic	<0.00035	<0.00035	0.00043 J	<0.00035	0.00040 J	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	0.0035 J	0.0051	<0.00035	<0.00035	<0.00035	0.0011 J	
	Barium	0.034	0.043	0.11	0.12	0.14	0.13	0.023	0.026	0.053	0.045	0.19	0.19	0.018	0.020	0.018	0.016	0.12	0.11	
	Beryllium	<0.000074	<0.000074	0.00014 J	0.00016 J	<0.000074	<0.000074	0.00019 J	0.000076 J	<0.000074	<0.000074	<0.000074	<0.000074	0.00043 J	0.00043 J	<0.000074	<0.000074	<0.000074	<0.000074	
	Cadmium	<0.00011	<0.00011	<0.00011	0.00014 J	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	0.0015 J	0.0016 J	<0.00011	<0.00011
	Chromium	<0.00039	0.00072 J	0.00041 J	<0.00039	<0.00039	<0.00039	0.00040 J	<0.00039	0.00050 J	<0.00039	<0.00039	<0.00039	<0.00039	0.00042 J	0.00066 J	<0.00039	<0.00039	0.00071 J	0.00040 J
	Cobalt⁺	<0.00030	<0.00030	0.019	0.020	<0.00030	<0.00030	0.00063 J	0.00058 J	0.00093 J	0.0013 J	<0.00030	<0.00030	0.029	0.028	0.030	0.022	0.00037 J	<0.00030	
	Fluoride	0.076 J	0.098 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.053 J	0.066 J	<0.050	<0.050	<0.050	0.092 J	0.064 J	<0.050	<0.050	0.059 J	
	Lead	0.000048 J	<0.000046	0.000095 J	0.00011 J	<0.000046	<0.000046	0.00026 J	0.000059 J	<0.000046	<0.000046	<0.000046	<0.000046	0.0017 J	0.0015 J	0.000053 J	<0.000046	0.00016 J	0.000073 J	
	Lithium	0.0012 J	0.00083 J	0.0017 J	0.0017 J	0.0037 J	0.0035 J	0.0012 J	0.00095 J	0.0036 J	0.0029 J	0.012 J	0.011 J	<0.00078	<0.00078	0.0084 J	0.0061 J	0.0047 J	0.0041 J	
	Mercury	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	
	Molybdenum	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	
	Comb. Radium 226/228	0.610 U	4.36	1.58	0.621 U	0.249 U	0.833 U	0.937 U	0.578 U	0.547 U	0.907 U	0.676 U	0.509 U	1.84	1.08 U	1.43	0.855 U	1.32 U	0.288 U	
	Selenium	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.0045 J	0.0049 J	<0.0013	<0.0013	<0.0013	<0.0013	
Thallium	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	0.000057 J	0.00026 J	0.00028 J	<0.000052	<0.000052	<0.000052	<0.000052		

Notes:

-- = Parameter was not analyzed.

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

< = Indicates the parameter was not detected above the analytical MDL.

TDS = Total dissolved solids.

U = Indicates the parameter was not detected above the analytical MDL (Specific to combined radium).

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) TDS = Total dissolved solids.

(2) Metals were analyzed by EPA Method 6020B, mercury was analyzed by EPA Method 7470A, 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.

(4) Appendix III parameters with a "*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, the Appendix IV parameter with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the March 2020 assessment monitoring event.

(5) Well is designated as delineation monitoring well.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWC-17	HGWC-17	HGWC-18	HGWC-18	MW-21D ⁽⁴⁾	MW-21D ⁽⁴⁾	MW-21D ⁽⁴⁾	MW-22 ⁽⁴⁾	MW-22 ⁽⁴⁾	MW-23D ⁽⁴⁾	MW-23D ⁽⁴⁾	MW-33 ⁽⁴⁾	MW-33 ⁽⁴⁾	MW-33 ⁽⁴⁾	MW-34D ⁽⁴⁾	MW-35 ⁽⁴⁾	MW-36D ⁽⁴⁾	MW-37D ⁽⁴⁾		
Sample Date:	3/3/2020	3/31/2020	3/3/2020	3/31/2020	3/3/2020	4/1/2020	6/17/2020	3/2/2020	3/27/2020	3/2/2020	4/1/2020	1/22/2020	4/1/2020	6/17/2020	6/18/2020	6/18/2020	6/18/2020	6/18/2020		
Parameter ^(1,2,3)																				
APPENDIX III	Boron*	--	6.9	--	9.4	--	6.3	5.8	--	2.4	--	3.5	11.2	11.6	10.3	9.4	11.9	0.067 J	0.14	
	Calcium*	--	328	--	418	--	438	434	--	212	--	342	638	567	561	584	517	65.2	165	
	Chloride*	--	161	--	126	--	236	223	--	141	--	166	231	242	250	259	229	2.3	151	
	Fluoride	<0.050	<0.050	0.34	0.45	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.18 J	0.15 J	0.25	0.082 J	0.053 J	0.053 J	0.10	
	pH	6.35	6.28	4.55	4.43	6.72	6.90	6.47	5.97	5.71	7.05	6.80	--	4.35	4.36	7.35	5.46	6.45	7.78	
	Sulfate*	--	484	--	934	--	889	901	--	419	--	478	1250	1210	1210	1100	1160	50.5	286	
	TDS	--	1310	--	1860	--	1940	2100	--	1100	--	1530	2310	2590	2540	2320	2310	237	888	
APPENDIX IV	Antimony	<0.00027	--	<0.00027	--	<0.00027	--	--	<0.00027	--	<0.00027	--	--	--	--	--	--	--		
	Arsenic	<0.00035	0.00080 J	0.0057	0.0056	<0.00035	0.0013 J	<0.00035	<0.00035	<0.00035	<0.00035	0.00082 J	--	0.0061	0.0031 J	0.0032 J	0.0050 J	0.00046 J	0.0021 J	
	Barium	0.026	0.029	0.026	0.029	0.058	0.066	0.054	0.027	0.025	0.060	0.065	--	0.027	0.024	0.044	0.029	0.15	0.19	
	Beryllium	<0.000074	<0.000074	0.0029 J	0.0030	<0.000074	<0.000074	<0.000074	<0.000074	<0.000074	<0.000074	<0.000074	--	0.0011 J	0.00099 J	0.00015 J	0.00032 J	<0.000074	0.00012 J	
	Cadmium	<0.00011	<0.00011	0.0021 J	0.0017 J	<0.00011	<0.00011	<0.00011	0.0021 J	0.0019 J	<0.00011	<0.00011	--	0.00022 J	0.00021 J	<0.00011	0.00053 J	<0.00011	<0.00011	
	Chromium	0.0018 J	<0.00039	0.00040 J	<0.00039	<0.00039	<0.00039	0.00057 J	<0.00039	<0.00039	<0.00039	0.00086 J	--	0.00069 J	<0.00039	0.0059 J	<0.00039	0.00045 J	0.0048 J	
	Cobalt⁺	0.016	0.016	0.15	0.16	<0.00030	<0.00030	<0.00030	0.043	0.025	0.0011 J	0.0011 J	0.052	0.058	0.053	0.011	0.091	<0.00030	0.0015 J	
	Fluoride	<0.050	<0.050	0.34	0.45	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.18 J	0.15 J	0.25	0.082 J	0.053 J	0.053 J	0.10	
	Lead	0.00013 J	0.000077 J	0.0013 J	0.0014 J	0.000047 J	0.000048 J	<0.000046	0.000094 J	<0.000046	0.000051 J	<0.000046	--	0.0017 J	0.0017 J	0.00087 J	0.00016 J	<0.000046	0.0017 J	
	Lithium	0.0012 J	0.00090 J	0.012 J	0.012 J	0.026 J	0.026 J	0.023 J	0.0015 J	0.0013 J	0.0025 J	0.0024 J	--	0.0011 J	0.00097 J	0.0021 J	0.0046 J	0.0087 J	0.038 J	
	Mercury	<0.00014	--	<0.00014	--	<0.00014	--	--	<0.00014	--	<0.00014	--	--	--	--	--	--	--	--	
	Molybdenum	<0.00095	<0.00095	<0.00095	<0.00095	0.025	0.024	0.019	<0.00095	<0.00095	0.0030 J	0.0032 J	--	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	0.023
	Comb. Radium 226/228	1.33	0.591 U	2.35	2.70	1.94	0.758 U	0.691 U	0.872 U	0.960 U	0.964 U	0.914 U	--	2.57	1.43 U	1.36	2.02	1.85	1.79	
Selenium	<0.0013	<0.0013	0.014	0.019	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	--	0.011	0.014	0.0025 J	0.014	<0.0013	<0.0013		
Thallium	0.00011 J	0.00014 J	0.00013 J	0.00015 J	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	--	0.00029 J	0.00028 J	0.00015 J	0.00013 J	<0.000052	<0.000052		

Table 6
Summary of Background Concentrations and Groundwater Protection Standards
Plant Hammond AP-2, Floyd County, Georgia

Analyte	Units	Background ⁽¹⁾	Federal GWPS ⁽²⁾	State GWPS ⁽³⁾
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.22	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.0025	0.005	0.005
Chromium	mg/L	0.019	0.1	0.1
Cobalt	mg/L	0.038	0.038	0.038
Fluoride	mg/L	0.36	4	4
Lead	mg/L	0.005	0.015	0.005
Lithium	mg/L	0.03	0.04	0.03
Mercury	mg/L	0.0005	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	4.36	5	5

Notes:

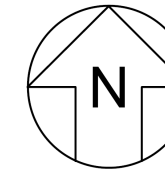
"mg/L" = milligrams per liter.

"pCi/L" = picocuries per liter.

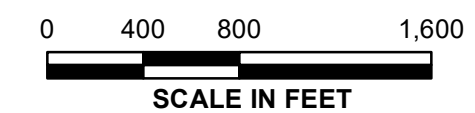
1. The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a).
2. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under 141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS is used; or (iii) background concentrations for constituents where the background level is higher than the MCL or rule-specified GWPS.
3. Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents where the background level is higher than the MCL.

FIGURES

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\CCR Reports\AP-2\Figure 1_SiteMap.mxd 8/24/2020 4:12:55 PM



Note:
1. Aerial photograph source: Google Earth Pro, August 2019.



SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
FLOYD COUNTY, GEORGIA

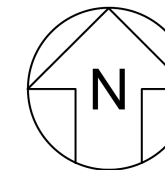
Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants






KENNESAW, GA

AUGUST 2020

**FIGURE
1**



LEGEND

-  Compliance Monitoring Well
-  Horizontal Delineation Monitoring Well
-  Vertical Delineation Monitoring Well
-  Piezometer
-  Surface Water Sampling Location



Note:
 1. Aerial photograph source: Google Earth Pro, August 2019.
 2. Two upstream Coosa River surface water sampling locations, H-0.5 and H-2, are not shown on the figure and located at 1942375.24, 1548207.69 and 1943448.96, 1543373.73, respectively.



MONITORING WELL NETWORK AND SAMPLING LOCATION MAP

GEORGIA POWER COMPANY
 PLANT HAMMOND AP-2
 ROME, FLOYD COUNTY, GEORGIA

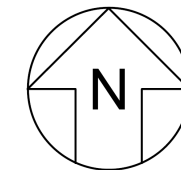
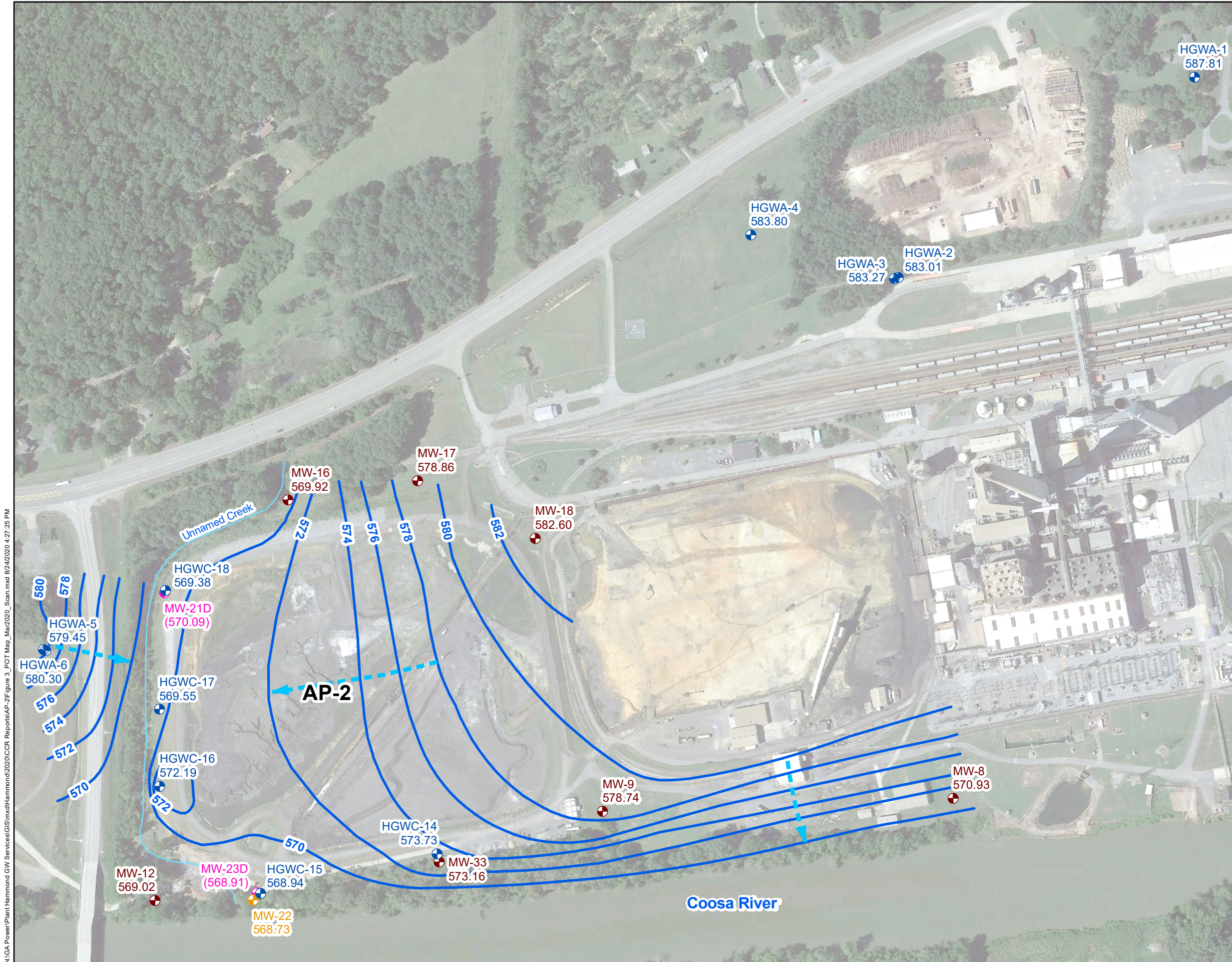
Prepared For:  Georgia Power

Prepared By:  Geosyntec consultants

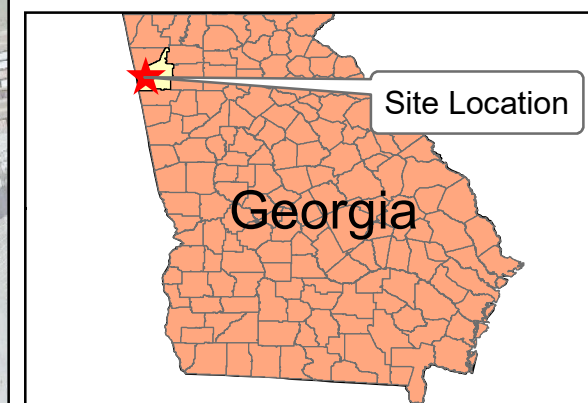
KENNESAW, GA AUGUST 2020

FIGURE 2

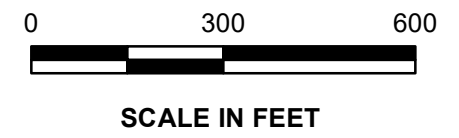
\\arc-01\proj1\GA Power\Plant Hammond GIS\mxd\Hammond\2020\CCR Reports\AP-2\Figure 2 WellMap.mxd 8/31/2020 5:23:42 PM



- LEGEND**
- Compliance Monitoring Well
 - Horizontal Delineation Monitoring Well
 - Vertical Delineation Monitoring Well
 - Piezometer
 - Groundwater Elevation Contour
 - ▶ Approximate Groundwater Flow Direction
 - Unnamed Creek



- Notes:**
1. Water level elevation recorded on March 2, 2020. Elevation provided in feet referenced to North American Vertical Datum (NAVD) 88.
 2. Water elevations in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
 3. The map shows only the wells/piezometers installed at the time of the gauging event.
 4. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 2, 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
ROME, FLOYD COUNTY, GEORGIA

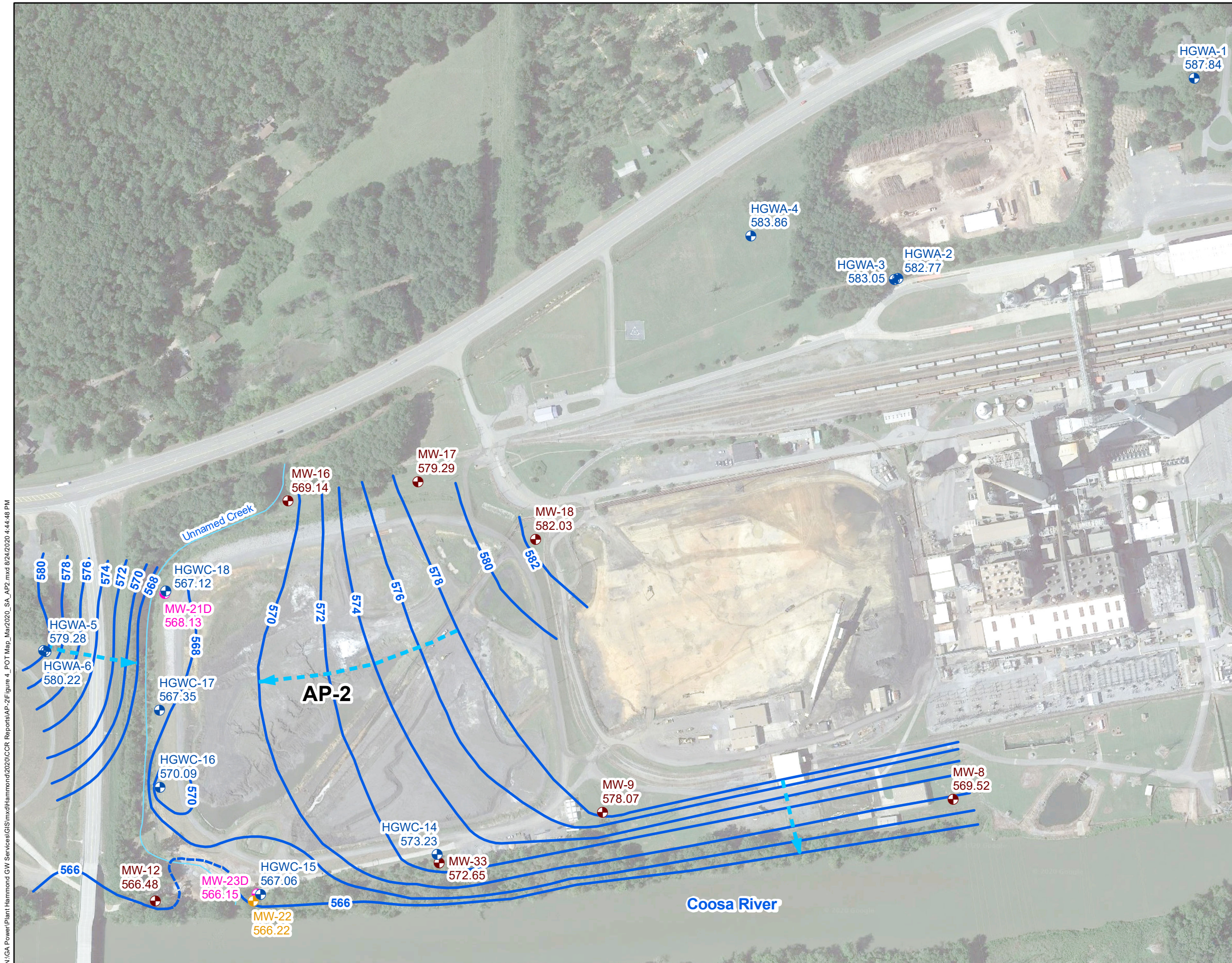
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

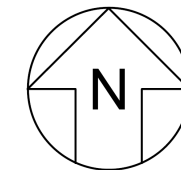
KENNESAW, GA AUGUST 2020

**FIGURE
3**

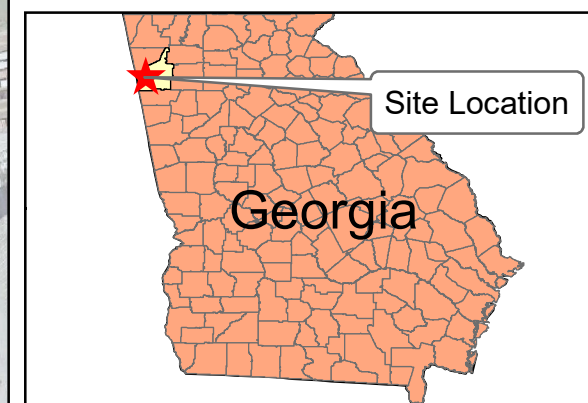
N:\GA Power\Plant Hammond GIS\mxd\Hammond\2020\CCR_Reports\AP-2\Figure_3_POT_Map_Mar2020_Scan.mxd 8/24/2020 4:27:25 PM



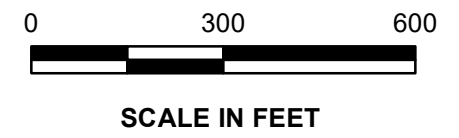
N:\GA Power\Plant Hammond\GW Services\GIS\mxd\Hammond\2020\CCR_Reports\AP-2\Figure_4_POT_Map_Mar2020_SA_AP2.mxd 8/24/2020 4:44:48 PM



- LEGEND**
- Compliance Monitoring Well
 - Horizontal Delineation Monitoring Well
 - Vertical Delineation Monitoring Well
 - Piezometer
 - Groundwater Elevation Contour
 - Approximate Groundwater Flow Direction
 - Unnamed Creek



- Notes:**
1. Water level elevation recorded on March 23, 2020. Elevation provided in feet referenced to North American Vertical Datum (NAVD) 88.
 2. Water elevations in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
 3. The map shows only the wells/piezometers installed at the time of the gauging event.
 4. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 23, 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA AUGUST 2020

**FIGURE
4**

APPENDIX A

Well Design, Installation and Development
Report – Addendum No 2, Plant Hammond
Ash Pond 2 (AP-2)

Prepared for

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

WELL DESIGN, INSTALLATION, AND DEVELOPMENT REPORT - ADDENDUM

No. 2

**PLANT HAMMOND ASH POND 2
(AP-2)**

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

July 2020



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

Plant Hammond

Ash Pond 2

July 17, 2020

A handwritten signature in black ink that reads "Whitney Law".

Whitney Law, P.E.

Project Manager

Geosyntec Consultants

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2.3	Well Casings and Screens.....	2
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Appendix B	Boring and Well Construction Logs
Appendix C	Well Development Forms
Appendix D	Certified Well Survey Data

LIST OF ACRONYMS

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

1. INTRODUCTION

This report provides details regarding the design, installation, and development of four groundwater monitoring wells to supplement the current groundwater monitoring system at Georgia Power Company (GPC) Plant Hammond (Site) Ash Pond 2 (AP-2). The report was prepared as an addendum to previously submitted well design, installation, development and decommissioning reports issued for the Site (ERM, 2017; Geosyntec, 2019b), and meets the requirements promulgated in the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D], specifically 40 CFR §257.91(e)(1) and Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10.

Plant Hammond is located in Floyd County, approximately 10 miles west of Rome, Georgia. The current groundwater monitoring system at AP-2 includes 11 wells associated with the CCR compliance monitoring well network and a network of secondary groundwater monitoring wells and piezometers. The locations of these wells and piezometers are shown on **Figure 1**.

2. DRILLING AND WELL INSTALLATION

Well installation and development activities were performed according to accepted industry standards and following guidelines within the *Manual for Groundwater Monitoring* (GA EPD, 1991). Well drilling, installation, and surface completion activities were performed by Cascade Drilling, Inc of Midland, North Carolina under contact with, and the supervision of, Southern Company Services (SCS) Civil Field Services (CFS) personnel. In accordance with the Georgia Water Well Standards Act, the driller was required to have an insurance bond on file with the State of Georgia at the time of drilling. A copy of this bond is provided in **Appendix A**. A professional geologist employed with Geosyntec Consultants (Geosyntec) and registered to practice in the State of Georgia documented the drilling and installation efforts to record observations, soil and rock descriptions, subsurface stratigraphy, water elevations, and other field activities. Geosyntec was also responsible for the development of the newly installed wells.

This report presents the details for the installation and development of AP-2 area wells MW-34D, MW-35, MW-36D, and MW-37D. The locations of these wells are shown on **Figure 1**. Well construction details are provided in **Table 1**; boring and well construction logs are included in **Appendix B**.

2.1 Drilling Method

The boreholes were advanced using rotosonic drilling techniques with continuous core collection. A Terra Sonic Compact Crawler drill rig with a 6-inch sonic drill rod was used to install all wells. Care was taken so that the drilling methods did not introduce contamination of the groundwater from surface activities. Drilling equipment was cleaned between each borehole.

2.2 Screened Interval

Details regarding the well screen intervals are provided in **Table 1**. Wells are screened in the uppermost water bearing unit of the Site. The four new wells at AP-2 are screened from approximately 561 to 507 feet (referenced to the North American Vertical Datum of 1988). All wells are constructed with 10 feet of well screen.

2.3 Well Casings and Screens

The wells were constructed of 2-inch inner diameter Schedule 40 polyvinyl chloride (PVC) casing with flush-threaded fittings. Each well was installed with a 10-foot nominal length pre-packed dual-wall well screen with 0.010-inch slots. The casings and pre-

packed screens arrived pre-cleaned and packaged by the manufacturer. The pre-packed well screen was constructed onsite by packing sand between slotted PVC and the well screen. Well construction materials are sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. Casing and screens are flush-threaded. Solvent or glue was not used to construct the wells. A threaded bottom cap was attached to the bottom of the screen. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF) rated. Well screen interval details are provided in **Table 1**.

2.4 Well Intake Design

Wells were designed and constructed to: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the wells; and (3) ensure sufficient structural integrity to prevent collapse of the well. The annular space between the face of the formation and the screen was filled to minimize passage of formation materials into the wells. A filter pack of clean, well-rounded, quartz sand was installed in each well. The 0.01-inch slot size was selected to minimize the inflow of formation material without impairing influent groundwater flow.

2.5 Filter Pack

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

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

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

2.6 Annular Seal

A minimum of two feet of bentonite chips (PelPlug time-release -coated 3/8-inch bentonite pellets) were placed immediately above the filter pack by gravity-pouring into the annular space and hydrated per manufacture's specifications. A tremie pipe was used to probe the annular space to ensure that no bridging occurred. If any new well was installed within 15 feet of an existing well, the bentonite seal was also brought above the elevation corresponding to the screen top of the nearby well. This was done to prevent grout from entering the water-bearing or screen zone. The bentonite was hydrated with potable water for a duration meeting the manufacture's specifications prior to grouting the remaining annulus.

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

2.7 Cap and Protective Casing

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

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

3. WELL DEVELOPMENT

The wells were developed using a combination of surging and pumping to (1) restore the natural hydraulic conductivity of the formation, and (2) to remove fine-grained sediment to ensure low-turbidity groundwater samples. Wells were alternately surged and purged until visually clear of particulates. Turbidity, pH, temperature, conductivity, oxidation-reduction potential (ORP), and dissolved oxygen (DO) measurements were recorded to ensure that each well was fully developed. The development forms are included in **Appendix C**.

All equipment and tubing placed in the well was decontaminated and cleaned prior to use and tubing was disposed of upon completion.

4. SURVEY

Upon completion of the well installation, the horizontal locations and vertical elevations were surveyed by a Georgia-licensed surveyor. The top of the PVC well casing [top of casing (TOC) elevation] and the survey pin installed at each well pad were surveyed to within 0.5-foot horizontal accuracy and to 0.01-foot vertical accuracy. The horizontal location (i.e., northings and eastings) was recorded in feet relative to the North America Datum of 1983 (NAD) with the vertical elevation recorded in feet relative to the North American Vertical Datum of 1988. Certified survey data are provided in the well construction table (**Table 1**). A copy of the certified well survey data for the AP-2 well network is provided in **Appendix D**.

5. REFERENCES

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

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

Geosyntec Consultants, 2019b. Well Design, Installation and Development Report – Addendum, Plant Hammond Ash Ponds 1 and 2 (AP-1 and AP-2). June 2019.

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

TABLE

Table 1
 Summary of Well Construction Details
 Plant Hammond AP-2, Floyd County, Georgia

Well ID	Purpose	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Ground Surface Elevation ⁽²⁾ (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Elevation (ft NAVD88)	Well Depth (ft bgs) ⁽³⁾
MW-34D	Delineation	5/6/2020	1547996.82	1938392.20	593.83	596.51	533.16	523.16	71.00
MW-35	Delineation	5/13/2020	1547905.33	1938417.82	571.88	574.40	561.21	551.21	21.00
MW-36D	Delineation	5/7/2020	1548435.43	1937538.19	581.44	584.10	536.77	526.77	55.00
MW-37D	Delineation	5/8/2020	1548803.01	1937551.05	580.95	583.58	517.28	507.28	74.00

Notes:

ft bgs = feet below ground surface.

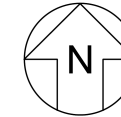
(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey completed by GEL Solutions in May 19, 2020.

(2) Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Ground surface elevation defined at the survey nail installed within the well pad.





(3) Total well depth accounts for 4-inch sump.

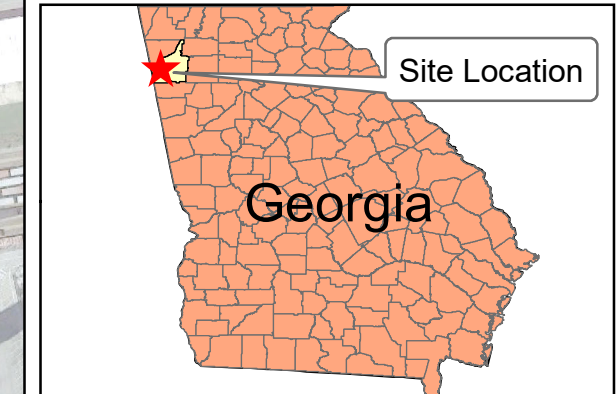
FIGURE

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\Well Installation Reports\2020_06_AP2\AP2\Figure 1_GW Monitoring Network_AP2.mxd 7/16/2020 4:16:09 PM



LEGEND

-  Compliance Monitoring Well
-  Horizontal Delineation Monitoring Well
-  Piezometer
-  Vertical Delineation Monitoring Well



Notes:
1. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

GROUNDWATER MONITORING NETWORK MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA

JULY 2020

FIGURE
1

APPENDIX A

Well Driller Performance Bonds

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. 800033976

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

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

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

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

does hereby continue said bond in force for the further period

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

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

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

Description of bond Performance Bond for Water Well Contractors

Premium: \$1200.00

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

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

Atlantic Specialty Insurance Company

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

Parker, Smith & Feek, Inc.

Agent

2233 112th Ave NE Bellevue, WA 98004

Address of Agent

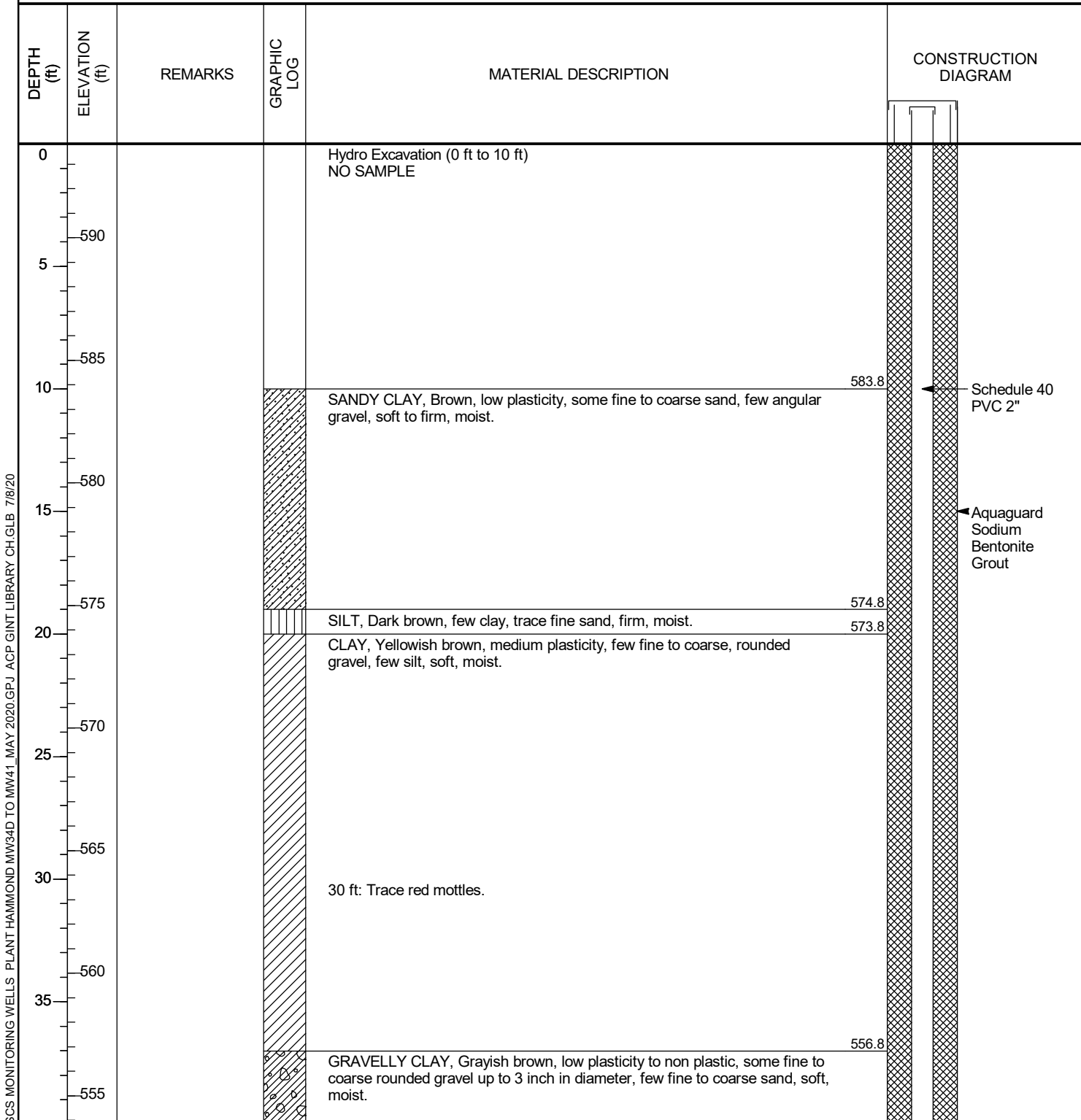
425-709-3600

Telephone Number of Agent

APPENDIX B

Boring and Well Construction Logs

CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/6/20</u> COMPLETED <u>5/6/20</u>	NORTHING <u>1547996.82 ft</u> EASTING <u>1938392.20 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>593.83 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>596.51 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41, MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

(Continued Next Page)

CLIENT Southern Company Services

PROJECT NAME Plant Hammond Well Installation

PROJECT NUMBER GW6581B

PROJECT LOCATION Plant Hammond

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40					
	550				
45					
	545				
50					
	540				
55					
	535				
60					
	530				
65					
	525				
70					
	520				

CLAY, Yellowish brown to dark brown, low to medium plasticity, trace silt and fine sand, soft, moist.

CLAYEY GRAVEL, Yellowish brown, gravel is rounded, up to 3 inch diameter, some clay, trace silt, loose, wet.

SHALE, Dark gray, pale brown near top, trace calcite veins, thinly bedded, fine grained, broken pieces of rock, moderately weathered.

NO RECOVERY (70 ft to 71 ft)

Aquaguard Sodium Bentonite Grout

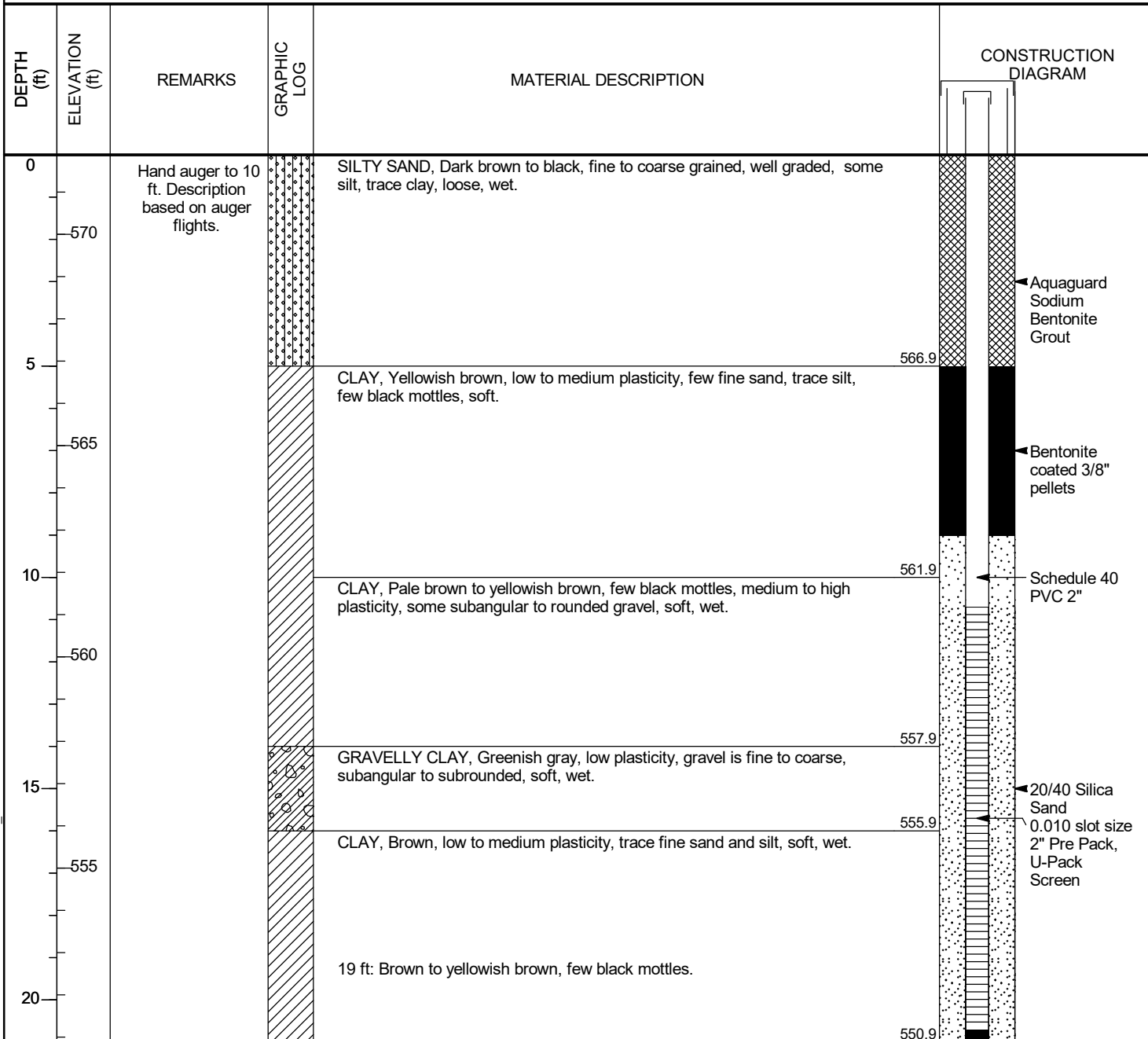
Bentonite coated 3/8" pellets

20/40 Silica Sand
0.010 slot size
2" Pre Pack,
U-Pack
Screen

Bottom of borehole at 71.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

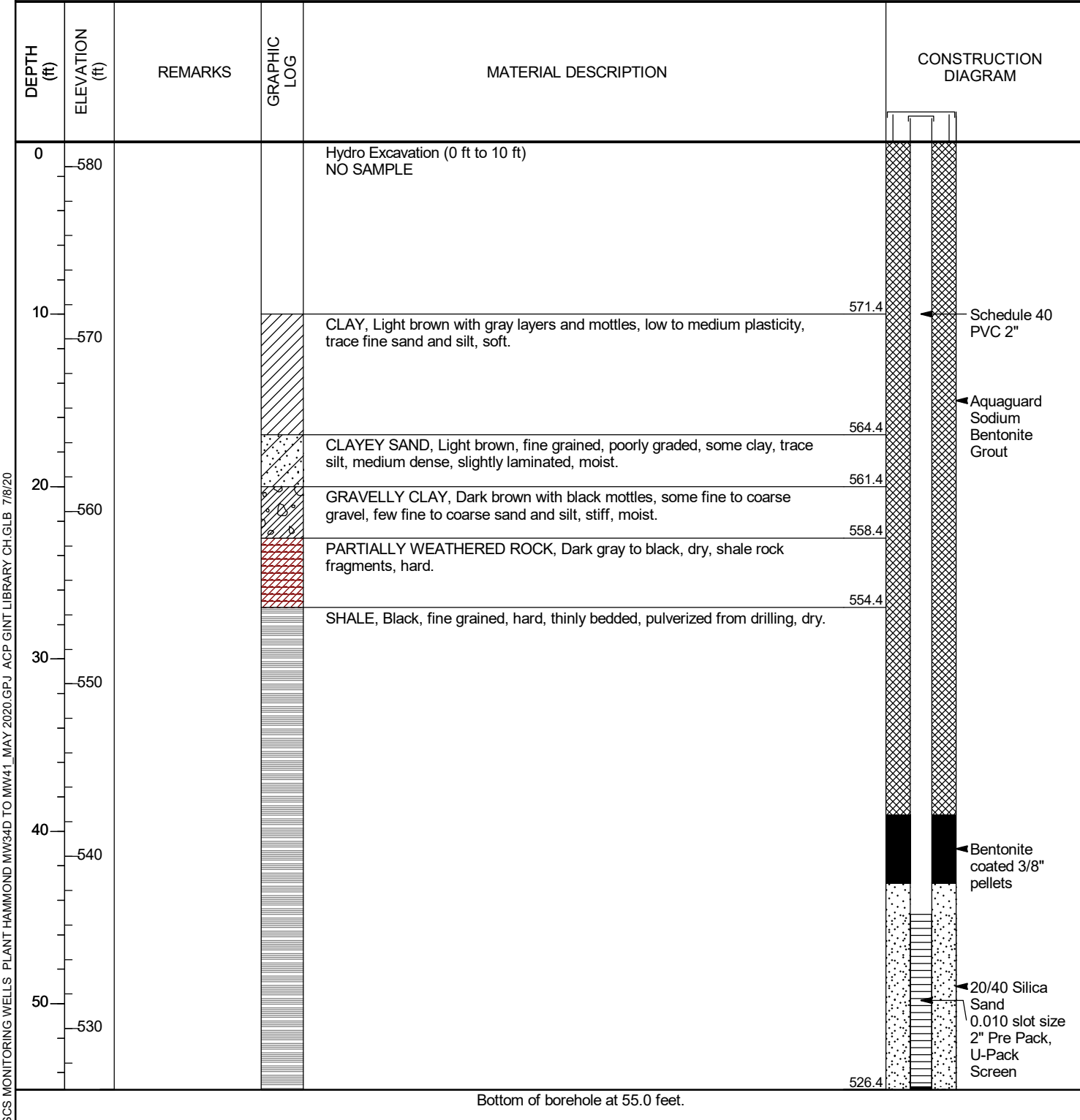
CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/13/20</u> COMPLETED <u>5/13/20</u>	NORTHING <u>1547905.33 ft</u> EASTING <u>1938417.82 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>571.88 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>574.40 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



Bottom of borehole at 21.0 feet.

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20




CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/7/20</u> COMPLETED <u>5/7/20</u>	NORTHING <u>1548435.43 ft</u> EASTING <u>1937538.19 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>581.44 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>584.10 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>



SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20


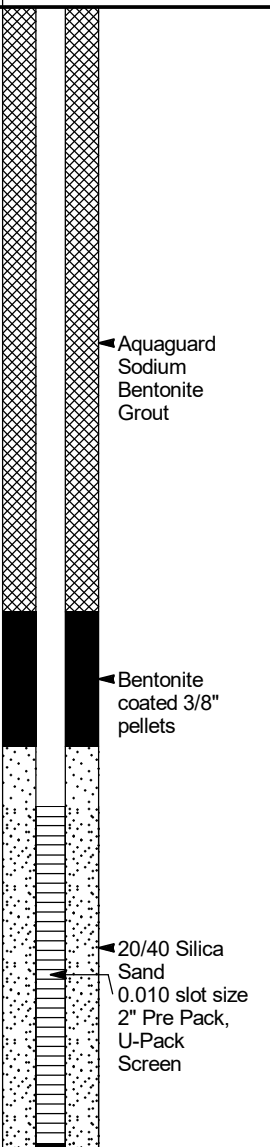
CLIENT <u>Southern Company Services</u>	PROJECT NAME <u>Plant Hammond Well Installation</u>
PROJECT NUMBER <u>GW6581B</u>	PROJECT LOCATION <u>Plant Hammond</u>
DATE STARTED <u>5/8/20</u> COMPLETED <u>5/8/20</u>	NORTHING <u>1548803.01 ft</u> EASTING <u>1937551.05 ft</u>
DRILLER <u>Cascade Drilling</u>	GROUND ELEVATION <u>580.95 ft</u> BORING DIAMETER <u>6 in</u>
DRILLING METHOD <u>Sonic</u>	TOP OF CASING ELEVATION <u>583.58 ft</u>
SAMPLING METHOD <u>4" core 6" override</u>	GEOPHYSICAL CONTRACTOR <u>---</u>
RIG TYPE <u>Terra Sonic Compact Crawler</u>	LOGGED BY <u>N.Tilahun</u> CHECKED BY <u>J. Ivanowski</u>

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	580	No water added during drilling.		Hydro Excavation (0 ft to 10 ft) NO SAMPLE	
5	575				
10	570			GRAVELLY SAND, Yellowish brown, fine to coarse grained, well graded, some subangular to rounded gravel, loose, wet to moist.	571.0 ← Schedule 40 PVC 2"
15	565				
20	560			PARTIALLY WEATHERED ROCK, Black, thinly bedded, fine grained, shale rock fragments, hard.	563.0 ← Aquaguard Sodium Bentonite Grout
25	555			SHALE, Black, fine grained, thinly bedded, weathered, pulverized from drilling, hard, wet to moist.	
30	550			30 ft: Moist due to drilling potentially evaporate moisture.	
35	545				

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

PROJECT NUMBER GW6581B **PROJECT LOCATION** Plant Hammond

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40 45 50 55 60 65 70	540 535 530 525 520 515 510			SHALE, Black, fine grained, thinly bedded, weathered, pulverized from drilling, hard, wet to moist. (continued)	 <p> ← Aquaguard Sodium Bentonite Grout ← Bentonite coated 3/8" pellets ← 20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen </p>

Bottom of borehole at 74.0 feet.

507.0

SCS MONITORING WELLS PLANT HAMMOND MW34D TO MW41 MAY 2020.GPJ ACP GINT LIBRARY CH.GLB 7/8/20

APPENDIX C

Well Development Forms

WELL DEVELOPMENT LOG SHEET

Client: <u>Go Power</u>	Project No: <u>GW658113</u>	Development Date: <u>5/21/20</u>
Site: <u>Plant Humana</u>	Location: <u>APA</u>	Field Personnel Name: <u>Ben Weinmann</u>
Well ID: <u>MW-21D</u>	Pump Type/Model: <u>ManSoun</u>	
Total Depth (ft) (after purge): <u>71'</u>	Tubing Material: <u>Poly Poly</u>	
Depth to Water (ft): <u>20.89</u>	Pump Intake Depth (ft): <u>61-71'</u>	
Well Diameter (in): <u>2"</u>	Start/Stop Purge Time: <u>3:37</u>	
Well Volume (gal) = 0.041d ₂ h	Purge Rate (mL/min): <u>~1L/min</u>	
Well Volume (L) = gal * 3.785:	Total Purge Volume (L):	

d = well diameter (inches); h = length of water column (feet)

Well Type Flush: Stick Up

Well Lock: Yes No

Well Cap Condition: Good Replace

Well Tag Present: Yes No

*Temp not accurate due to sun light on the cap

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.)
1355	7.43	2.15	111.1	4.81	37.2	86.4		~1.5L/min	29	
1400	7.38	2.28	102.8	1.89	26.3	40.6		~1.5L/min	35	
1405	7.46	2.31	102.3	4.44	26.78	23.7		"	42	
1425	7.65	2.34	105.5	2.07	25.7	59.8		"	81	
1429	7.55	2.33	102.8	4.95	27.36	40.1		"	84	
1435	7.36	2.42	102.5	2.82	22.39	21.6		"	94	
1442	7.34	2.47	102.5	5.69	22.27	12.7		"	121.05	SURF
1500	7.6	2.37	104.7	3.05	28.30	101.8		"	140	
1515	7.64	2.40	104.0	4.50	23.84	46.6		"	154	
1521	7.64	2.41	105.0	9.48	23.53	16.4		"	168	
1528	7.40	2.44	108.8	1.89	22.39	10.00		"	175	
1531	7.50	2.43	105.0	9.64	22.59	7.37		"	182	
1535	7.58	2.42	104.3	3.33	22.4	5.67		"	188	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

||||| ||||| ||||| ||||| ||||| ||

WELL DEVELOPMENT LOG SHEET

Client: Ga Power
 Site: Plant Humroad
 Well ID: HW-36P
 Total Depth (ft) (after purge): 55'
 Depth to Water (ft): 16.92
 Well Diameter (in): 2"
 Well Volume (gal) = 0.041d²h: _____
 Well Volume (L) = gal * 3.785: _____

Project No: GWGS017
 Location: AD-2
 Pump Type/Model: Monsieur
 Tubing Material: Poly
 Pump Intake Depth (ft): 45-55'
 Start/Stop Purge Time: 1420 -
 Purge Rate (mL/min): _____
 Total Purge Volume (L): _____

Development Date: 5/20/20
 Field Personnel Name: Ben Weismann

d = well diameter (inches); h = length of water column (feet)

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

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.)
1437	7.71	0.36	82.3	4.49	22.04	38	27.35	~ 1L/min	171	Surged
1505	7.76	0.35	82.3	2.57	21.34	42.8	39.8	"	406	
1512	7.73	0.36	78.6	2.22	19.10	20.0	39.8		49	
1518	7.71	0.36	74.8	3.70	19.10	9.85	39.85/44.21		57	
1522	7.69	0.37	73.0	4.26	19.11	7.47	45.9		63	
1528	7.72	0.37	71.8	5.53	19.27	7.98	47.11		70	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

7.6 buckets dumped
 +++++ 1!! = 3/2

1421 = 21.9

10 sec/inch
 6"/min -> 30/hr

WELL DEVELOPMENT LOG SHEET

Client: GA Power Project No.: GW65813 Development Date: 5/20/20 - 5/21/20
 Site: Plant (Humnow) Location: AP-2 Field Personnel Name: Ben Weismann
 Well ID: MW-37D Pump Type/Model: Morseco
 Total Depth (ft) (after purge): 71' Tubing Material: Poly
 Depth to Water (ft): 16.93 Pump Intake Depth (ft): 764-74'
 Well Diameter (in): 2" Start/Stop Purge Time: 1225-1242
 Well Volume (gal) = 0.041d₂h: _____ Purge Rate (mL/min): 1L/min
 Well Volume (L) = gal * 3.785: _____ Total Purge Volume (L): _____

Stopped at 1247 at ~6' - purged dry
 Returned to finish 5/26/20

d = well diameter (inches); h = length of water column (feet)

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

Pumping fairly clear ~30 NTU but running at 8 min. 60L return later (5/26/20) as per Joe's recommendation

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.)
12:05								~1L/min		Surge
12:42	7.51	1.09	114.4	3.04	21.56	77.0		~1L/min	~29L	
12:51	7.56	1.16	110.0	2.51	24.36	50.2			35L	
5/26/20 15:12	6.37	1.24	120.5	1.51	23.42	47.6		~1L/min	7L	
15:17	6.80	1.25	115.8	2.06	21.85	22.8	58.12	"	12L	
15:33	7.46	1.27	102.6	1.91	21.94	33.0			22L	
15:45	7.56	1.27	98.3	2.05	21.4	32.0			46L	
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)		< 5 NTUs				

HHH / 5/26/20

$74 - 16.9 = 57.1 \rightarrow 0.041 \times 2^2 \times 57.1 = 9 \text{ gallons}$

12:23 = 37.6
 12:25 = 37.5
 ~1" / 2 min = ~24" / hour

Joe suggests I surge and pump if dry

APPENDIX D

Certified Well Survey Data

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail on Pad Northing	Nail on Pad Easting	Nail on Pad Elevation
HGWA-4	1549930.4460	1939385.4530	587.60	1549930.1010	1939384.1150	584.94
HGWA-5	1548633.3280	1937184.1740	583.24	1548632.7560	1937183.9790	580.52
HGWA-6	1548636.3450	1937177.7340	583.38	1548635.7150	1937177.4940	580.72
HGWC-14	1547998.9580	1938406.2650	597.25	1548000.4050	1938406.0400	594.67
HGWC-15	1547875.3310	1937854.9180	581.49	1547875.9530	1937855.0570	578.73
HGWC-16	1548209.8320	1937540.3280	580.02	1548209.5630	1937542.0880	577.36
HGWC-17	1548449.7060	1937538.9820	584.30	1548449.7130	1937540.5800	581.51
HGWC-18	1548821.2690	1937558.3190	584.18	1548820.7070	1937559.7460	581.36
MW-8	1548171.8630	1940016.6970	586.93	1548173.5170	1940017.0010	584.25
MW-9	1548131.3770	1938922.1610	590.95	1548132.6520	1938921.3810	588.42
MW-12	1547853.7790	1937525.4620	583.27	1547855.2080	1937525.2430	580.59
MW-16	1549104.1670	1937940.0630	574.22	1549104.2520	1937941.6720	571.70
MW-17	1549163.2760	1938345.8090	586.78	1549162.9630	1938344.3860	583.68
MW-18	1548984.1500	1938712.7270	592.28	1548984.1170	1938714.2680	589.75
MW-21D	1548814.8630	1937555.7770	583.84	1548814.5470	1937556.9520	581.16
MW-22	1547854.6800	1937832.0390	578.51	1547855.5540	1937832.1580	576.05
MW-23D	1547876.5450	1937843.8850	581.30	1547877.3670	1937844.2650	579.06
MW-33	1547973.4950	1938412.1340	593.92	1547975.0370	1938411.7580	591.19
MW-34D	1547996.8180	1938392.1960	596.51	1547998.0080	1938391.8470	593.83
MW-35	1547905.3270	1938417.8160	574.40	1547905.2250	1938418.8100	571.88
MW-36D	1548435.4290	1937538.1940	584.10	1548435.4660	1937539.6020	581.44
MW-37D	1548803.0050	1937551.0460	583.58	1548802.5500	1937552.1600	580.95

Benchmark	Northing	Easting	Elevation
BM H-2	1548149.4490	1938960.2220	590.68

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 05/11/2020-05/14/2020
FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAVD'83, 0.01 VERTICAL-NAVD'88
EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R10 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION.
THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM H-2 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL



[Handwritten signature]

5/19/2020

APPENDIX B

Well Inspection Forms

Groundwater Monitoring Well Integrity Form

Site Name Piant Hammond
 Permit Number _____
 Well ID HGW A-1
 Date, field conditions 3-2-2020 Rain wet conditions

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

N/A

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-1/2
 Permit Number _____
 Well ID 11GWA-2
 Date, field conditions 3/2/2020; 47°F; raining

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-1/2
 Permit Number _____
 Well ID HGWA-3
 Date, field conditions 3/2/2020; 5:40R; raining

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGVA-4
 Date, field conditions 3-2-2020 Wet

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

7 Corrective actions as needed, by date:

Big Ant Pipe next to Pad 3-2-2020

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Heart Home road
 Permit Number _____
 Well ID 462/A-T
 Date, field conditions 7/2/20 rain

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Removal
 Permit Number _____
 Well ID H6204-6
 Date, field conditions 3/2/10 via

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID HGWA-14
 Date, field conditions 03 02 2020 Rainy 15°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID HGWC-15
 Date, field conditions 03.02.2020 RAINY 15°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
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?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	_____	<u>X</u>	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</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?	_____	_____	_____
c Does the well require redevelopment (low flow, turbid)?	_____	_____	_____
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	_____	_____	_____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID HGWC-16
 Date, field conditions 3/3/2020 68°F raining

	yes	no	n/a
1 Location/Identification			
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID HGWC-17
 Date, field conditions 3/3/2020 68-c; cloudy

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID HGWC-18
 Date, field conditions 3.02.2020 Raining 15°C

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<u>X</u>	_____	_____
b	Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c	Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
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?	<u>X</u>	_____	_____
b	Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c	Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e	Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b	Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c	Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e	Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c	Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d	Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e	Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</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?	_____	_____	_____
c	Does the well require redevelopment (low flow, turbid)?	_____	_____	_____
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	_____	_____	_____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-1
 Permit Number _____
 Well ID MW-8
 Date, field conditions 03/02/2020, Rainy 50°F

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-a
 Date, field conditions 03/02/2020, rainy, 50°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>/</u>	_____	_____
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 protection from traffic?	_____	<u>/</u>	_____
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?	<u>/</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>/</u>	_____	_____
c 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?	<u>/</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>/</u>	_____	_____
3 Surface pad			
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?	<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)	<u>/</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>/</u>	_____	_____
4 Internal casing			
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)?	<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 Is the depth of the well consistent with the original well log?	_____	_____	<u>/</u> WL only
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 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?	_____	_____	<u>/</u>
c Does the well require redevelopment (low flow, turbid)?	_____	_____	<u>/</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 requirements?	<u>/</u>	_____	_____
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-12
 Date, field conditions 03/02/2020 rainy 50°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>well only</i>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-16
 Date, field conditions 02/02/2020 rainy 50°F

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

wl only

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-17
 Date, field conditions 03/02/2020 rainy 50°F

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-18
 Date, field conditions 03/02/2020 rainy 50°F

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-21D
 Date, field conditions 03.02.2020 Rainy 15°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
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?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</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?	_____	_____	_____
c Does the well require redevelopment (low flow, turbid)?	_____	_____	_____
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			
	_____	_____	_____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID MW-02
 Date, field conditions 5/2/00 R.Y.

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Harmon
 Permit Number _____
 Well ID W-232
 Date, field conditions 3/2/20

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-2
 Permit Number _____
 Well ID MW-33
 Date, field conditions 03.02.2020 Rainy 15°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	_____	<u>X</u>	_____
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?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</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?	_____	_____	_____
c Does the well require redevelopment (low flow, turbid)?	_____	_____	_____
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	_____	_____	_____
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AP-4, gauged for POT map
 Permit Number _____
 Well ID AGWC-113
 Date, field conditions 03/02/2020, rainy, 50°F

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

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond AR4, gauged for POT map
 Permit Number _____
 Well ID HGWL-118
 Date, field conditions 03/02/2020, rainy 30 F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL only
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGWA-1
 Date, field conditions 3-25-2020 Wet Rain last night

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WL only

7 Corrective actions as needed, by date:
Needs Blue QED Well cap 2-inch

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-1/2
 Permit Number _____
 Well ID HGWA-2
 Date, field conditions 3/25/2016 65°F; partly cloudy

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

wl only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-1/2
 Permit Number
 Well ID HCNA-3
 Date, field conditions 3/25/2020 60-65°F; partly cloudy

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:			

wl only

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-2
 Permit Number _____
 Well ID HGWA-4
 Date, field conditions 3/26/22, Sunny, 57°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
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?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<u>X</u>	_____	_____
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>X</u>	_____	_____
c Does the well require redevelopment (low flow, turbid)?	_____	<u>X</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 requirements?			
	<u>X</u>	_____	_____

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number
 Well ID HGW/A-5
 Date, field conditions Sunny, 46°F

	yes	no	n/a
1 Location/Identification			
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammock A-2
 Permit Number _____
 Well ID HW A-6
 Date, field conditions Sunny 70's 3/25/20

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL only
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> (WF 3/25/20)
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?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGWC-14
 Date, field conditions 2/30/2020, cloudy, 60°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
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?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<u>X</u>	_____	_____
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>X</u>	_____	_____
c Does the well require redevelopment (low flow, turbid)?	_____	<u>X</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 requirements?	<u>X</u>	_____	_____
7 Corrective actions as needed, by date:			

WL only

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond
 Permit Number _____
 Well ID HGWC-15
 Date, field conditions Sunny, 57°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<u>X</u>	_____	_____
b	Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c	Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<u>Y</u>	_____	_____
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<u>X</u>	_____	_____
b	Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c	Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e	Is the well locked and is the lock in good condition?	<u>Y</u>	_____	_____
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b	Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c	Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e	Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c	Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d	Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e	Is the depth of the well consistent with the original well log?	_____	_____	<u>X</u> WL only
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>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<u>X</u>	_____	_____
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>X</u>	_____	_____
c	Does the well require redevelopment (low flow, turbid)?	_____	<u>X</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 requirements?				
		<u>X</u>	_____	_____

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AB-2
 Permit Number
 Well ID HGWC-19
 Date, field conditions 3/30/2020

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Wt only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-2
 Permit Number _____
 Well ID HGWC-17
 Date, field conditions 03/31/2020, Rainy, 54°F

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<u>X</u>	_____	_____
b Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c Is the well in a high traffic area and does the well require protection from traffic?	<u>X</u>	_____	_____
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?	<u>X</u>	_____	_____
b Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<u>X</u>	_____	_____
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>X</u>	_____	_____
c Does the well require redevelopment (low flow, turbid)?	_____	<u>X</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 requirements?	<u>X</u>	_____	_____

X WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond, AP-2
 Permit Number _____
 Well ID HGWC-18
 Date, field conditions 3/31/2020, Cloudy, 50°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<u>X</u>	_____	_____
b	Is the well properly identified with the correct well ID?	<u>X</u>	_____	_____
c	Is the well in a high traffic area and does the well require protection from traffic?	_____	<u>X</u>	_____
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?	<u>X</u>	_____	_____
b	Is the casing free of degradation or deterioration?	<u>X</u>	_____	_____
c	Does the casing have a functioning weep hole?	<u>X</u>	_____	_____
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<u>X</u>	_____	_____
e	Is the well locked and is the lock in good condition?	<u>X</u>	_____	_____
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<u>X</u>	_____	_____
b	Is the well pad sloped away from the protective casing?	<u>X</u>	_____	_____
c	Is the well pad in complete contact with the protective casing?	<u>X</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)	<u>X</u>	_____	_____
e	Is the pad surface clean (not covered with sediment or debris)?	<u>X</u>	_____	_____
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<u>X</u>	_____	_____
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<u>X</u>	_____	_____
c	Is the well properly vented for equilibration of air pressure?	<u>X</u>	_____	_____
d	Is the survey point clearly marked on the inner casing?	<u>X</u>	_____	_____
e	Is the depth of the well consistent with the original well log?	_____	_____	<u>X</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)	<u>X</u>	_____	_____
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<u>X</u>	_____	_____
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<u>X</u>	_____	_____
c	Does the well require redevelopment (low flow, turbid)?	_____	<u>X</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 requirements?	<u>X</u>	_____	_____

WL only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-2
 Permit Number
 Well ID MW-9
 Date, field conditions 3/23/20 - Rain, 53°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>WL only</i>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AP-2
 Permit Number _____
 Well ID MW-12
 Date, field conditions 3 23 20 - Rain, 53°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>WL only</i>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

Hammond/AP-2

Permit Number

Well ID

MW-16

Date, field conditions

3/23/20 - Rain, SS^o

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>Wt only</i>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name

AP-2

Permit Number

—

Well ID

MW-17

Date, field conditions

3/23/20 - Rain, 53°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>WL only</i>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name AD-2
 Permit Number _____
 Well ID MW-18
 Date, field conditions 3/23/20 - Rain, 55°

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>wt only</i>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-2
 Permit Number _____
 Well ID MW-210
 Date, field conditions 4-1-2020 Damp

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

7 Corrective actions as needed, by date:

None

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-2
 Permit Number 60
 Well ID MW-22
 Date, field conditions 03/27/2020, Sunny, 60°F

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL only
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond AP-2
 Permit Number
 Well ID MW-23D
 Date, field conditions 4/11/2020 Sunny

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> WL only
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Plant Hammond ~~HudRaker~~ A0-2
 Permit Number _____
 Well ID MW-33
 Date, field conditions 4/1/2020 sunny

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

wt only

7 Corrective actions as needed, by date:

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID MW-34D
 Date, field conditions 6/18/2020; sunny

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c	Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?				
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:				

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID MW-35
 Date, field conditions 6/18/2020 sunny

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the well locked and is the lock in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Surface pad			
a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well pad sloped away from the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the survey point clearly marked on the inner casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:	_____		

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID MW-360
 Date, field conditions 6/8/2020 sunny

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

Signature and Seal of PE/PG responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name Hammond
 Permit Number _____
 Well ID MW-37D
 Date, field conditions 6/18/2020 SUNNY

	yes	no	n/a
1 Location/Identification			
a Is the well visible and accessible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the well properly identified with the correct well ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well in a high traffic area and does the well require protection from traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Protective Casing			
a Is the protective casing free from apparent damage and able to be secured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of degradation or deterioration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Does the casing have a functioning weep hole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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a Is the well pad in good condition (not cracked or broken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c Is the well pad in complete contact with the protective casing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e Is the pad surface clean (not covered with sediment or debris)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Internal casing			
a Does the cap prevent entry of foreign material into the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Is the well properly vented for equilibration of air pressure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e Is the depth of the well consistent with the original well log?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Sampling: Groundwater Wells Only:			
a Does well recharge adequately when purged?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
c Does the well require redevelopment (low flow, turbid)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Corrective actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

APPENDIX C

Semiannual Remedy Selection and Design Progress Report



Prepared for

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

SEMIANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT PLANT HAMMOND ASH POND 2 (AP-2)

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GW6581B

August 2020

SEMIANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

GEORGIA POWER COMPANY - PLANT HAMMOND

ASH POND 2 (AP-2)

This Semiannual Remedy Selection and Design Progress Report, Georgia Power Company - Plant Hammond, Ash Pond 2 (AP-2), has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule, specifically 40 Code of Federal (CFR) § 257.97(a) and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a).

Report Prepared by:



Whitney B. Law, P.E.

Georgia Professional Engineer No. 036641

August 31, 2020

Date

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LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
As	arsenic
CCR	coal combustion residuals
CFR	Code of Federal Regulations
Co	cobalt
CSM	conceptual site model
EPD	Georgia Environmental Protection Division
Geosyntec	Geosyntec Consultants, Inc.
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
K_h	horizontal hydraulic conductivity
meq/L	milliequivalents per liter
mg/L	milligrams per liter
MNA	monitored natural attenuation
Mo	molybdenum
PRB	permeable reactive barriers
SSI	statistically significant increase
SSL	statistically significant level
US EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

1.1 Purpose

This *Semiannual Remedy Selection and Design Progress Report* (the semiannual progress report) was prepared for Georgia Power Company (Georgia Power) Plant Hammond Ash Pond 2 (AP-2 or Site) in accordance with the United States Environmental Protection Agency (US EPA) coal combustion residual rule (CCR Rule) (40 Code of Federal Regulations [CFR] 257 Subpart D), specifically 40 CFR 257.97(a), and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). This progress report describes the progress made during the first semi-annual period of 2020 in selecting and designing a remedy previously documented in the *Assessment of Corrective Measures Report – Plant Hammond Ash Pond 2 (AP-2)* (Geosyntec, 2019b) (ACM Report).

The purpose of the ACM Report (and subsequent semiannual progress reports) is to document the process of selecting corrective measure(s) for groundwater. This process is typically iterative and may be composed of multiple steps to analyze the effectiveness of corrective measures to improve groundwater quality. Once potential corrective measures are identified, they are further evaluated using the criteria outlined in § 257.96(c) and Rule 391-3-4-.10(6)(a). Once selected based on these criteria, the corrective measure must meet the additional protection criteria outlined in § 257.97(b) and corresponding Rule 391-3-4-.10(6)(a). Additional details are provided within the ACM Report and the cited federal and state regulations. Pursuant to § 257.97(a) and Rule 391-3-4-.10(6)(a), semiannual progress reports have been regularly submitted to document the efforts of evaluating and progressing towards selecting a groundwater corrective measure (Geosyntec, 2019c, 2020b).

As discussed in the ACM Report, the following corrective measures are potentially feasible for use at AP-2. A comparative screening of the corrective measures is provided in **Table 1**.

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

1.2 Site Background and Overview of AP-2 Pond Closure

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 four coal-fired electric generating units at Plant Hammond were retired in 2019 and electricity is no longer produced at the Site.

AP-2 is a 21-acre surface impoundment. Dewatered ash from AP-2 is excavated and transported to the nearby Huffaker Road facility, a permitted solid waste disposal location owned and operated by Georgia Power. Georgia Power will close AP-2 through removal of the CCR material from the CCR unit. The Closure Plan submitted to EPD as part of the closure permit application package describes the closure activities and requirements in accordance with § 257.102 and corresponding Rule 391-3-4-.10(7)(b). The proposed closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Details of the closure approach are provided in the Initial Written Closure Plan and published in 2016 to Georgia Power's website.

1.3 Regulatory Program Status and Nature and Extent

CCR compliance groundwater monitoring-related activities have been performed for AP-2 since May 2016 pursuant to the CCR rule. Georgia Power initiated the assessment monitoring program in January 2018 after identifying statistically significant increases (SSIs) of Appendix III parameters in groundwater. Pursuant to § 257.95, samples were collected from the compliance monitoring well network, shown on **Figure 2**, and analyzed for Appendix IV parameters. Statistical analyses of the 2018 assessment monitoring groundwater data identified statistically significant levels (SSLs) of cobalt (Co) in compliance monitoring wells HGWC-15 and HGWC-18 (Geosyntec, 2019a). Co in HGWC-15 is no longer an SSL based on data from subsequent semiannual monitoring events; however, statistical analysis of the March/April 2020 assessment monitoring data for AP-2 confirmed the continued presence of an SSL of Co in AP-2 compliance monitoring well HGWC-18.

Pursuant to § 257.96, Georgia Power initiated an assessment of corrective measures (ACM) for AP-2 in January 2019. The ACM Report was subsequently prepared for AP-2 (Geosyntec, 2019b) and submitted to EPD in June 2019 and posted to the CCR compliance website in July 2019.

As part of the assessment monitoring program, eight additional groundwater monitoring wells have been installed to provide additional data to characterize flow conditions downgradient of AP-2 (**Figure 2**; well construction details are provided in **Table 2**). Based upon additional data collected since the ACM was initiated in 2019, Co that was originally detected at HGWC-18 is vertically delineated to below the state and federal GWPS by delineation well MW-21D. Due to the presence of a surface water feature in the downgradient direction of HGWC-18 (refer to **Figure 3**), installation of a well to horizontally delineate HGWC-18 is infeasible. As a result, Georgia Power sampled the surface water from the unnamed creek west of AP-2. The surface water samples were collected in July 2020 and the data indicate Co is not detected above the reporting limit of 0.005 mg/L [the analytical laboratory report associated with this sampling event is provided in the *2020 Semiannual Groundwater Monitoring & Corrective Action Report* (Geosyntec, 2020d)].

An alternate source demonstration (ASD) was submitted for Co at well HGWC-18 in January 2020 (Geosyntec, 2020c); however, EPD was not able to approve the ASD when their letter was generated on June 26, 2020. Data collection at the Site is ongoing to support the ACM and to enhance the current ASD to show that groundwater concentrations of Co detected at this well likely originate from an alternate source.

In addition to statistical analysis of the 2020 compliance monitoring well data previously discussed, statistical analyses were conducted on delineation wells with four or more independent data (i.e., MW-21D, MW-22, and MW-23D). Until recently, constructing confidence intervals required for the statistical analysis could not be accomplished due to a limited data set. The analysis identified an SSL of molybdenum (Mo) in MW-21D in excess of the state GWPS (0.010 mg/L), but not the federal GWPS (0.10 mg/L). However, the Mo concentrations in well MW-21D have steadily decreased from 0.045 mg/L, reported for the initial sampling of this well in March 2019, to its current lowest detection of 0.019 mg/L for the June 2020 supplemental sampling event.

Time series plots for the Appendix III and IV constituents are included with the statistical analysis report presented in the *2020 Semiannual Groundwater Monitoring & Corrective Action Report*. Georgia Power recommends further monitoring of the conditions in MW-21D before additional action is taken considering the 58 percent reduction in Mo concentration in groundwater over a 15 month period (0.045 to 0.019 mg/L). Georgia Power proactively installed delineation well MW-37D in May 2020 while waiting to complete the four sampling events required to construct the confidence interval for MW-21D (Geosyntec, 2020d). The Mo concentration from the initial sampling for MW-37D

was elevated relative to site background Mo concentrations; however, three additional sampling events are required before Georgia Power can statistically analyze the data.

During characterization of groundwater at the Site, additional detections of Co at MW-33 and MW-35 downgradient of HGWC-14 were reported above background Co concentrations during this reporting period. Further evaluations of Co are ongoing as not enough data points are currently available for statistical analyses at these wells. However, as a proactive measure and due to further horizontal delineation being infeasible at MW-35, Georgia Power sampled surface water in the Coosa River. The surface water samples were collected in July 2020 and the data indicate Co is not detected above the reporting limit of 0.005 mg/L (Co) (the analytical laboratory report associated with this sampling event is provided in the *2020 Semiannual Groundwater Monitoring & Corrective Action Report*).

Based on Co results for data collected to date, no Co impacts to surface water have been detected and horizontal characterization is complete. Further vertical delineation of Co in vicinity of MW-33 and MW-35 is being evaluated and will be addressed as appropriate upon completing statistical analysis of the data at these locations. .

Pursuant to § 257.96, groundwater in the vicinity of AP-2 continues to be monitored during the ACM phase in accordance with the established assessment monitoring program.

2.0 SUMMARY OF WORK COMPLETED

2.1 Field Activities

The following summarizes the field investigations and data evaluations completed since the issuance of the *Supplemental Semi-Annual Remedy Selection and Design Progress Report* in January 2020 (Geosyntec, 2020b) in support of delineating Appendix IV SSLs and evaluations of the corrective measures presented in the ACM Report. The two routine assessment monitoring events conducted in early March and late March/early April 2020 are discussed in the *2020 Semiannual Groundwater Monitoring and Corrective Action Report*.

- *April 8 - 10, 2020*: A supplementary sampling event was conducted to analyze pore water samples from the two AP-2 pore water piezometers (PMW-03 and PMW-04) for major cations and anions in support of evaluating the geochemical composition of the groundwater. The pore water samples were also analyzed for Appendix III and IV constituents.
- *May 6 - 13, 2020*: Piezometers MW-34D, MW-35, MW-36D, and delineation well MW-37D were installed to horizontally and vertically characterize the groundwater flow and quality conditions downgradient of AP-2.
- *June 17 - 18, 2020*: The newly installed piezometers and well were sampled for Appendix III and Appendix IV constituents as well as for major cations and anions in support of evaluating the geochemical composition of the groundwater.
- *July 27 - 29, 2020*: A series of pneumatic slug and short-duration pumping tests were conducted in select wells downgradient of AP-2 to refine the understanding of localized hydrogeologic conditions within the potential groundwater treatment area.

2.2 Aquifer Testing

Aquifer testing was performed using a pneumatic slug testing method at eight monitoring wells and piezometers to estimate the horizontal hydraulic conductivity (K_h) of the aquifer within the screen interval. The eight wells tested included HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18, MW-21D, MW-23D, and MW-34D. For each test, an In-Situ Level Troll® pressure transducer was lowered into the well screen and then connected to a computer to measure water level changes during the testing. A pressure-tight PVC and brass “tree” assembly connected to a compressed nitrogen gas

tank was used to conduct the test by injecting compressed gas and measuring water level drawdown and recovery. The water level change was recorded at one second intervals until approximately 90 percent recovery had been attained.

In wells where the applied pressure was not sufficient to lower the groundwater level (HGWC-15, HGWC-16, HGWC-17, and HGWC-18), an aquifer recovery test was performed by pumping from these wells and monitoring recovery data.

Drawdown time graphs were generated by AQTESOLV for curve matching to applicable analytical solutions to generate an estimate of K_h . Two analytical models were used for curve matching: (i) the Bouwer-Rice (1976) model, which is used for an unconfined aquifer that exhibits a smooth exponential recovery to static water levels during the test, and assumes quasi steady-state conditions and ignores elastic storage in the aquifer; (ii) the Kansas Geological Survey (KGS) model (Hyder et al., 1994), which accounts for elastic storage in the aquifer in unconfined aquifers.

3.0 SUMMARY OF RESULTS

The following presents the results of the work outlined in Section 2.

3.1 Groundwater and Pore Water Analysis

Results from groundwater samples collected in September 2019, April 2020, and June 2020 from wells located upgradient of AP-1 (i.e., HGWA-1 through HGWA-6) and downgradient of the unit (i.e., HGWC-14 through HGWC-18, MW-21D, MW-22, MW-23D, MW-33, MW-35, MW-34D, MW-36D, and MW-37D), as well as sampling locations within the unit (i.e., PMW-03 and PMW-04) were used to conduct a geochemical analysis of groundwater and pore water. **Table 3** summarizes analytical data from a number of groundwater wells as well as pore water samples collected from within the AP-2 boundary. The analytical data include Appendix III and IV constituents and select major cations and anions, and laboratory analytical reports for data collected in 2020 that have not been presented under different covers are provided in **Appendix A**. **Figure 2** depicts the locations of the monitoring well network and the pore water piezometers PMW-03 and PMW-04.

To conduct a geochemical analysis, collected samples were analyzed for the major cations (i.e., calcium, magnesium, sodium, and potassium) and anions (i.e., chloride, sulfate, and bicarbonate). Prior to proceeding with this geochemical evaluation, a charge balance of the major ions was conducted for each sample. A charge balance is mathematically expressed as the percent difference between cation and anion concentrations. The charge balance, which gives an indication of the analytical data quality, should generally be within ± 10 percent, and all samples used in this analysis were within this criterion.

The major ions were used to construct Piper and Stiff diagrams, which are among the most common tools for assessing geochemical similarities and differences between aqueous samples. Laboratory data, which are normally reported in mg/L, are converted to milliequivalents per liter (meq/L) when plotted on a Piper or Stiff diagram.

Piper diagrams are trilinear diagrams that plot the relative contributions of major ions to the overall geochemical makeup of a liquid sample. The diagram has three components. The large diamond-shaped component displays the combined cation and anion composition of major solutes. The two smaller triangular components display the cation components and the anion components, separately and in greater detail. The sample data are plotted as a percentage of the total milliequivalents on the diagram with each component reaching 100 percent at its respective corner of the diagram. If the results

from discrete samples plot relatively close to each other, their respective chemical compositions are similar, and they might have a similar (or the same) source of solutes. One can also see mixing of different waters if the samples fall along straight lines between various water types (e.g., mixing of calcium/magnesium carbonate water, such as limestone or dolomite with calcium sulfate water, such as gypsum).

Stiff diagrams plot the chemical compositions of each sample as polygons. Similar-shaped polygons for different samples indicate similar geochemical compositions, and they might have a similar (or the same) source of solutes. The relative size of each polygon is an indication of the ionic strength (or “concentration”) of the respective sample.

The resulting Piper diagram is presented as **Figure 4**, and the Stiff diagrams are presented as **Figure 5A** through **Figure 5C**.

As can be seen on **Figure 4**, the groundwater samples from the background monitoring wells as well as the deep piezometer MW-36D plot close to each other within the Ca-HCO₃ portion of the diamond-shape Piper diagram, as would be expected from wells screened within limestone and unimpacted by the unit. Note that background wells HGWA-2, and to a lesser degree, HGWA-4 are plotting in slightly different areas compared to the other background wells. HGWA-2 is screened in residuum and partially weathered rock, while the other wells are screened deeper into bedrock. This variation observed among background wells demonstrates the necessity of using multiple background wells to capture the natural variability in groundwater conditions. The samples collected from pore water piezometers PMW-03 and PMW-04 plot towards the Ca-SO₄ corner of the diagram. Most downgradient wells plot close to the pore water locations or along the mixing line between background wells and pore water samples, which suggests a similar geochemical signature.

Figures 5A through **5C** depict the Stiff diagrams, organized by ionic strength as noted by the scale of each figure. Background wells and/or background-like wells have an ionic strength about four times smaller compared to pore water piezometers and most downgradient wells.

3.2 Aquifer Testing

The AQTESOLV data plots are provided in **Appendix B. Table 4** provides a summary of the well construction data, AQTESOLV input parameters, and estimated horizontal

hydraulic conductivity values. The two methods yielded similar estimates of K_h values (Table 4).

The K_h values (using the mean of the two methods) for the alluvium/colluvium was estimated as 2.3×10^{-4} centimeters per second (cm/sec) (HGWC-16). K_h of the wells screened in residuum ranged between 2.4×10^{-4} cm/sec (HGWC-17) and 2.3×10^{-3} cm/sec (HGWC-5). K_h of the residuum and partially weathered shale was estimated as 1.5×10^{-4} cm/sec (HGWC-18). Overall, the K_h values estimated for these lithologic units are consistent with historical K_h values presented in the *Hydrogeologic Assessment Report (Revision 1)* (Geosyntec, 2019d). The aquifer tests completed in July 2020 were the first ones to be done in AP-2 wells screened within the shale bedrock. The K_h of the shale bedrock ranged between 5.4×10^{-4} cm/sec (MW-21D) and 9.7×10^{-4} cm/sec (MW-23D).

These new data will be used to supplement existing hydraulic conductivity data. An updated understanding of aquifer properties, including conductivity, will help refine elements of the conceptual site model (CSM), and support assessment of certain groundwater corrective measures, such as hydraulic containment or monitored natural attenuation (MNA).

4.0 UPDATED CONCEPTUAL SITE MODEL

The additional data collected since the issuance of the *Supplemental Semi-Annual Remedy Selection and Design Progress Report* in January 2020 (Geosyntec, 2020b), and presented herein together with new data evaluation tools and interpretations, allow the development of a more refined CSM, which helps with the selection of an appropriate groundwater corrective measure and/or the elimination of other potential corrective measures that may be less applicable to current site conditions.

The bullets below summarize the current understanding of the CSM within the context of selecting an appropriate groundwater remedy for AP-2 at Hammond:

- Groundwater conditions continue to change, leading to the reduction of groundwater concentrations to below applicable GWPS in select areas (e.g., Co in HGWC-15). Co concentrations in well HGWC-18 and Mo in well MW-21D constitute the only SSLs at AP-2. Co is vertically delineated to below the state and federal GWPS by MW-21D. Vertical delineation of Mo in MW-21D is pending; additional groundwater monitoring of the well will determine whether the observed decreasing concentrations will continue to be below the GWPS, as is expected. Three additional groundwater sampling events are required before statistical analyses can be performed on the delineation well (MW-37D) installed to delineated MW-21D. Based on Co results for data collected to date, no Co impacts to surface water have been detected and horizontal characterization is complete.
- Co appears to be mostly mobilized through low pH conditions. There are similar relationships between pH and Co concentration observed in upgradient well HGWA-2 and downgradient well HGWC-18. There is also naturally elevated Co present within the aquifer matrix (up to 86 mg/kg) documented at the Site. Additional data collection at the Site is ongoing to support the ACM and to enhance the CSM with regard to elevated Co concentrations in groundwater.
- Pore water within the southern portion of AP-2, represented by pore water piezometer PMW-03, has higher concentrations of Co compared to piezometer PMW-04 in the northern part of AP-2. The Co concentration is likely higher in PMW-03 compared to PMW-04 due to construction activities at AP-2 and disturbance of the CCR materials within the vicinity of PMW-03.

5.0 UPDATED EVALUATION OF CORRECTIVE MEASURES

Based on the data collected to date, two of the five potential groundwater corrective measures are less applicable to treat Co and Mo in groundwater under site-specific conditions and are therefore not retained for further evaluation. Note that the Mo SSL in MW-21D was determined during the most recent statistical analysis for data at AP-2. However, the elimination of the two potential corrective measures is not contingent on further evaluations of Mo (or Co) results at the Site. These include:

Permeable Reactive Barrier (PRB) (Corrective Measure Not Retained)

PRB technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. PRBs are oriented perpendicular to groundwater flow direction so that the PRB will intercept groundwater targeted for treatment either immediately downgradient of a source area or upgradient of a receptor. Either ZVI-Carbon matrix or solid carbon (bio-barrier) may work for the concurrent removal of Co and Mo. The carbon could be composed of peat moss, mulch or another carbon source.

PRB walls are typically keyed into the bedrock. While the shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the PRB media are designed to be more hydraulically conductive than the saturated media surrounding the PRB so that groundwater will flow through the PRB and will not impede groundwater flow. PRBs can also be constructed as “funnel and gate” systems, where a barrier wall directs groundwater to a smaller “treatment gate” filled with reactive media.

While PRB media are potentially applicable to treat Co (and to a lesser degree, Mo) in groundwater, it is impractical to construct a PRB at the required depths to treat the aquifer zone in bedrock in the vicinity of HGWC-21D (>30 ft into bedrock). Furthermore, a PRB cannot treat groundwater downgradient of its likely alignment along the compliance boundary and would rely on some other measure to address these impacts. The implementation of PRBs can also be challenging due to biofouling and mineral precipitation, which reduce the effectiveness of media over time and can increase the amount of maintenance needed for media changeouts. For these reasons, a PRB is likely not implementable, effective, or reliable and this corrective measure was not retained for further evaluation.

Vertical Barrier Wall (*Corrective Measure Not Retained*)

This approach involves placing a barrier to groundwater flow, frequently around or upgradient of a source area, to physically control groundwater flow through isolation or redirection. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. A variety of barrier materials can be used, including cement and/or bentonite slurries, geomembrane composite materials, or driven materials such as steel or vinyl sheet pile. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.

Like PRBs, the design and technique used to construct a barrier wall typically depend on the length of the barrier and the depth to a competent bedrock. Sheet piling, trenching, and vertical drilling are the most common methods for barrier construction. Sheet piling and trenching are typically limited to depths of approximately 50 feet below ground surface (ft bgs), even though specialty drilling/installation techniques can achieve depths up to 90 ft bgs. Construction of a vertical barrier would involve drilling to competent bedrock and injecting bentonite or grout into terrace alluvium, residuum, and highly weathered/fractured limestone bedrock. Keying the vertical barrier into bedrock may be difficult to achieve consistently due to the complex site geology. Depth to competent bedrock significantly varies on a small-scale (feet to tens of feet) spatially depending on the weathering characteristics of the fractured bedrock. Also, it is impractical to construct a vertical barrier wall at the required depths to address the aquifer zone in bedrock in the vicinity of HGWC-21D (>30 ft into bedrock).

Further, since a vertical barrier wall would be installed along the compliance boundary, it does not address downgradient groundwater impacts and would rely on some other measure to address these impacts, if required. For these reasons, the barrier may not be implementable, effective, or reliable. Accordingly, the vertical barrier technology was not retained for further evaluation.

Based on this analysis, future data collections and analysis efforts should focus on further evaluating the following three potential groundwater corrective measures:

Geochemical Injections (*Corrective Measure Retained*)

Geochemical injections involve the use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of Co (and to a lesser degree, Mo). Under anaerobic conditions, Co would be attenuated within sparingly soluble sulfide minerals. Under aerobic conditions, soluble iron or manganese and oxygen (either via air sparging or through a chemical oxidant) would be injected to promote the formation of iron or manganese (oxy-) hydroxides for subsequent sorption of Co (and potentially, Mo) onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including Co. However, the main attenuation mechanism for Co and Mo is sorption, which is more dependent on pH than redox conditions. Also, while both constituents can be remediated with geochemical injections, the immobilization of Mo using this approach is not well established and is still considered experimental at this time.

This potential corrective measure may still be feasible around well HGWC-18 and potentially south of AP-2 either as a direct measure to attenuate elevated Co concentrations in a localized area through the formation of sparingly soluble minerals, or as an indirect measure by locally adjusting the groundwater pH to immobilize Co via adsorption under higher pH conditions.

Hydraulic Containment (*Corrective Measure Retained*)

Hydraulic containment refers to the use of groundwater extraction to induce a hydraulic gradient for hydraulic capture or control of impacted groundwater. This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature, reinjection into the groundwater, or reuse. It is applicable to a variable mix of inorganic constituents, including dissolved Co and Mo.

This potential corrective measure may still be feasible through targeted extraction of impacted groundwater.

Monitored Natural Attenuation (*Corrective Measure Retained*)

MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods. Under certain conditions (e.g., through sorption, mineral precipitation or oxidation-reduction reactions), MNA effectively reduces the dissolved concentrations of inorganic constituents in groundwater. Attenuation mechanisms for inorganic constituents at CCR sites, including Co and Mo, are either physical (e.g. dilution, dispersion, flushing, and related processes) or chemical (sorption or oxidation reduction reactions). Chemical attenuation processes include precipitation and sorption reactions such as adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Further, oxidation-reduction (redox) reactions, via abiotic or biotic processes, can transform the valence states of some inorganic constituents to less soluble and thus less mobile forms. For Co and Mo, the main attenuation processes include sorption to iron and manganese oxides (Co and Mo), aluminum oxides (Mo), and formation of sparingly soluble sulfide minerals (Co).

This potential corrective measure may either be a stand-alone corrective measure or be part of a combination of corrective measures to address groundwater impacts, depending on the outcome of upcoming data collections and statistical analyses.

Given that groundwater conditions continue to change and are likely to also be affected by closure and construction activities at AP-2, an adaptive site management approach will be used to address groundwater impacts that may arise during closure activities. The data collection efforts outlined in this semiannual progress report will further refine the CSM and allow a more detailed evaluation of the three potential groundwater corrective measures retained for further consideration.

In addition to the three potential groundwater corrective measures, closure by removal activities presented in Section 1.2 will provide source control to the maximum extent possible, which is expected to also result in pronounced improvements of groundwater quality.

6.0 PLANNED ACTIVITIES & ANTICIPATED SCHEDULE

During the pond closure by removal of CCR, temporary changes in site conditions may occur that must be considered as part of remedy selection. Georgia Power proactively initiated adaptive site management as outlined in the ACM Report (Geosyntec, 2019b) to support the remedial strategy and address potential changes in site conditions as appropriate. The adaptive site management approach may be adjusted over the site's life cycle as new site information and technologies become available. To this end, Georgia Power will continue its data collection efforts as necessary in support of efforts to refine the CSM and to further evaluate the feasibility of each corrective measure proposed in the ACM Report. At this time, and as discussed in Section 5, three of the corrective measures outlined in the ACM Report are being retained for further evaluation (i.e., geochemical injections, hydraulic containment, and MNA). Once sufficient data are available to make technically sound decisions regarding the ability to implement one or more specific corrective measures, necessary steps will be taken to design and implement a remedy for AP-2 in accordance with § 257.98.

Supplementary data collection and evaluation activities proposed to be completed during the next semiannual reporting period are presented in **Table 5**.

- *Installation of additional deep-screened background monitoring wells to establish background conditions in the deeper zone.*
- *Continue to evaluate the groundwater geochemistry in wells outside of AP-2 to evaluate whether potential groundwater corrective measures could be successful given the natural environment.*
- *Perform a conceptual-level feasibility study of a hydraulic containment remedial strategy to determine conceptual layouts for a hydraulic containment approach.*
- *Evaluate a conceptual schedule for implementation and constructability of the three retained groundwater corrective measures at a feasibility level to support the selection of an appropriate groundwater corrective measure.*

Georgia Power will continue to prepare semiannual progress reports to document AP-2 groundwater conditions, results associated with additional data collection, and the progress in selecting and designing a groundwater remedy in accordance with § 257.97(a). Georgia Power will include future semiannual progress reports in routine groundwater monitoring and corrective action reports. Record keeping, notifications, and

publicly accessible internet site requirements for the semiannual progress reports will be provided in accordance with § 257.105(h)(12), § 257.106(h)(9), and § 257.107(h)(9), respectively.

7.0 REFERENCES

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TABLES

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure	Regulatory Citation for Criteria:		40 CFR 257.96(C)(1)	
	Description	Performance	Reliability	Ease of Implementation
Geochemical Approaches (In-Situ Injection)	Use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of cobalt (Co). Under anaerobic conditions, Co would be attenuated within sparingly soluble sulfide minerals. Under aerobic conditions, soluble iron or manganese and oxygen (either via air sparging or through a chemical oxidant) would be injected to promote the formation of iron or manganese (oxy-) hydroxides for subsequent sorption of Co (and potentially molybdenum (Mo)) onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including Co. However, the main attenuation mechanism for Co and Mo is sorption, which is more dependent on pH than redox.	The effective immobilization of Co has been shown under aerobic and anaerobic conditions; however, the anaerobic approach (involving the injection of an electron donor together with iron or manganese and sulfur) requires careful study and testing. While aerobic approaches are somewhat less complex, additional aquifer characterization is needed to further evaluate these options. While both constituents can be remediated with geochemical injections, the immobilization of Mo using this approach is not well established and is still considered experimental at this time.	Reliability dependent on permeability of the subsurface and the amount and distribution of secondary iron or manganese (oxy-) hydroxides (for aerobic approach), or electron donors and soluble iron or manganese and sulfur that can be consistently distributed (for anaerobic approach). Reliable technology if injected materials can be distributed throughout the impacted aquifer. Bench- and/or pilot-scale treatability testing programs are needed to understand the biogeochemical processes that would effectively reduce migration of Co and Mo in groundwater.	Moderate. Installation of injection well network or other injection infrastructure would be required. Alternative installation approaches may be considered, such as along the downgradient edge of impacted groundwater, which would function similar to a PRB application. Potential for clogging of aquifer matrix and/or injection well infrastructure. Chemical distribution during injections (i.e., radius of influence) needs to be evaluated.
Hydraulic Containment	Hydraulic containment refers to the use of groundwater extraction to induce a hydraulic gradient for hydraulic capture or control the migration of impacted groundwater. This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature, reinjection into the groundwater, or reuse (e.g., land application, CCR conditioning, etc.). It is applicable to a variable mix of inorganic constituents, including dissolved Co.	Hydraulic containment is effective, but it is unclear whether full groundwater remediation can be achieved without further understanding attenuation mechanisms at the Site. At AP-2, implementation of the corrective measure is contingent on completing additional assessment activities (i.e. high-resolution site characterization, additional pump tests, flow modeling, and capture zone analysis). This is needed to refine the constituent distribution in the subsurface to target specific zones for pumping for improved mass recovery efficiency/ effectiveness and to further evaluate the potential remedy performance.	Generally reliable for hydraulic containment, but uncertainty exists whether groundwater remediation goals can be achieved within a reasonable time frame without further understanding attenuation mechanisms.	Moderate. Proven approach, and supplemental installation of extraction wells/trenches is fairly straightforward. The extracted groundwater may potentially require an above-ground treatment system. A variety of sorption and precipitation approaches exist for ex-situ treatment of Co. Operation and maintenance (O&M) requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.
Monitored Natural Attenuation (MNA)	MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods. Under certain conditions (e.g., through sorption, mineral precipitation or oxidation-reduction reactions), MNA effectively reduces the dissolved concentrations of inorganic constituents in groundwater. Attenuation mechanisms for inorganic constituents at CCR sites, including Co and Mo at AP-2, are either physical (e.g. dilution, dispersion, flushing, and related processes) or chemical (sorption or oxidation reduction reactions. Chemical attenuation processes include precipitation and sorption reactions such as adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Further, oxidation-reduction (redox) reactions, via abiotic or biotic processes, can transform the valence states of some inorganic constituents to less soluble and thus less mobile forms. For Co and Mo, main attenuation processes include sorption to iron and manganese oxides (Co and Mo), aluminum oxides (Mo), and formation of sparingly soluble sulfide minerals (Co).	Physical and chemical MNA mechanisms for Co, including dilution, dispersion, sorption, and oxidation reduction reactions, can be effective at achieving groundwater protection standards (GWPS) within a reasonable time frame. Source control will improve the mass balance such that the buffer capacity of the aquifer is unlikely to be exhausted, and the attenuation processes already at work for Co and Mo at AP-2 will further enhance ongoing MNA.	Reliable as long as the aquifer conditions that result in Co attenuation remain favorable and/or are being enhanced and sufficient attenuation capacity is present. MNA is reliable and can either be used as a stand-alone corrective measure for groundwater impacted by dissolved Co or Mo, or in combination with a second technology.	Reasonably implementable with respect to infrastructure, but moderate to complex with respect to documentation. Proven approach, but additional data are needed to show that the existing attenuation capacity is sufficient to meet site objectives within a reasonable timeframe. A monitoring well network already exists to implement future groundwater monitoring efforts.
Permeable Reactive Barrier	Permeable reactive barrier (PRB) technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. Either ZVI-Carbon matrix or solid carbon (bio-barrier) are currently proposed for the concurrent removal of Co and Mo. The carbon could be composed of peat moss, mulch or another carbon source. Exact placement of the PRB is contingent on finalization of the nature and extent characterization. PRB walls are typically keyed into the bedrock. While the shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the higher permeability/conductivity of the PRB is not expected to impede groundwater flow. PRBs can also be constructed as "funnel and gate" systems, where a barrier wall directs groundwater to a smaller "treatment gate" filled with reactive media.	PRBs have been shown to effectively address Co (and to a lesser degree Mo) in groundwater if the right mix of reactive materials (e.g., ZVI and carbon) is selected for removal/immobilization of the constituent. The approach is expected to achieve GWPS for Co and possibly Mo as impacted groundwater passes through the reactive barrier. Additional testing is required to select the appropriate sorptive media mix.	Reliable groundwater corrective measure, but loss of reactivity over time may require re-installation depending on the duration of the remedy. Additional data collection, including conducting a bench and/or pilot study, is needed to better characterize current attenuation mechanisms and/or select the appropriate reactive media mix for a PRB wall.	Moderate to difficult. Trenching would be required to install a mix of reactive materials in the subsurface. Continuous trenching may be the most feasible construction method. Installation methods and materials are readily available. Once installed, treatment will be passive and O&M requirements are minimal if replacement of the PRB is not necessary. Technically infeasible to construct a PRB at the required depths to address the aquifer zone in the vicinity of MW-21D (>30 ft into bedrock).
Subsurface Vertical Barrier Walls	This approach involves placing a barrier to groundwater flow in the subsurface, frequently around a source area, to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. Barrier walls can also be used in downgradient applications; to limit discharge to a surface water feature or to reduce aquifer recharge from an adjacent surface water feature when groundwater extraction wells are placed near one. A variety of barrier materials can be used, including cement and/or bentonite slurries, geomembrane composite materials, or driven materials such as steel or vinyl sheet pile. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.	Barrier walls are a proven technology for seepage control and/or groundwater cutoff at impoundments. Slurry walls are limited by the depth of installation; sheet piling and trenching are typically limited to depths of approximately 50 feet below ground surface (ft bgs); specialty drilling/installation techniques can achieve depths greater up to approximately 90 ft bgs. However, site-specific geologic and technology-specific considerations may limit this depth to shallower installations. Within the context of AP-2, a barrier wall might be used in conjunction with a "funnel and gate" system for a PRB rather than a stand-alone technology. As such, groundwater with Co and Mo above GWPS could either be directed to "treatment gates" for passive treatment (in a PRB) or migration of impacted groundwater could be minimized via barrier wall installation. Additional subsurface investigations, aquifer testing, and compatibility testing with site-specific groundwater will be needed.	Generally reliable as a barrier to groundwater flow; however, treatment of downgradient groundwater is incidental and not the primary objective.	Moderate to difficult. Trenching will be required to fill in the various slurry mixes; alternatively, sheet pile installations can be accomplished without excavation of trenches. The application of barrier walls is limited by the depth of installation, which similar to PRBs, should be keyed into a low permeability layer such as a thick clay layer or bedrock. Installation methods and materials are readily available. Once installed, above-ground infrastructure to pump and treat groundwater will be required. O&M requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals. Technically infeasible to construct a barrier wall at the required depths to address the aquifer zone in the vicinity of MW-21D (>30 ft into bedrock).

Table 1
Evaluation of Remedial Technologies
Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure	40 CFR 257.96(C)(1)	40 CFR 257.96(C)(2)	40 CFR 257.96(C)(3)	
	Potential Impacts	Time Requirement to Begin/Complete	Institutional Requirements	Other Env or Public Health Requirements
Geochemical Approaches (In-Situ Injection)	Minimal impacts are expected if remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and bench/pilot study results. Redox-altering processes have the potential to mobilize naturally-occurring constituents as an unintended consequence if not properly studied and implemented.	Installation of the injection network can be accomplished relatively quickly (1 to 2 months). However, a thorough pre-design investigation, geochemical modeling, and/or bench- and/or pilot-testing will be required to obtain design parameters prior to design and construction of the corrective measure, which may take up to 24 months. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation process kinetics of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.	Deed restrictions may be necessary until in-situ treatment has achieved GWPS. A new UIC permit (for in-situ injections) would be required to implement this corrective measure. No other institutional requirements are expected at this time.	None expected at this point. Based on Co results for surface water collected to date, no Co impacts to surface water have been detected. Potential for mobilization of redox-sensitive constituents exists during implementation of an anaerobic attenuation approach. Following installation, the remedy is passive.
Hydraulic Containment	Moderate. The main potential impacts are related to the presence and operation of an on-site above-ground water treatment facility and related infrastructure to convey and treat extracted groundwater. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone.	Installation of extraction wells and/or trenches can be accomplished relatively quickly (1 to 2 months). However, additional aquifer testing, system design and installation, and permit approval may be required, which may take up to 24 months. The initiation of the approach would be contingent on the start-up of the wastewater treatment infrastructure. Hydraulic containment can be achieved relatively quickly after startup of the extraction system, but uncertainty exists with respect to the time to achieve GWPS without additional data collection to better understand attenuation mechanisms for Co.	Depending on the effluent management strategy, modifications to the existing NPDES permit may be required, or obtaining a new underground injection control (UIC) permit may be needed if groundwater reinjection is chosen. In addition, deed restrictions may be required as long as groundwater conditions are above regulatory standards for unrestricted use.	Based on Co results for surface water collected to date, no Co impacts to surface water have been detected. Above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.
Monitored Natural Attenuation (MNA)	None. MNA relies on the natural processes active in the aquifer matrix to reduce constituent concentrations without disturbing the surface or the subsurface.	The infrastructure to initiate MNA is already in place. Demonstrating attenuation mechanisms and capacity can be time-consuming and can take up to 24 months. MNA is expected to be successful within a reasonable time frame following pond closure. Engineering measures will be implemented during closure of AP-2 to minimize potential impacts to the subsurface during closure activities and routine groundwater monitoring will be used to verify that groundwater impacts remain stable or decrease over time.	MNA may require the implementation of institutional controls, such as deed restrictions, to preclude potential exposure to groundwater within the footprint of impacted groundwater until GWPS are achieved.	Little to no physical disruption to remediation areas and no adverse construction-related impacts are expected on the surrounding community. Based on Co results for surface water collected to date, no Co impacts to surface water have been detected.
Permeable Reactive Barrier	Minimal impacts are expected following the construction of the remedy. However, ZVI has the potential to create anaerobic conditions downgradient of the PRB wall that may mobilize redox-sensitive naturally-occurring constituents. These conditions need to be carefully monitored. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures.	Installation of a PRB can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, bench- and/or pilot-testing would be required to obtain design parameters prior to design and construction of the remedy, which may take up to 24 months. Once installed, the time to achieve GWPS downgradient of the PRB is anticipated to be relatively quick.	Deed restrictions may be necessary for groundwater areas upgradient of the PRB (if not installed along the waste boundary). No other institutional requirements are expected at this time.	None expected at this point. Based on Co results for surface water collected to date, no Co impacts to surface water have been detected. Following installation, the remedy is passive. However, certain treatment media (such as ZVI) have the potential to mobilize naturally-occurring constituents downgradient of the PRB.
Subsurface Vertical Barrier Walls	Minimal impacts are expected following the construction of the remedy. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures. Changes to groundwater flow patterns due to installation of the barrier wall are expected, which can affect other aspects of groundwater corrective action. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone that may result in the mobilization of other constituents that may require treatment.	Installation of a barrier wall can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, some design phase and additional aquifer and compatibility testing will be required, which may take up to 24 months. Once installed, preventing migration of constituents dissolved in groundwater is anticipated to be relatively quick. Since this approach does not treat the downgradient area of impacted groundwater but prevents migration from a source area, it will likely have to be maintained long-term and coupled with other approaches.	Deed restrictions may be necessary for groundwater areas downgradient of the barrier wall until remedial goals are met. No other institutional requirements are expected at this time.	Based on Co results for surface water collected to date, no Co impacts to surface water have been detected. Due to the need for groundwater extraction associated with barrier walls, above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.

Table 1
 Evaluation of Remedial Technologies
 Plant Hammond AP-2, Floyd County, Georgia

Corrective Measure	Relative Costs	Evaluation of Retainage
Geochemical Approaches (In-Situ Injection)	Medium (depending on expanse of injection network required and injectate volume required per derived design parameters)	Retained for further analysis; could be applied to immobilize Co as a sparingly-soluble mineral, or could be applied to raise the groundwater pH to promote immobilization through sorption mechanisms. Additional evaluation required to determine efficacy to treat Mo in bedrock.
Hydraulic Containment	Medium to high (depending on remedy duration, complexity of above-ground treatment system, and volume of water processed)	Retained for further analysis; extracted water could be routed to wastewater treatment infrastructure built for dewatering and closure of ponds at the site; generally accepted by most stake-holders. Could be considered an effective measure to maintain hydraulic control along Coosa River and/or the unnamed creek west of AP-2 should closure construction activities require an interim groundwater treatment configuration.
Monitored Natural Attenuation (MNA)	Low to medium	Retained for further analysis; may be used as a stand-alone corrective measure or in conjunction with other potential groundwater corrective measures following source control (i.e., closure by removal of CCR).
Permeable Reactive Barrier	Medium to high (for installation) - minimal O&M requirements if replacement is not necessary	Not retained for further analysis; does not address downgradient groundwater when installed along the compliance boundary; impractical to construct a wall at the required depths (>30ft into bedrock); potential for increased maintenance due to potential biofouling and mineral precipitation.
Subsurface Vertical Barrier Walls	Medium to high (depending on length and depth of wall, remedy duration and complexity of above-ground treatment system)	Not retained for further analysis; should be considered as part of source control, which is unnecessary in the context of closure by removal of CCR; impractical to construct a wall at the required depths (>30ft into bedrock); furthermore, does not address downgradient groundwater when installed along the compliance boundary.

Table 2
Monitoring Well Network Summary
Plant Hammond AP-2, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Ground Surface Elevation (ft)	Top of Casing Elevation ⁽²⁾ (ft)	Top of Screen Elevation ⁽²⁾ (ft)	Bottom of Screen Elevation ⁽²⁾ (ft)	Well Depth (ft BTOC) ⁽³⁾	Screen Interval Length
Compliance Monitoring Well										
HGWA-1	Upgradient	12/3/2014	1550423.32	1940770.00	592.32	595.21	573.12	563.12	32.49	10
HGWA-2	Upgradient	12/2/2015	1549796.87	1939845.15	585.29	587.92	570.29	560.29	27.95	10
HGWA-3	Upgradient	12/2/2015	1549794.41	1939833.39	585.23	587.74	553.23	543.23	44.51	10
HGWA-4	Upgradient	12/3/2014	1549930.45	1939385.45	584.94	587.60	572.24	562.24	25.76	10
HGWA-5	Upgradient	12/10/2015	1548633.33	1937184.17	580.52	583.24	564.92	554.92	28.72	10
HGWA-6	Upgradient	12/11/2015	1548636.35	1937177.73	580.72	583.38	543.72	533.72	49.66	10
HGWC-14	Downgradient	10/16/2014	1547998.96	1938406.27	594.67	597.25	564.67	554.67	42.98	10
HGWC-15	Downgradient	10/20/2014	1547875.33	1937854.92	578.73	581.49	553.93	543.93	37.96	10
HGWC-16	Downgradient	10/21/2014	1548209.83	1937540.33	577.36	580.02	557.36	547.36	33.06	10
HGWC-17	Downgradient	10/22/2014	1548449.71	1937538.98	581.51	584.30	566.91	556.91	27.79	10
HGWC-18	Downgradient	10/22/2014	1548821.27	1937558.32	581.36	584.18	566.86	556.86	27.71	10
Piezometer										
MW-8	Downgradient	10/29/2014	1548171.86	1940016.70	584.25	587.37	565.05	555.05	32.72	10
MW-9	Downgradient	10/29/2014	1548131.38	1938922.16	588.42	591.67	569.12	559.12	32.95	10
MW-12	Downgradient	10/21/2014	1547853.78	1937525.46	580.59	584.33	555.79	545.79	38.94	10
MW-16	Downgradient	10/27/2014	1549104.17	1937940.06	571.70	575.22	562.20	552.20	23.42	10
MW-17	Downgradient	10/28/2014	1549163.28	1938345.81	583.68	587.67	568.98	558.98	29.09	10
MW-18	Downgradient	10/29/2014	1548984.15	1938712.73	589.75	593.07	571.05	561.05	32.42	10
MW-33	Downgradient	11/21/2019	1547973.50	1938412.13	591.19	593.92	566.60	556.60	37.72	10
MW-34D	Downgradient	5/6/2020	1547996.82	1938392.20	593.83	596.51	530.48	520.48	73.68	10
MW-35	Downgradient	5/13/2020	1547905.33	1938417.82	571.88	574.40	558.70	548.70	23.52	10
MW-36D	Downgradient	5/7/2020	1548435.43	1937538.19	581.44	584.10	534.12	524.12	57.65	10
Delineation Monitoring Well										
MW-21D	Downgradient	11/19/2018	1548814.86	1937555.78	581.16	583.84	542.36	532.36	51.88	10
MW-22	Downgradient	11/15/2018	1547854.68	1937832.04	576.05	578.51	551.45	541.45	37.47	10
MW-23D	Downgradient	11/15/2018	1547876.55	1937843.89	579.06	581.30	529.46	519.46	62.24	10
MW-37D	Downgradient	5/8/2020	1548803.01	1937551.05	580.95	583.58	514.65	504.65	76.63	10

Notes:

ft MSL = feet mean sea level.

ft BTOC = feet below top of casing.

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey data obtained 5/19/2020.

(2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data obtained 5/19/2020.

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

Table 3
Summary of Groundwater and Pore Water Analytical Data
Plant Hammond AP-2, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-2	HGWA-3	HGWA-4	HGWA-5	HGWA-6	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18	MW-21D	MW-22	MW-23D		
Sample Date:	9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/24/2019	9/24/2019	9/24/2019	9/24/2019	9/25/2019	9/25/2019	9/25/2019	6/17/2020	9/27/2019	9/26/2019		
Parameter																
APPENDIX III	Boron	0.021 J	0.040 J	0.0081 J	0.013 J	0.0088 J	0.016 J	14.7	2.9	2.7	8.1	11.7	5.8	2.9	3.8	
	Calcium*	118	19.5	71.0	36.6	29.3	52.5	507	202	185	305	437	434	202	306	
	Chloride*	17.7	5.1	5.9	3.6	1.7	1.3	188	120	84.4	139	181	223	176	204	
	Fluoride*	0.078 J	<0.050	<0.050	<0.050	0.058 J	<0.050	0.053 J	0.12 J	<0.050	0.081 J	0.73	<0.050	0.28 J	0.16 J	
	pH*	7.02	5.33	7.30	6.16	6.40	7.41	4.77	6.33	6.92	6.28	4.54	6.47	5.81	6.64	
	Sulfate*	70.2	47.2	43.9	<0.50	20.7	35.4	1110	382	223	434	920	901	520	556	
	TDS*	442	129	268	131	133	222	2470	1140	813	1280	1960	2100	1110	1400	
APPENDIX IV	Antimony	<0.00027	<0.00027	<0.00027	--	--	--	--	--	--	--	--	--	--	--	
	Arsenic	0.00046 J	0.00067 J	0.0011 J	<0.00035	0.00055 J	<0.00035	0.0039 J	0.00037 J	<0.00035	<0.00035	0.0044 J	<0.00035	0.00045 J	<0.00035	
	Barium	0.042	0.13	0.13	0.030	0.053	0.22	0.021	0.019	0.11	0.025	0.030	0.054	0.028	0.064	
	Beryllium	<0.000074	0.00011 J	<0.000074	<0.000074	<0.000074	<0.000074	0.00044 J	<0.000074	<0.000074	<0.000074	0.0031	<0.000074	<0.000074	<0.000074	
	Cadmium	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	0.0014 J	<0.00011	<0.00011	0.0023 J	<0.00011	0.0014 J	<0.00011	
	Chromium	<0.00039	0.00058 J	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	0.00041 J	<0.00039	<0.00039	<0.00039	<0.00039	0.00057 J	0.00040 J	<0.00039
	Cobalt⁺	<0.00030	0.038	<0.00030	<0.00030	0.00063 J	<0.00030	0.026	0.022	<0.00030	0.015	0.18	<0.00030	0.035	0.00098 J	
	Fluoride	0.078 J	<0.050	<0.050	<0.050	0.058 J	<0.050	0.053 J	0.12 J	<0.050	0.081 J	0.73	<0.050	0.28 J	0.16 J	
	Lead	0.000078 J	0.000092 J	<0.000046	<0.000046	<0.000046	0.000071 J	0.0013 J	0.00020 J	<0.000046	0.000089 J	0.0015 J	<0.000046	0.00010 J	<0.000046	
	Lithium	0.0011 J	0.0016 J	0.0029 J	<0.00078	0.0035 J	0.011 J	<0.00078	0.0012 J	0.0038 J	0.0011 J	0.015 J	0.023 J	0.0013 J	0.0023 J	
	Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Molybdenum	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	0.019	<0.00095	0.0025 J
	Comb. Radium 226/228	0.306 U	1.04 U	0.384 U	0.455 U	0.201 U	0.874 U	1.17	0.582 U	0.643 U	1.54	2.77	0.691 U	1.44 U	1.25	
Selenium	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.0064 J	<0.0013	<0.0013	<0.0013	0.020	<0.0013	<0.0013	<0.0013		
Thallium	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	<0.000052	0.00030 J	<0.000052	<0.000052	0.00012 J	0.00019 J	<0.000052	<0.000052	<0.000052		
GEOCHEM	Bicarb. Alkalinity	279	29.0	174	109	90.0	158	<1.0	124	192	182	<1.0	41.2	93.0	216	
	Iron	0.022 J	1.7	0.53	0.021 J	1.5	0.49	0.84	0.053	1.5	0.18	0.11	22.3	0.66	0.17	
	Magnesium	5.4	2.4	4.8	1.3	5.6	10	53.5	37.9	15.5	31.2	36.0	71.7	46.3	35.4	
	Manganese	0.20	1.1	0.21	0.035	0.077	0.071	5.5	16.3	0.036	4.4	3.7	1.3	16.7	9.0	
	Potassium	0.33	0.88	0.42	0.24 J	0.65 J	0.56 J	12.1	0.89	0.76 J	2.7	8.9	1.1	1.0	2.1	
	Sodium	20.4	8.7	5.2	8.3	6.2	7.9	12.1	14.7	9.9	15.3	10.4	15.8	15.0	13.1	
Sulfide	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		

Notes:

-- = Parameter was not analyzed

< = Parameter was not detected above the specified method detection limit (MDL)

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

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical Minimum Detectable Concentration (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, mercury by EPA Method 7470A, TDS was analyzed by SM2540C, and combined radium by EPA Methods 9315/9320. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event.

Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the March 2020 assessment monitoring event.

Table 3
 Summary of Groundwater and Pore Water Analytical Data
 Plant Hammond AP-2, Floyd County, Georgia

Well ID:		MW-33	MW-34D	MW-35	MW-36D	MW-37D	PMW-03	PMW-04
Sample Date:		6/17/2020	6/18/2020	6/18/2020	6/18/2020	6/18/2020	4/8/2020	4/10/2020
Parameter								
APPENDIX III	Boron	10.3	9.4	11.9	0.067 J	0.14	2.4	15.4
	Calcium*	561	584	517	65.2	165	230	362
	Chloride*	250	259	229	2.3	151	39.0	34.9
	Fluoride*	0.25	0.082 J	0.053 J	0.053 J	0.10	0.34	1.3
	pH*	4.36	7.35	5.46	6.45	7.78	5.59	7.99
	Sulfate*	1210	1100	1160	50.5	286	920	854
	TDS*	2540	2320	2310	237	888	1300	1420
APPENDIX IV	Antimony	--	--	--	--	--	0.00043 J	0.0056
	Arsenic	0.0031 J	0.0032 J	0.0050 J	0.00046 J	0.0021 J	0.24	0.88
	Barium	0.024	0.044	0.029	0.15	0.19	0.045	0.40
	Beryllium	0.00099 J	0.00015 J	0.00032 J	<0.00074	0.00012 J	0.00048 J	0.0029 J
	Cadmium	0.00021 J	<0.00011	0.00053 J	<0.00011	<0.00011	0.00029 J	0.0027
	Chromium	<0.00039	0.0059 J	<0.00039	0.00045 J	0.0048 J	<0.00039	0.016
	Cobalt ⁺	0.053	0.011	0.091	<0.00030	0.0015 J	0.12	0.0096
	Fluoride	0.25	0.082 J	0.053 J	0.053 J	0.10	0.34	1.3
	Lead	0.0017 J	0.00087 J	0.00016 J	<0.000046	0.0017 J	0.00023 J	0.017
	Lithium	0.00097 J	0.0021 J	0.0046 J	0.0087 J	0.038 J	0.094	0.083
	Mercury	--	--	--	--	--	<0.00014	<0.00014
	Molybdenum	<0.00095	<0.00095	<0.00095	<0.00095	0.023	0.028	6.6
	Comb. Radium 226/228	1.43 U	1.36	2.02	1.85	1.79	--	--
	Selenium	0.014	0.0025 J	0.014	<0.0013	<0.0013	<0.0013	0.0045 J
Thallium	0.00028 J	0.00015 J	0.00013 J	<0.000052	<0.000052	0.0037	0.00097 J	
GEOCHEM	Bicarb. Alkalinity	<5.0	96.5	<5.0	164	116	32.5	109
	Iron	1.2	1.8	2.4	0.58	3.4	108	5.4
	Magnesium	55.9	59.3	71.5	7.7	30.5	30.8	33.0
	Manganese	4.5	4.7	10.6	0.055	0.15	1.5	0.25
	Potassium	11.1	10.8	8.3	0.47	2.9	27.8	15.4
	Sodium	10.8	16.0	11.5	7.2	59.6	12.1	22.8
Sulfide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	

Table 4
Summary of AQTESOLV Input Parameters and Estimated Horizontal Hydraulic Conductivity Values
Plant Hammond AP-2, Floyd County, Georgia

Well Information									AQTESOLV Input Parameters											Hydraulic Conductivity (Kh)						
Well ID	Screen Zone Material	Test number	Depth to Sensor [ft bTOC]	Static DTW [ft bTOC]	DTW after Pressure Release [ft bTOC]	Top Screen Depth [ft TOC]	Bottom Screen Depth [ft bTOC]	Total Depth [ft bTOC]	Ho [ft]	H [ft]	b [ft]	Kv/Kh	d [ft]	L [ft]	T [ft]	r(c) [ft]	r(eq) [ft]	r(p) [ft]	r(w) [ft]	r(sk) [ft]	Bouwer-Rice Kh [ft/day]	KGS Kh [ft/day]	GeoMean Kh [ft/day]	Bouwer-Rice Kh [cm/sec]	KGS Kh [cm/sec]	GeomeanMean Kh [cm/sec]
HGWC-16	Terrace Alluvium/Colluvium	ST	28.5	12.13	15.91	22.66	32.66	33.06	3.78	20.93	20.93	0.1	10.53	10.0	0.00	0.083	0.03	0	0.083	0.25	0.9	1.0	0.9	3.2E-04	3.4E-04	2.3E-04
		P	28.0	12.13	17.77	22.66	32.66	33.06	5.64	20.93	20.93	0.1	10.53	10.0	0.00	0.083	0.03	0	0.083	0.25	0.5	0.4	0.4	1.8E-04	1.4E-04	
HGWC-14	Residuum	ST	38.0	28.53	32.88	32.58	42.58	42.98	4.35	14.45	14.45	0.1	4.05	10.0	0.00	0.083	0.03	0	0.083	0.25	6.3	6.9	6.6	2.2E-03	2.4E-03	2.3E-03
HGWC-15	Residuum	ST	33.0	16.77	19.54	27.56	37.56	37.96	1.05	21.19	21.19	0.1	10.79	10.0	0.00	0.083	0.03	0	0.083	0.25	0.9	0.5	0.7	3.1E-04	1.9E-04	3.1E-04
		P	34.0	16.73	23.73	27.56	37.56	37.96	7.00	21.23	21.23	0.1	10.83	10.0	0.00	0.083	0.03	0	0.083	0.25	1.1	1.3	1.2	3.8E-04	4.4E-04	
HGWC-17	Residuum	ST	23.0	18.72	20.41	17.39	27.39	27.79	1.69	9.07	9.07	0.1	0.00	10.0	0.00	0.083	0.03	0	0.083	0.25	0.7	0.9	0.8	2.5E-04	3.0E-04	2.4E-04
		P	23.0	18.44	24.12	17.39	27.39	27.79	5.68	9.35	9.35	0.1	0.00	10.0	0.00	0.083	0.03	0	0.083	0.25	0.6	0.6	0.6	2.1E-04	2.0E-04	
HGWC-18	Residuum and Partially Weathered Rock	ST	23.0	18.80	20.34	17.31	27.31	27.71	1.54	8.91	8.91	0.1	0.00	10.0	0.00	0.083	0.03	0	0.083	0.25	0.3	0.3	0.3	1.1E-04	1.2E-04	1.5E-04
		P	22.0	18.82	24.33	17.31	27.31	27.71	5.51	8.89	8.89	0.1	0.00	10.0	0.00	0.083	0.03	0	0.083	0.25	0.5	0.6	0.5	1.6E-04	2.1E-04	
MW-21D	Shale	ST	46.5	17.72	23.89	41.55	51.55	51.88	6.17	34.16	34.16	0.1	23.83	10.0	0.00	0.083	0.03	0	0.083	0.25	1.4	1.7	1.5	5.0E-04	5.9E-04	5.4E-04
MW-23D	Shale	ST	58.0	16.68	22.98	51.91	61.91	62.24	6.30	45.56	45.56	0.1	35.23	10.0	0.00	0.083	0.03	0	0.083	0.25	2.7	2.8	2.7	9.5E-04	9.9E-04	9.7E-04
MW-34D	Shale	ST	69.0	30.38	51.76	63.35	73.35	73.68	21.38	43.30	43.30	0.1	32.97	10.0	0.00	0.083	0.03	0	0.083	0.25	2.2	1.9	2.0	7.7E-04	6.7E-04	7.2E-04

Notes:

- Ho** Observed initial displacement (change in water level from static)
- H** Static water column height
- b** Saturated thickness of aquifer. If bottom of aquifer is unknown set b=bottom of well.
- Kv/Kh** Ratio of vertical to horizontal hydraulic conductivity
- d** Depth to top of well screen - this is the length from the water level (or top confining unit) to the top of the screen.
- L** Length of well screen
- T** Transducer Depth below the water table - Note: only used by the Butler-Zahn (2004) & McElwee-Zenner solution. If using Bouwer-Rice or other solution methods, set to zero
- r(c)** Inside radius of well casing
- r(eq)** Radius of downhole equipment
- r(w)** Radius of well open or perforated interval
- r(sk)** Outside radius of well skin disturbed zone enveloping filter pack
- DTW** Depth to water
- ST** Slug Test (data obtained from pneumatic slug testing.)
- PT** Pumping Test (data obtained by evacuating water from well using a monsoon submersible pump).
- TOC** Top Of Casing

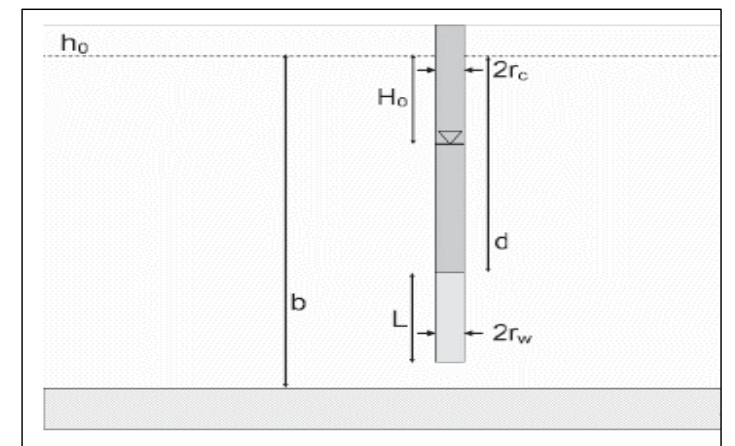
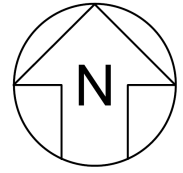


Table 5
Proposed ACM Supplementary Data Analyses and Collection Tasks for Second Semi-Annual Period 2020
Plant Hammond AP-2, Floyd County, Georgia

Data Collection Event	Applicable CMs ⁽¹⁾	Applicability/Rationale	Field Component	Parameters of Interest (POI)	Analytical Lab Performing Analysis
Installation of additional deep-screened background monitoring wells upgradient of Hammond AP-1, AP-2, AP-3, AP-4	2	Establish background conditions in zones of the aquifer deeper than the six wells currently used to establish background conditions (i.e., HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, and HGWA-6). Refine/expand the current conceptual site model (CSM) and further evaluate MNA strategy.	Use a sonic drill rig to set a 2-in diameter PVC well at six locations; total well depths ranging approximately from 40 to 112 feet below ground surface.	<u>In addition to routine App III/IV and field parameters:</u> major cations (i.e., calcium, magnesium, sodium, and potassium) and anions (i.e., chloride, sulfate, and total and bicarbonate alkalinity), sulfide, iron, manganese.	Pace-ATL (analytical lab); SCS Civil Field Services (well installation)
Evaluate the source of acidity in groundwater outside of AP-2	2, 3	Evaluate the source of acidity in select groundwater wells outside of AP-2 to evaluate whether potential groundwater corrective measures could be successful given the natural environment.	Continue collecting groundwater samples from existing well network currently sampled under the assessment monitoring program. One or more additional wells/piezometers may need to be installed within AP-2 between pore water piezometer PMW-04 and downgradient well HGWC-18.	<u>In addition to routine App III/IV and field parameters:</u> major cations (i.e., calcium, magnesium, sodium, and potassium) and anions (i.e., chloride, sulfate, and total and bicarbonate alkalinity), sulfide, iron, manganese.	Pace-ATL
Perform a conceptual-level feasibility study of applied corrective measures using existing groundwater flow model	1	Evaluate potential hydraulic capture zones using groundwater extraction systems (extraction well gallery); determine conceptual layouts to achieve hydraulic capture.	Not Applicable (Desktop Study)	Conceptually determine layouts for extraction well gallery to provide effective hydraulic containment while minimizing additional infrastructure or land requirements.	No lab data required; Geosyntec desk-top analyses
Evaluate conceptual schedule for implementation and constructability of retained groundwater corrective measures	1, 2, 3	Analysis of conceptual schedules and practical constructability of possible layouts of corrective measures will aid the future selection process of (an) appropriate groundwater corrective measure(s).	Not Applicable (Consult with system installation contractors to derive concept-level construction schedules and practical constructability for possible layouts.)	Feasibility-level construction schedules and level of effort for implementation.	No lab data required; Geosyntec desk-top analyses

Note:
(1) Corrective Measure (CM) Codes:
1 - Hydraulic Containment
2 - Monitored Natural Attenuation (MNA)
3 - Geochemical Injections

FIGURES



Note:
1. Aerial photograph source: Google Earth Pro, August 2019.



SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
FLOYD COUNTY, GEORGIA

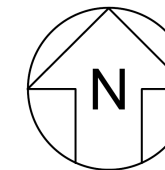
Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA

AUGUST 2020

**FIGURE
1**



LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Monitoring Well
- Vertical Delineation Monitoring Well
- Piezometer
- Pore Water Piezometer
- Surface Water Sampling Location



Note:
 1. Aerial photograph source: Google Earth Pro, August 2019.
 2. Two upstream Coosa River surface water sampling locations, H-0.5 and H-2, are not shown on the figure and located at 1942375.24, 1548207.69 and 1943448.96, 1543373.73, respectively.



MONITORING WELL NETWORK AND SAMPLING LOCATION MAP

GEORGIA POWER COMPANY
 PLANT HAMMOND AP-2
 ROME, FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

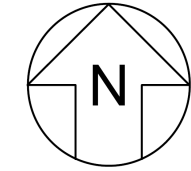
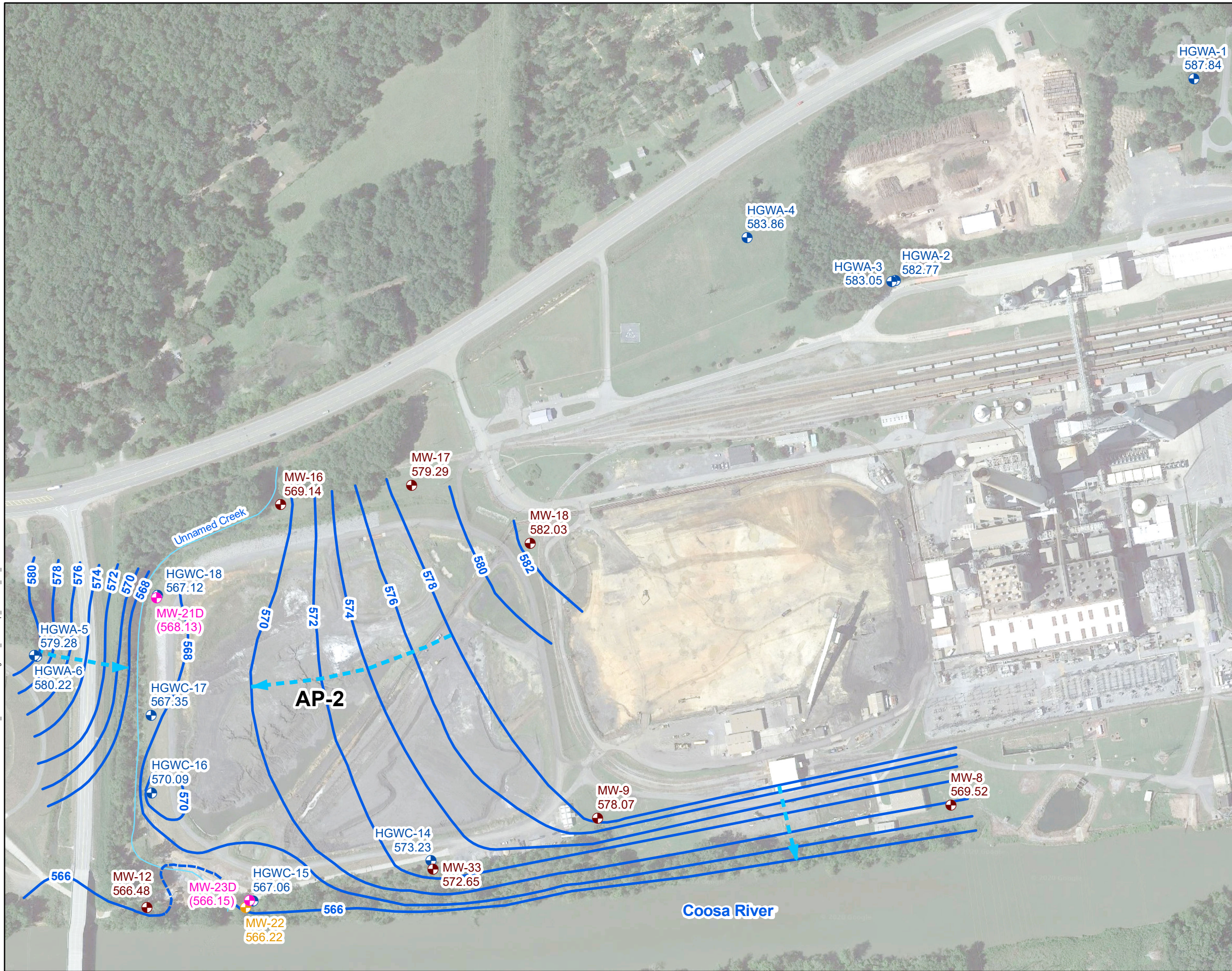
Prepared By: Geosyntec
 consultants

KENNESAW, GA AUGUST 2020

FIGURE
2

\\arc-01\proj1\GA Power\Plant Hammond GIS\mxd\Hammond2020\ACM\PRAP-2\Figure 2_WellMap.mxd 8/31/2020 5:11:10 PM

N:\GA Power\Plant Hammond\GIS\mxd\Hammond\2020\ACM\2020_08_ACM_FRAP-2\Figure 3_POT_Map_SAP2.mxd 8/21/2020 5:06:50 PM



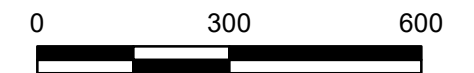
LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Monitoring Well
- Vertical Delineation Monitoring Well
- Piezometer
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- Unnamed Creek



Notes:

1. Water level elevation recorded on March 23, 2020. Elevation provided in feet referenced to North American Vertical Datum (NAVD) 88.
2. Water elevations in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
3. The map shows only the wells/piezometers installed at the time of the gauging event.
4. Aerial photograph source: Google Earth Pro, August 2019.



SCALE IN FEET

**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 23, 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-2
ROME, FLOYD COUNTY, GEORGIA

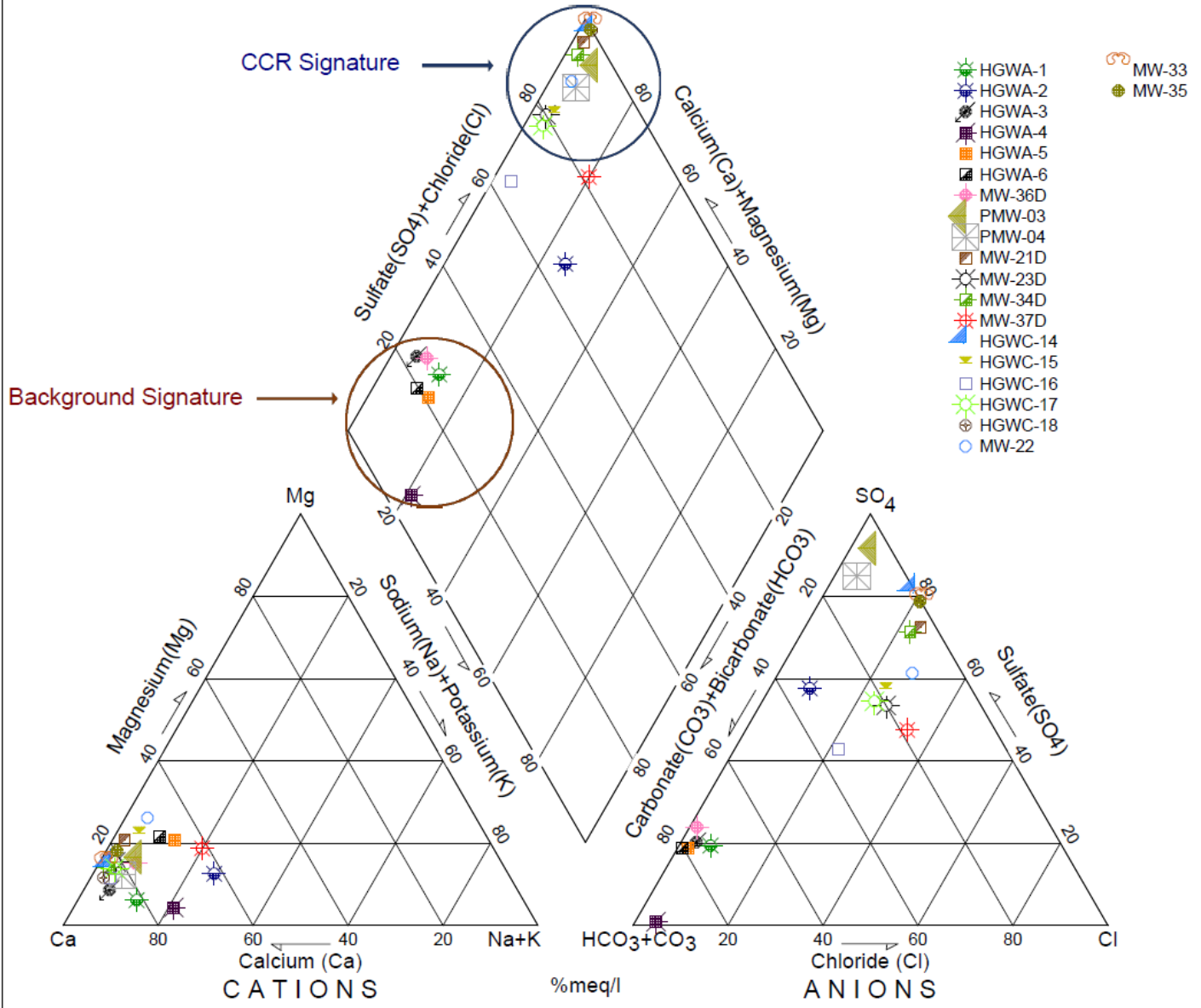
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA AUGUST 2020

**FIGURE
3**

Piper Diagram AP-2 Hammond



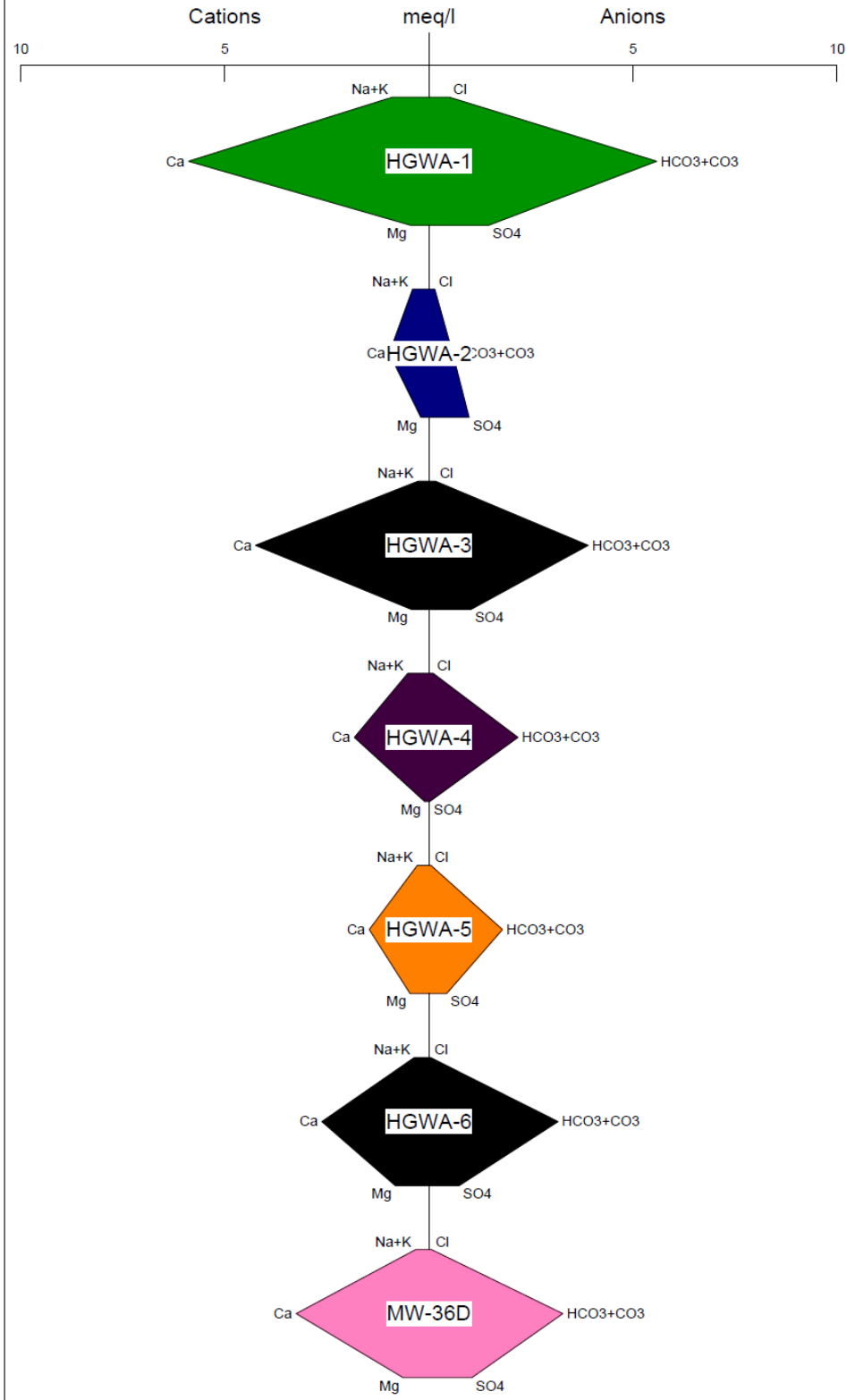
Sample Date										
HGWA-1	HGWA-2	HGWA-3	HGWA-4	HGWA-5	HGWA-6	HGWC-14	HGWC-15	HGWC-16	HGWC-17	HGWC-18
9/23/2019	9/23/2019	9/23/2019	9/24/2019	9/24/2019	9/24/2019	9/24/2019	9/24/2019	9/25/2019	9/25/2019	9/25/2019
MW-21D	MW-22	MW-23D	MW-33	MW-34D	MW-35	MW-36D	MW-37D	PMW-03	PMW-04	--
6/17/2020	9/27/2019	9/26/2019	6/17/2020	6/18/2020	6/18/2020	6/18/2020	6/18/2020	4/8/2020	4/10/2020	--

Piper Trilinear Plot

Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For: Georgia Power	Prepared By: Geosyntec <small>consultants</small>	Figure
Kennesaw, GA	August 2020	4

Stiff Diagrams AP-2 Hammond



Stiff Diagram – Background Wells & Piezometers

Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:

Georgia Power

Prepared By:

Geosyntec
consultants

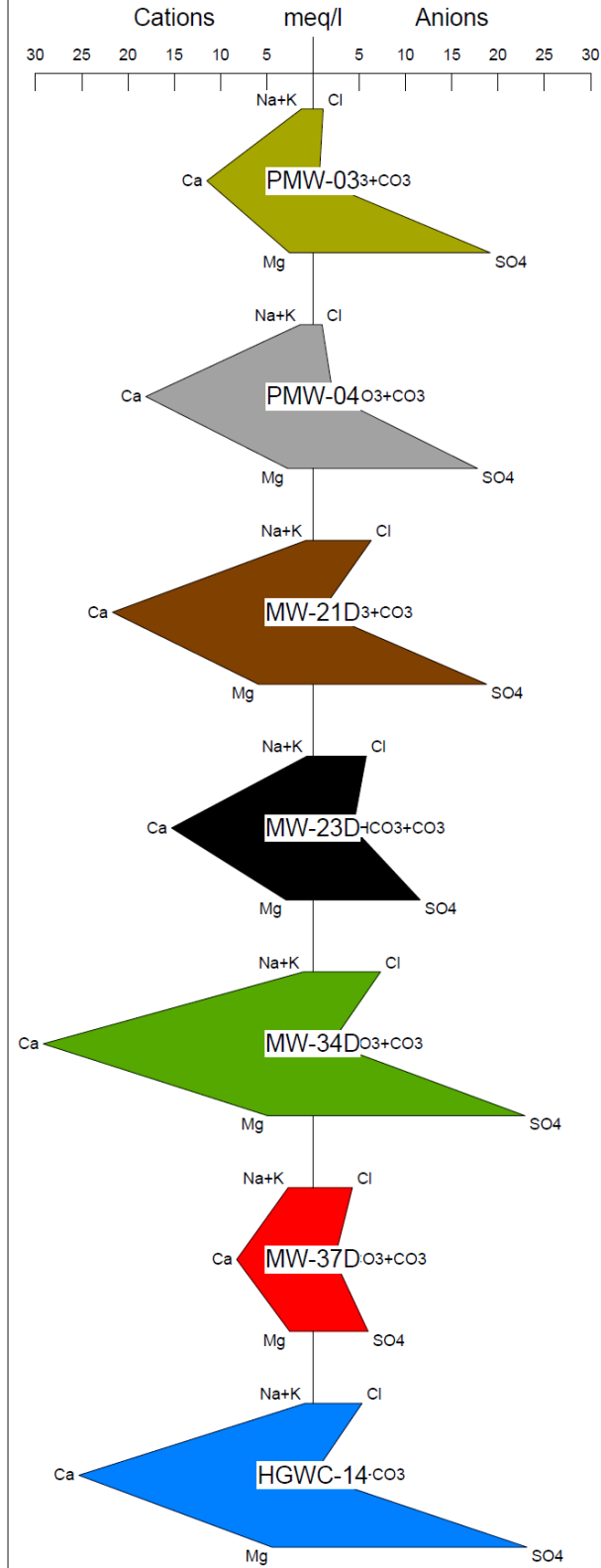
Figure

5A

Kennesaw, GA

August 2020

Stiff Diagrams AP-2 Hammond



**Stiff Diagram – Compliance Wells,
Piezometers & AP-2 Pore Water Piezometers**
Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:



Kennesaw, GA

Prepared By:

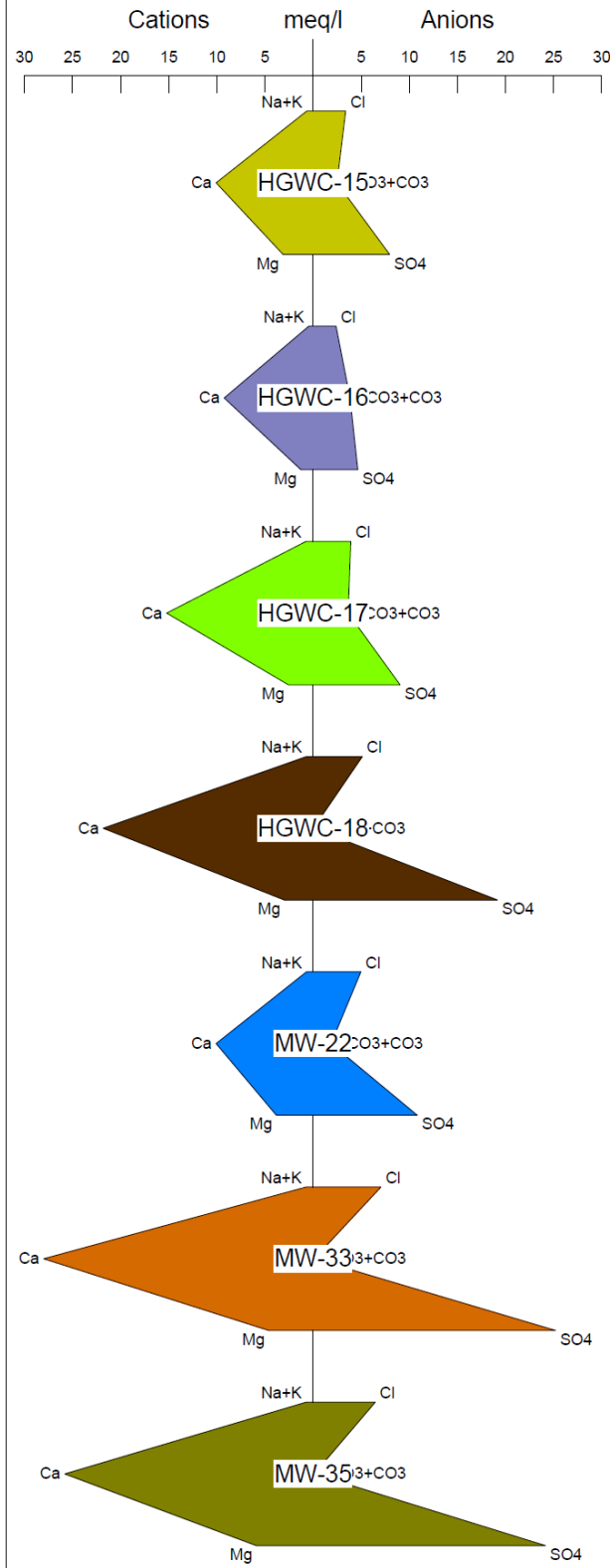


August 2020

Figure

5B

Stiff Diagrams AP-2 Hammond



**Stiff Diagram – Compliance Wells,
Piezometers & AP-2 Pore Water Piezometers**
Georgia Power Company
Plant Hammond AP-2
Floyd County, Georgia

Prepared For:



Prepared By:



Figure

5C

Kennesaw, GA

August 2020

APPENDIX A

Laboratory Analytical Reports

April 21, 2020

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

RE: Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between April 09, 2020 and April 13, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Atlanta, GA

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630862001	PMW-03	Water	04/08/20 12:01	04/09/20 10:33
2630862002	PMW-04 FILTERED	Water	04/10/20 15:50	04/13/20 10:11
2630862003	PMW-04	Water	04/10/20 15:22	04/13/20 10:11

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630862001	PMW-03	EPA 6010D	DRB	5	PASI-GA
		EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C	KN	1	PASI-GA
		SM 4500-S2D-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630862002	PMW-04 FILTERED	EPA 6010D	DRB	5	PASI-GA
		EPA 6020B	KLH	14	PASI-GA
		EPA 7470A	VHB	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C	TC1	1	PASI-GA
		SM 4500-S2D-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630862003	PMW-04	EPA 6010D	DRB	5	PASI-GA
		EPA 6020B	KLH	14	PASI-GA
		EPA 7470A	VHB	1	PASI-GA
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C	TC1	1	PASI-GA
		SM 4500-S2D-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-GA = Pace Analytical Services - Atlanta, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630862001	PMW-03					
	Field pH	5.59	Std. Units		04/09/20 14:58	
EPA 6010D	Calcium	230	mg/L	1.0	04/16/20 17:25	
EPA 6010D	Magnesium	30.8	mg/L	0.050	04/16/20 17:25	
EPA 6010D	Manganese	1.5	mg/L	0.040	04/16/20 17:25	
EPA 6010D	Potassium	27.8	mg/L	0.20	04/16/20 17:25	
EPA 6010D	Sodium	12.1	mg/L	1.0	04/16/20 17:25	
EPA 6020B	Antimony	0.00043J	mg/L	0.0030	04/13/20 16:54	
EPA 6020B	Arsenic	0.24	mg/L	0.0050	04/13/20 16:54	
EPA 6020B	Barium	0.045	mg/L	0.010	04/13/20 16:54	
EPA 6020B	Beryllium	0.00048J	mg/L	0.0030	04/13/20 16:54	
EPA 6020B	Boron	2.4	mg/L	0.10	04/13/20 16:54	
EPA 6020B	Cadmium	0.00029J	mg/L	0.0025	04/13/20 16:54	
EPA 6020B	Cobalt	0.12	mg/L	0.0050	04/13/20 16:54	
EPA 6020B	Iron	108	mg/L	2.0	04/14/20 15:50	
EPA 6020B	Lead	0.00023J	mg/L	0.0050	04/13/20 16:54	
EPA 6020B	Lithium	0.094	mg/L	0.030	04/13/20 16:54	
EPA 6020B	Molybdenum	0.028	mg/L	0.010	04/13/20 16:54	
EPA 6020B	Thallium	0.0037	mg/L	0.0010	04/13/20 16:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	32.5	mg/L	5.0	04/15/20 15:30	
SM 2320B-2011	Alkalinity, Total as CaCO3	32.5	mg/L	5.0	04/15/20 15:30	M1
SM 2540C	Total Dissolved Solids	1300	mg/L	10.0	04/14/20 17:50	
EPA 300.0 Rev 2.1 1993	Chloride	39.0	mg/L	1.0	04/15/20 00:15	
EPA 300.0 Rev 2.1 1993	Fluoride	0.34	mg/L	0.30	04/15/20 00:15	M1
EPA 300.0 Rev 2.1 1993	Sulfate	920	mg/L	15.0	04/15/20 10:33	M6
2630862002	PMW-04 FILTERED					
	Field pH	7.99	Std. Units		04/13/20 13:34	
EPA 6010D	Calcium	351	mg/L	10.0	04/16/20 10:48	
EPA 6010D	Magnesium	32.0	mg/L	0.050	04/15/20 17:00	
EPA 6010D	Manganese	0.22	mg/L	0.040	04/15/20 17:00	
EPA 6010D	Potassium	11.8	mg/L	0.20	04/15/20 17:00	
EPA 6010D	Sodium	21.0	mg/L	1.0	04/15/20 17:00	
EPA 6020B	Antimony	0.0040	mg/L	0.0030	04/15/20 16:16	
EPA 6020B	Arsenic	0.88	mg/L	0.0050	04/15/20 16:16	
EPA 6020B	Barium	0.10	mg/L	0.010	04/15/20 16:16	
EPA 6020B	Boron	14.9	mg/L	1.0	04/16/20 13:21	
EPA 6020B	Cadmium	0.0026	mg/L	0.0025	04/15/20 16:16	
EPA 6020B	Cobalt	0.00074J	mg/L	0.0050	04/15/20 16:16	
EPA 6020B	Iron	0.93	mg/L	0.040	04/15/20 16:16	
EPA 6020B	Lithium	0.077	mg/L	0.030	04/15/20 16:16	
EPA 6020B	Molybdenum	6.4	mg/L	0.10	04/16/20 13:21	
EPA 6020B	Thallium	0.00015J	mg/L	0.0010	04/15/20 16:16	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	112	mg/L	5.0	04/15/20 15:46	
SM 2320B-2011	Alkalinity, Total as CaCO3	112	mg/L	5.0	04/15/20 15:46	
SM 2540C	Total Dissolved Solids	1580	mg/L	10.0	04/16/20 11:57	
EPA 300.0 Rev 2.1 1993	Chloride	34.1	mg/L	1.0	04/15/20 00:57	
EPA 300.0 Rev 2.1 1993	Fluoride	1.6	mg/L	0.30	04/15/20 00:57	
EPA 300.0 Rev 2.1 1993	Sulfate	894	mg/L	16.0	04/15/20 11:56	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2630862003	PMW-04					
	Field pH	7.99	Std. Units		04/13/20 13:34	
EPA 6010D	Calcium	362	mg/L	10.0	04/16/20 10:52	M6
EPA 6010D	Magnesium	33.0	mg/L	0.050	04/15/20 17:10	M1
EPA 6010D	Manganese	0.25	mg/L	0.040	04/15/20 17:10	
EPA 6010D	Potassium	15.4	mg/L	0.20	04/15/20 17:10	M1
EPA 6010D	Sodium	22.8	mg/L	1.0	04/15/20 17:10	
EPA 6020B	Antimony	0.0056	mg/L	0.0030	04/15/20 16:21	
EPA 6020B	Arsenic	0.88	mg/L	0.0050	04/15/20 16:21	
EPA 6020B	Barium	0.40	mg/L	0.010	04/15/20 16:21	
EPA 6020B	Beryllium	0.0029J	mg/L	0.0030	04/15/20 16:21	
EPA 6020B	Boron	15.4	mg/L	1.0	04/16/20 13:27	
EPA 6020B	Cadmium	0.0027	mg/L	0.0025	04/15/20 16:21	
EPA 6020B	Chromium	0.016	mg/L	0.010	04/15/20 16:21	
EPA 6020B	Cobalt	0.0096	mg/L	0.0050	04/15/20 16:21	
EPA 6020B	Iron	5.4	mg/L	0.040	04/15/20 16:21	
EPA 6020B	Lead	0.017	mg/L	0.0050	04/15/20 16:21	
EPA 6020B	Lithium	0.083	mg/L	0.030	04/15/20 16:21	
EPA 6020B	Molybdenum	6.6	mg/L	0.10	04/16/20 13:27	
EPA 6020B	Selenium	0.0045J	mg/L	0.010	04/15/20 16:21	
EPA 6020B	Thallium	0.00097J	mg/L	0.0010	04/15/20 16:21	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	109	mg/L	5.0	04/15/20 15:55	
SM 2320B-2011	Alkalinity, Total as CaCO3	109	mg/L	5.0	04/15/20 15:55	
SM 2540C	Total Dissolved Solids	1420	mg/L	10.0	04/16/20 11:58	
EPA 300.0 Rev 2.1 1993	Chloride	34.9	mg/L	1.0	04/15/20 01:11	
EPA 300.0 Rev 2.1 1993	Fluoride	1.3	mg/L	0.30	04/15/20 01:11	
EPA 300.0 Rev 2.1 1993	Sulfate	854	mg/L	16.0	04/15/20 12:10	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Sample: PMW-03		Lab ID: 2630862001		Collected: 04/08/20 12:01		Received: 04/09/20 10:33		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.59	Std. Units			1		04/09/20 14:58		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	230	mg/L	1.0	0.14	1	04/16/20 13:14	04/16/20 17:25	7440-70-2	
Magnesium	30.8	mg/L	0.050	0.011	1	04/16/20 13:14	04/16/20 17:25	7439-95-4	
Manganese	1.5	mg/L	0.040	0.0061	1	04/16/20 13:14	04/16/20 17:25	7439-96-5	
Potassium	27.8	mg/L	0.20	0.026	1	04/16/20 13:14	04/16/20 17:25	7440-09-7	
Sodium	12.1	mg/L	1.0	0.19	1	04/16/20 13:14	04/16/20 17:25	7440-23-5	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	0.00043J	mg/L	0.0030	0.00027	1	04/13/20 13:00	04/13/20 16:54	7440-36-0	
Arsenic	0.24	mg/L	0.0050	0.00035	1	04/13/20 13:00	04/13/20 16:54	7440-38-2	
Barium	0.045	mg/L	0.010	0.00049	1	04/13/20 13:00	04/13/20 16:54	7440-39-3	
Beryllium	0.00048J	mg/L	0.0030	0.000074	1	04/13/20 13:00	04/13/20 16:54	7440-41-7	
Boron	2.4	mg/L	0.10	0.0049	1	04/13/20 13:00	04/13/20 16:54	7440-42-8	
Cadmium	0.00029J	mg/L	0.0025	0.00011	1	04/13/20 13:00	04/13/20 16:54	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/13/20 13:00	04/13/20 16:54	7440-47-3	
Cobalt	0.12	mg/L	0.0050	0.00030	1	04/13/20 13:00	04/13/20 16:54	7440-48-4	
Iron	108	mg/L	2.0	0.49	50	04/13/20 13:00	04/14/20 15:50	7439-89-6	
Lead	0.00023J	mg/L	0.0050	0.000046	1	04/13/20 13:00	04/13/20 16:54	7439-92-1	
Lithium	0.094	mg/L	0.030	0.00078	1	04/13/20 13:00	04/13/20 16:54	7439-93-2	
Molybdenum	0.028	mg/L	0.010	0.00095	1	04/13/20 13:00	04/13/20 16:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/13/20 13:00	04/13/20 16:54	7782-49-2	
Thallium	0.0037	mg/L	0.0010	0.000052	1	04/13/20 13:00	04/13/20 16:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	04/10/20 08:33	04/10/20 15:17	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	32.5	mg/L	5.0	5.0	1		04/15/20 15:30		
Alkalinity, Total as CaCO ₃	32.5	mg/L	5.0	5.0	1		04/15/20 15:30		M1
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1300	mg/L	10.0	10.0	1		04/14/20 17:50		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		04/15/20 12:03	18496-25-8	M1

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Sample: PMW-03		Lab ID: 2630862001		Collected: 04/08/20 12:01	Received: 04/09/20 10:33	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	39.0	mg/L	1.0	0.60	1		04/15/20 00:15	16887-00-6	
Fluoride	0.34	mg/L	0.30	0.050	1		04/15/20 00:15	16984-48-8	M1
Sulfate	920	mg/L	15.0	7.5	15		04/15/20 10:33	14808-79-8	M6

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 PMW NON-ROUTINE
Project No.: 2630862

Sample: PMW-04 FILTERED		Lab ID: 2630862002		Collected: 04/10/20 15:50		Received: 04/13/20 10:11		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.99	Std. Units			1		04/13/20 13:34		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	351	mg/L	10.0	1.4	10	04/14/20 18:37	04/16/20 10:48	7440-70-2	
Magnesium	32.0	mg/L	0.050	0.011	1	04/14/20 18:37	04/15/20 17:00	7439-95-4	
Manganese	0.22	mg/L	0.040	0.0061	1	04/14/20 18:37	04/15/20 17:00	7439-96-5	
Potassium	11.8	mg/L	0.20	0.026	1	04/14/20 18:37	04/15/20 17:00	7440-09-7	
Sodium	21.0	mg/L	1.0	0.19	1	04/14/20 18:37	04/15/20 17:00	7440-23-5	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	0.0040	mg/L	0.0030	0.00027	1	04/14/20 18:32	04/15/20 16:16	7440-36-0	
Arsenic	0.88	mg/L	0.0050	0.00035	1	04/14/20 18:32	04/15/20 16:16	7440-38-2	
Barium	0.10	mg/L	0.010	0.00049	1	04/14/20 18:32	04/15/20 16:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/14/20 18:32	04/15/20 16:16	7440-41-7	
Boron	14.9	mg/L	1.0	0.049	10	04/14/20 18:32	04/16/20 13:21	7440-42-8	
Cadmium	0.0026	mg/L	0.0025	0.00011	1	04/14/20 18:32	04/15/20 16:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/14/20 18:32	04/15/20 16:16	7440-47-3	
Cobalt	0.00074J	mg/L	0.0050	0.00030	1	04/14/20 18:32	04/15/20 16:16	7440-48-4	
Iron	0.93	mg/L	0.040	0.0097	1	04/14/20 18:32	04/15/20 16:16	7439-89-6	
Lead	ND	mg/L	0.0050	0.000046	1	04/14/20 18:32	04/15/20 16:16	7439-92-1	
Lithium	0.077	mg/L	0.030	0.00078	1	04/14/20 18:32	04/15/20 16:16	7439-93-2	
Molybdenum	6.4	mg/L	0.10	0.0095	10	04/14/20 18:32	04/16/20 13:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/14/20 18:32	04/15/20 16:16	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.000052	1	04/14/20 18:32	04/15/20 16:16	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	04/14/20 07:45	04/14/20 13:45	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	112	mg/L	5.0	5.0	1		04/15/20 15:46		
Alkalinity, Total as CaCO ₃	112	mg/L	5.0	5.0	1		04/15/20 15:46		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1580	mg/L	10.0	10.0	1		04/16/20 11:57		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		04/15/20 12:05	18496-25-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Sample: PMW-04 FILTERED **Lab ID: 2630862002** Collected: 04/10/20 15:50 Received: 04/13/20 10:11 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Chloride	34.1	mg/L	1.0	0.60	1		04/15/20 00:57	16887-00-6	
Fluoride	1.6	mg/L	0.30	0.050	1		04/15/20 00:57	16984-48-8	
Sulfate	894	mg/L	16.0	8.0	16		04/15/20 11:56	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Sample: PMW-04		Lab ID: 2630862003		Collected: 04/10/20 15:22		Received: 04/13/20 10:11		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.99	Std. Units			1		04/13/20 13:34		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	362	mg/L	10.0	1.4	10	04/14/20 18:37	04/16/20 10:52	7440-70-2	M6
Magnesium	33.0	mg/L	0.050	0.011	1	04/14/20 18:37	04/15/20 17:10	7439-95-4	M1
Manganese	0.25	mg/L	0.040	0.0061	1	04/14/20 18:37	04/15/20 17:10	7439-96-5	
Potassium	15.4	mg/L	0.20	0.026	1	04/14/20 18:37	04/15/20 17:10	7440-09-7	M1
Sodium	22.8	mg/L	1.0	0.19	1	04/14/20 18:37	04/15/20 17:10	7440-23-5	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	0.0056	mg/L	0.0030	0.00027	1	04/14/20 18:32	04/15/20 16:21	7440-36-0	
Arsenic	0.88	mg/L	0.0050	0.00035	1	04/14/20 18:32	04/15/20 16:21	7440-38-2	
Barium	0.40	mg/L	0.010	0.00049	1	04/14/20 18:32	04/15/20 16:21	7440-39-3	
Beryllium	0.0029J	mg/L	0.0030	0.000074	1	04/14/20 18:32	04/15/20 16:21	7440-41-7	
Boron	15.4	mg/L	1.0	0.049	10	04/14/20 18:32	04/16/20 13:27	7440-42-8	
Cadmium	0.0027	mg/L	0.0025	0.00011	1	04/14/20 18:32	04/15/20 16:21	7440-43-9	
Chromium	0.016	mg/L	0.010	0.00039	1	04/14/20 18:32	04/15/20 16:21	7440-47-3	
Cobalt	0.0096	mg/L	0.0050	0.00030	1	04/14/20 18:32	04/15/20 16:21	7440-48-4	
Iron	5.4	mg/L	0.040	0.0097	1	04/14/20 18:32	04/15/20 16:21	7439-89-6	
Lead	0.017	mg/L	0.0050	0.000046	1	04/14/20 18:32	04/15/20 16:21	7439-92-1	
Lithium	0.083	mg/L	0.030	0.00078	1	04/14/20 18:32	04/15/20 16:21	7439-93-2	
Molybdenum	6.6	mg/L	0.10	0.0095	10	04/14/20 18:32	04/16/20 13:27	7439-98-7	
Selenium	0.0045J	mg/L	0.010	0.0013	1	04/14/20 18:32	04/15/20 16:21	7782-49-2	
Thallium	0.00097J	mg/L	0.0010	0.000052	1	04/14/20 18:32	04/15/20 16:21	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	mg/L	0.00050	0.00014	1	04/14/20 07:45	04/14/20 13:54	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	109	mg/L	5.0	5.0	1		04/15/20 15:55		
Alkalinity, Total as CaCO ₃	109	mg/L	5.0	5.0	1		04/15/20 15:55		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1420	mg/L	10.0	10.0	1		04/16/20 11:58		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		04/15/20 12:07	18496-25-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Sample: PMW-04		Lab ID: 2630862003		Collected: 04/10/20 15:22		Received: 04/13/20 10:11		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	34.9	mg/L	1.0	0.60	1		04/15/20 01:11	16887-00-6	
Fluoride	1.3	mg/L	0.30	0.050	1		04/15/20 01:11	16984-48-8	
Sulfate	854	mg/L	16.0	8.0	16		04/15/20 12:10	14808-79-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

QC Batch: 45400	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862001

METHOD BLANK: 209488 Matrix: Water

Associated Lab Samples: 2630862001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	04/10/20 14:56	

LABORATORY CONTROL SAMPLE: 209489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 209490 209491

Parameter	Units	209490		209491		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92471969031 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	98	94	75-125	4	20

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 45491 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630862002, 2630862003

METHOD BLANK: 209927 Matrix: Water
Associated Lab Samples: 2630862002, 2630862003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	04/14/20 13:40	

LABORATORY CONTROL SAMPLE: 209928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	85	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 209929 209930

Parameter	Units	2630862002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0023	0.0021	90	84	75-125	7	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 45533 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862002, 2630862003

METHOD BLANK: 210181 Matrix: Water
Associated Lab Samples: 2630862002, 2630862003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/15/20 16:53	
Magnesium	mg/L	ND	0.050	0.011	04/15/20 16:53	
Manganese	mg/L	ND	0.040	0.0061	04/15/20 16:53	
Potassium	mg/L	0.099J	0.20	0.026	04/15/20 16:53	
Sodium	mg/L	ND	1.0	0.19	04/15/20 16:53	

LABORATORY CONTROL SAMPLE: 210182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	
Magnesium	mg/L	1	1.0	105	80-120	
Manganese	mg/L	1	1.0	100	80-120	
Potassium	mg/L	1	1.1	108	80-120	
Sodium	mg/L	1	1.1	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 210190 210191

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2630862003 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Calcium	mg/L	362	1	1	368	365	604	379	75-125	1	20	M6	
Magnesium	mg/L	33.0	1	1	34.3	34.2	130	119	75-125	0	20	M1	
Manganese	mg/L	0.25	1	1	1.2	1.2	95	96	75-125	1	20		
Potassium	mg/L	15.4	1	1	16.9	16.9	152	159	75-125	0	20	M1	
Sodium	mg/L	22.8	1	1	24.1	23.9	125	110	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 45592	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862001

METHOD BLANK: 210512 Matrix: Water
Associated Lab Samples: 2630862001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/16/20 17:18	
Magnesium	mg/L	ND	0.050	0.011	04/16/20 17:18	
Manganese	mg/L	ND	0.040	0.0061	04/16/20 17:18	
Potassium	mg/L	ND	0.20	0.026	04/16/20 17:18	
Sodium	mg/L	ND	1.0	0.19	04/16/20 17:18	

LABORATORY CONTROL SAMPLE: 210513

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	101	80-120	
Magnesium	mg/L	1	1.0	103	80-120	
Manganese	mg/L	1	0.97	97	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 210528 210529

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2630908002	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Calcium	mg/L	258	1	1	262	265	333	619	75-125	1	20	M1	
Magnesium	mg/L	25.6	1	1	27.0	27.4	138	171	75-125	1	20	M1	
Manganese	mg/L	1.1	1	1	2.0	2.1	96	99	75-125	2	20		
Potassium	mg/L	8.1	1	1	9.1	9.2	107	118	75-125	1	20		
Sodium	mg/L	43.7	1	1	45.1	45.6	134	185	75-125	1	20	M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 45464 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862001

METHOD BLANK: 209861 Matrix: Water
Associated Lab Samples: 2630862001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	04/13/20 16:42	
Arsenic	mg/L	ND	0.0050	0.00035	04/13/20 16:42	
Barium	mg/L	ND	0.010	0.00049	04/13/20 16:42	
Beryllium	mg/L	ND	0.0030	0.000074	04/13/20 16:42	
Boron	mg/L	ND	0.10	0.0049	04/13/20 16:42	
Cadmium	mg/L	ND	0.0025	0.00011	04/13/20 16:42	
Chromium	mg/L	ND	0.010	0.00039	04/13/20 16:42	
Cobalt	mg/L	ND	0.0050	0.00030	04/13/20 16:42	
Iron	mg/L	ND	0.040	0.0097	04/13/20 16:42	
Lead	mg/L	ND	0.0050	0.000046	04/13/20 16:42	
Lithium	mg/L	ND	0.030	0.00078	04/13/20 16:42	
Molybdenum	mg/L	ND	0.010	0.00095	04/13/20 16:42	
Selenium	mg/L	ND	0.010	0.0013	04/13/20 16:42	
Thallium	mg/L	ND	0.0010	0.000052	04/13/20 16:42	

LABORATORY CONTROL SAMPLE: 209862

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	112	80-120	
Arsenic	mg/L	0.1	0.11	106	80-120	
Barium	mg/L	0.1	0.10	105	80-120	
Beryllium	mg/L	0.1	0.10	104	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.11	107	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.11	105	80-120	
Iron	mg/L	1	1.0	105	80-120	
Lead	mg/L	0.1	0.11	105	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.11	107	80-120	
Selenium	mg/L	0.1	0.10	105	80-120	
Thallium	mg/L	0.1	0.11	107	80-120	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Parameter	Units	209904		209905		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630907001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	113	109	75-125	4	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	105	101	75-125	3	20		
Barium	mg/L	0.18	0.1	0.1	0.28	0.28	99	98	75-125	1	20		
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Boron	mg/L	0.74	1	1	1.8	1.9	109	111	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	105	101	75-125	4	20		
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	105	101	75-125	4	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	3	20		
Iron	mg/L	0.10J	1	1	1.1	1.1	103	99	75-125	4	20		
Lead	mg/L	0.00026J	0.1	0.1	0.10	0.097	100	97	75-125	4	20		
Lithium	mg/L	0.20	0.1	0.1	0.30	0.31	102	108	75-125	2	20		
Molybdenum	mg/L	0.014	0.1	0.1	0.13	0.12	113	107	75-125	5	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.098	96	98	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	75-125	3	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 45531 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862002, 2630862003

METHOD BLANK: 210136 Matrix: Water
Associated Lab Samples: 2630862002, 2630862003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	04/15/20 16:04	
Arsenic	mg/L	ND	0.0050	0.00035	04/15/20 16:04	
Barium	mg/L	ND	0.010	0.00049	04/15/20 16:04	
Beryllium	mg/L	ND	0.0030	0.000074	04/15/20 16:04	
Boron	mg/L	ND	0.10	0.0049	04/15/20 16:04	
Cadmium	mg/L	ND	0.0025	0.00011	04/15/20 16:04	
Chromium	mg/L	ND	0.010	0.00039	04/15/20 16:04	
Cobalt	mg/L	ND	0.0050	0.00030	04/15/20 16:04	
Iron	mg/L	ND	0.040	0.0097	04/15/20 16:04	
Lead	mg/L	ND	0.0050	0.000046	04/15/20 16:04	
Lithium	mg/L	ND	0.030	0.00078	04/15/20 16:04	
Molybdenum	mg/L	ND	0.010	0.00095	04/15/20 16:04	
Selenium	mg/L	ND	0.010	0.0013	04/15/20 16:04	
Thallium	mg/L	ND	0.0010	0.000052	04/15/20 16:04	

LABORATORY CONTROL SAMPLE: 210137

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.10	101	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	1.1	105	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Iron	mg/L	1	1.0	102	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 210192		210193		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2630818017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	105	104	75-125	2	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.099	99	99	75-125	1	20		
Barium	mg/L	0.027	0.1	0.1	0.13	0.13	100	99	75-125	1	20		
Beryllium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	1	20		
Boron	mg/L	0.28	1	1	1.2	1.2	92	91	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.098	0.096	98	96	75-125	3	20		
Chromium	mg/L	0.00058J	0.1	0.1	0.10	0.10	102	101	75-125	2	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20		
Iron	mg/L	0.49	1	1	1.6	1.5	106	101	75-125	3	20		
Lead	mg/L	0.00017J	0.1	0.1	0.10	0.099	101	99	75-125	2	20		
Lithium	mg/L	ND	0.1	0.1	0.10	0.098	99	98	75-125	1	20		
Molybdenum	mg/L	0.0056J	0.1	0.1	0.10	0.10	97	95	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.093	0.095	93	95	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 536298 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630862001, 2630862002, 2630862003

METHOD BLANK: 2860774 Matrix: Water
Associated Lab Samples: 2630862001, 2630862002, 2630862003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	04/15/20 15:22	
Alkalinity, Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	04/15/20 15:22	

LABORATORY CONTROL SAMPLE: 2860775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.9	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860776 2860777

Parameter	Units	2630862001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	32.5	50	50	52.0	52.4	39	40	80-120	1	25	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860778 2860779

Parameter	Units	92472992067 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	12.9	50	50	67.1	67.3	108	109	80-120	0	25	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

QC Batch: 45512	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862001

LABORATORY CONTROL SAMPLE: 209985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	379	95	84-108	

SAMPLE DUPLICATE: 209986

Parameter	Units	2630821024 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	223	244	9	10	

SAMPLE DUPLICATE: 209987

Parameter	Units	92473254002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	17.0	18.0	6	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

QC Batch: 45568

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630862002, 2630862003

LABORATORY CONTROL SAMPLE: 210421

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	385	96	84-108	

SAMPLE DUPLICATE: 210422

Parameter	Units	2630909002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	55.0	61.0	10	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 536291 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630862001, 2630862002, 2630862003

METHOD BLANK: 2860729 Matrix: Water
Associated Lab Samples: 2630862001, 2630862002, 2630862003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	04/15/20 11:58	

LABORATORY CONTROL SAMPLE: 2860730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.47	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860731 2860732

Parameter	Units	2860731		2860732		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92473428001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.59	0.59	116	116	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860733 2860734

Parameter	Units	2860733		2860734		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2630862001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.66	0.66	129	129	80-120	0	10 M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

QC Batch: 536191 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630862001, 2630862002, 2630862003

METHOD BLANK: 2860515 Matrix: Water
Associated Lab Samples: 2630862001, 2630862002, 2630862003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/14/20 23:47	
Fluoride	mg/L	ND	0.10	0.050	04/14/20 23:47	
Sulfate	mg/L	ND	1.0	0.50	04/14/20 23:47	

LABORATORY CONTROL SAMPLE: 2860516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.2	104	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	
Sulfate	mg/L	50	52.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860517 2860518

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630862001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	39.0	50	50	50	89.5	89.4	101	101	90-110	0	10	
Fluoride	mg/L	0.34	2.5	2.5	2.5	3.8	3.9	137	141	90-110	2	10	M1
Sulfate	mg/L	920	50	50	50	828	886	-184	-68	90-110	7	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2860519 2860520

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92472992074 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	5.9	50	50	50	57.2	57.1	103	102	90-110	0	10	
Fluoride	mg/L	0.36	2.5	2.5	2.5	3.0	3.0	104	104	90-110	0	10	
Sulfate	mg/L	14.4	50	50	50	65.4	65.1	102	101	90-110	0	10	

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QUALIFIERS

Project: HAMMOND AP-2 PMW NON-ROUTINE

Pace Project No.: 2630862

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 PMW NON-ROUTINE
Pace Project No.: 2630862

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2630862001	PMW-03				
2630862002	PMW-04 FILTERED				
2630862003	PMW-04				
2630862001	PMW-03	EPA 3010A	45592	EPA 6010D	45599
2630862002	PMW-04 FILTERED	EPA 3010A	45533	EPA 6010D	45546
2630862003	PMW-04	EPA 3010A	45533	EPA 6010D	45546
2630862001	PMW-03	EPA 3005A	45464	EPA 6020B	45489
2630862002	PMW-04 FILTERED	EPA 3005A	45531	EPA 6020B	45544
2630862003	PMW-04	EPA 3005A	45531	EPA 6020B	45544
2630862001	PMW-03	EPA 7470A	45400	EPA 7470A	45413
2630862002	PMW-04 FILTERED	EPA 7470A	45491	EPA 7470A	45510
2630862003	PMW-04	EPA 7470A	45491	EPA 7470A	45510
2630862001	PMW-03	SM 2320B-2011	536298		
2630862002	PMW-04 FILTERED	SM 2320B-2011	536298		
2630862003	PMW-04	SM 2320B-2011	536298		
2630862001	PMW-03	SM 2540C	45512		
2630862002	PMW-04 FILTERED	SM 2540C	45568		
2630862003	PMW-04	SM 2540C	45568		
2630862001	PMW-03	SM 4500-S2D-2011	536291		
2630862002	PMW-04 FILTERED	SM 4500-S2D-2011	536291		
2630862003	PMW-04	SM 4500-S2D-2011	536291		
2630862001	PMW-03	EPA 300.0 Rev 2.1 1993	536191		
2630862002	PMW-04 FILTERED	EPA 300.0 Rev 2.1 1993	536191		
2630862003	PMW-04	EPA 300.0 Rev 2.1 1993	536191		

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GA Power	Report To:	SCS Contacts	Attention:	Southern Co.
Address:	Atlanta, GA	Copy To:	Geosyntec Contacts	Company Name:	
Email To:	SCS Contacts	Purchase Order No.:		Address:	
Phone:		Project Name:	AP-2 PMW Non-Routine Sampling	Pace Quote	
Requested Due Date/TAT:	10 Day	Project Number:	GW6581B	Pace Project Manager:	Kevin Herring
				Pace Profile #:	2928-5
REGULATORY AGENCY			REGULATORY AGENCY		
<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER			<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER		
Site Location			STATE: GA		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)						Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.		
					DATE	TIME					DATE	TIME	Chloride, Fluoride, Sulfate	TDS	Metals 6010/6020*	RAD 226/228			Sulfide 4500S2D	Total Alkalinity, Bicarbonate 2320B
1	PMW-03	DW, WT, WW, P, SL, OL, WP, AR, OT, TS	WT	G	4/8	1201	22	5	2	3		X	X	X	X	X	X	N	N	pH = 5.59
2	PMW-04		WT	G								X	X	X	X	X	X			
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS

Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

Metals: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Fe, Pb, Li, Hg, Mg, Mn, Mo, Ni, K, Se, Tl

RELINQUISHED BY / AFFILIATION

Chad Russo / Pace
Mollie McWhorter / Geosyntec
Katherine Pace

DATE **TIME**

4/8/20 1750
4/9/20 1033
4/9/20 1337

ACCEPTED BY / AFFILIATION

Mollie McWhorter / Pace
Katherine Pace

DATE **TIME**

4/8/20 1750
4/9/20 1033
4/9/20 1337

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russo
SIGNATURE of SAMPLER: Chad Russo

DATE Signed (MM/DD/YY): 4/8/2020

Temp in °C
Received on Ice (Y/N)
Custody Sealed Cooler (Y/N)
Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Sample Condition Upon Receipt

Client Name: GA Power Project # _____

WO#: **2630862**

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

PH: KH Due Date: 04/16/20
CLIENT: 26-GA Power

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used JHR233 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.5 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: [Signature]

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution: _____ Field Data Required? Y / N
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

Sample Condition Upon Receipt

Phase Analytical

Client Name: GA Power Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no

Seals intact: yes no

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other Plastic Bag

Thermometer Used: TH8233

Cooler Temperature: 8.3

Temp should be above freezing to 8°C

Biological Tissue is Frozen: Yes No

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Date and initials of person examining contents: _____

Comments: _____

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.
Exceptions: VOA, coliform, TOC, O&G, WPCRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	16.
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	17.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	18.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	19.
Trip Blank Custody Seals Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	20.
Face Trip Blank Lot # (if purchased):		21.

Client Notification/Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Field Data Required? Y N

Project Manager Review: _____

Date: _____

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

F-ALLC003rev.3, 11 September 2006

Document Name: Bottle Identification Form (BIF)	Document No.:
Document Issued: March 14, 2019	F-CAR-CS-043-Rev.00
Page 1 of 1	Issuing Authority: Pace Carolinas Quality Office

Project #

1071

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
 Exceptions: VOA, Coliform, TOC, Oil and Grease, DBO/015 (water), DOC, LMG

• Bottom half of box is to list number of bottle

Item	Matrix	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 ml Plastic Unpreserved (N/A) (C)													
BP4U-250 ml Plastic Unpreserved (N/A)													
BP2U-500 ml Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)													
BP4S-125 ml Plastic H2SO4 (pH < 2) (C-)													
BP3W-250 ml Plastic HNO3 (pH < 2)													
BP4C-125 ml Plastic NaOH (pH > 12) (C-)													
WGFL-Wide-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (C-)													
AG1H-1 liter Amber HCl (pH < 2)													
AG3U-250 ml Amber Unpreserved (N/A) (C-)													
AG1S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 ml Amber H2SO4 (pH < 2)													
AG3A(DG3A)-250 ml Amber NH4Cl (N/A)(C-)													
DG9H-40 ml VOA HQ (N/A)													
VG9T-40 ml VOA Na2S2O3 (N/A)													
VG9U-40 ml VOA UHQ (N/A)													
DG9P-40 ml VOA H3PO4 (N/A)													
VOAK (6 vials per kit)-50SS Lit (N/A)													
V/GK (3 vials per kit)-VPH/Gas Lit (N/A)													
SP5T-125 ml Sterile Plastic (N/A - 1ab)													
SP7T-250 ml Sterile Plastic (N/A - 1ab)													
BP3A-250 ml Plastic (NH4)2SO4 (9-3-9-7)													
AG9U-100 ml Amber Unpreserved vials (N/A)													
VG9U-20 ml Stabilization vials (N/A)													

pH Adjustment Log for Preserved Samples

Lot #	Amount of Preservative added	Time preservation adjusted	Date preservation adjusted	pH upon receipt	Type of Preservative	Sample ID

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 of hold, incorrect preservative, out of temp./incorrect containers.

July 01, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 18, 2020 and June 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482649001	MW-21D	Water	06/17/20 09:30	06/18/20 10:37
92482649002	MW-33	Water	06/17/20 16:34	06/18/20 10:37
92482649003	MW-35	Water	06/18/20 11:52	06/19/20 13:10
92482649004	FB-02	Water	06/18/20 17:50	06/19/20 13:10
92482649005	MW-34D	Water	06/18/20 18:05	06/19/20 13:10
92482649006	MW-36D	Water	06/18/20 10:05	06/19/20 13:10
92482649007	MW-37D	Water	06/18/20 13:15	06/19/20 13:10
92482649008	MW-37D, FILTERED	Water	06/18/20 13:30	06/19/20 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92482649001	MW-21D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649002	MW-33	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649003	MW-35	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649004	FB-02	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649005	MW-34D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649006	MW-36D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649007	MW-37D	EPA 6010D	DRB	6

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649008	MW-37D, FILTERED	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649001	MW-21D					
	pH	6.47	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	434	mg/L	10.0	06/23/20 12:37	
EPA 6010D	Iron	22.3	mg/L	0.040	06/22/20 16:02	
EPA 6010D	Magnesium	71.7	mg/L	0.050	06/22/20 16:02	
EPA 6010D	Manganese	1.3	mg/L	0.040	06/22/20 16:02	
EPA 6010D	Potassium	1.1	mg/L	0.20	06/22/20 16:02	
EPA 6010D	Sodium	15.8	mg/L	1.0	06/22/20 16:02	
EPA 6020B	Barium	0.054	mg/L	0.010	06/19/20 20:18	
EPA 6020B	Boron	5.8	mg/L	0.10	06/19/20 20:18	
EPA 6020B	Chromium	0.00057J	mg/L	0.010	06/19/20 20:18	
EPA 6020B	Lithium	0.023J	mg/L	0.030	06/19/20 20:18	
EPA 6020B	Molybdenum	0.019	mg/L	0.010	06/19/20 20:18	
SM 2450C-2011	Total Dissolved Solids	2100	mg/L	10.0	06/19/20 18:08	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	41.2	mg/L	5.0	06/29/20 18:41	
SM 2320B-2011	Alkalinity, Total as CaCO3	41.2	mg/L	5.0	06/29/20 18:41	
EPA 300.0 Rev 2.1 1993	Chloride	223	mg/L	18.0	06/25/20 10:16	
EPA 300.0 Rev 2.1 1993	Sulfate	901	mg/L	18.0	06/25/20 10:16	
92482649002	MW-33					
	pH	4.36	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	561	mg/L	10.0	06/23/20 12:41	
EPA 6010D	Iron	1.2	mg/L	0.040	06/22/20 16:06	
EPA 6010D	Magnesium	55.9	mg/L	0.050	06/22/20 16:06	
EPA 6010D	Manganese	4.5	mg/L	0.040	06/22/20 16:06	
EPA 6010D	Potassium	11.1	mg/L	0.20	06/22/20 16:06	
EPA 6010D	Sodium	10.8	mg/L	1.0	06/22/20 16:06	
EPA 6020B	Arsenic	0.0031J	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Barium	0.024	mg/L	0.010	06/19/20 20:24	
EPA 6020B	Beryllium	0.00099J	mg/L	0.0030	06/19/20 20:24	
EPA 6020B	Boron	10.3	mg/L	1.0	06/23/20 12:44	
EPA 6020B	Cadmium	0.00021J	mg/L	0.0025	06/19/20 20:24	
EPA 6020B	Cobalt	0.053	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Lithium	0.00097J	mg/L	0.030	06/19/20 20:24	
EPA 6020B	Selenium	0.014	mg/L	0.010	06/19/20 20:24	
EPA 6020B	Thallium	0.00028J	mg/L	0.0010	06/19/20 20:24	
SM 2450C-2011	Total Dissolved Solids	2540	mg/L	10.0	06/19/20 18:09	
EPA 300.0 Rev 2.1 1993	Chloride	250	mg/L	24.0	06/25/20 10:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.25	mg/L	0.10	06/25/20 06:25	
EPA 300.0 Rev 2.1 1993	Sulfate	1210	mg/L	24.0	06/25/20 10:31	
92482649003	MW-35					
	pH	5.46	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	517	mg/L	10.0	06/23/20 12:46	M6
EPA 6010D	Iron	2.4	mg/L	0.040	06/22/20 17:10	
EPA 6010D	Magnesium	71.5	mg/L	0.050	06/22/20 17:10	M1
EPA 6010D	Manganese	10.6	mg/L	0.040	06/22/20 17:10	M1
EPA 6010D	Potassium	8.3	mg/L	0.20	06/22/20 17:10	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649003	MW-35					
EPA 6010D	Sodium	11.5	mg/L	1.0	06/22/20 17:10	
EPA 6020B	Arsenic	0.0050J	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Barium	0.029	mg/L	0.010	06/23/20 13:50	
EPA 6020B	Beryllium	0.00032J	mg/L	0.0030	06/23/20 13:50	
EPA 6020B	Boron	11.9	mg/L	1.0	06/23/20 16:53	
EPA 6020B	Cadmium	0.00053J	mg/L	0.0025	06/23/20 13:50	
EPA 6020B	Cobalt	0.091	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Lead	0.00016J	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Lithium	0.0046J	mg/L	0.030	06/23/20 13:50	
EPA 6020B	Selenium	0.014	mg/L	0.010	06/23/20 13:50	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	06/23/20 13:50	
SM 2450C-2011	Total Dissolved Solids	2310	mg/L	10.0	06/22/20 17:35	
EPA 300.0 Rev 2.1 1993	Chloride	229	mg/L	23.0	06/25/20 10:45	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	06/25/20 06:39	
EPA 300.0 Rev 2.1 1993	Sulfate	1160	mg/L	23.0	06/25/20 10:45	
92482649004	FB-02					
EPA 6010D	Calcium	0.16J	mg/L	1.0	06/22/20 17:26	
EPA 6010D	Magnesium	0.026J	mg/L	0.050	06/22/20 17:26	B
EPA 6020B	Boron	0.041J	mg/L	0.10	06/23/20 13:55	
92482649005	MW-34D					
	pH	7.35	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	584	mg/L	10.0	06/23/20 12:58	
EPA 6010D	Iron	1.8	mg/L	0.040	06/22/20 17:31	
EPA 6010D	Magnesium	59.3	mg/L	0.050	06/22/20 17:31	
EPA 6010D	Manganese	4.7	mg/L	0.040	06/22/20 17:31	
EPA 6010D	Potassium	10.8	mg/L	0.20	06/22/20 17:31	
EPA 6010D	Sodium	16.0	mg/L	1.0	06/22/20 17:31	
EPA 6020B	Arsenic	0.0032J	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Barium	0.044	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	06/23/20 14:22	
EPA 6020B	Boron	9.4	mg/L	0.10	06/23/20 14:22	
EPA 6020B	Chromium	0.0059J	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Cobalt	0.011	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Lead	0.00087J	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	06/23/20 14:22	
EPA 6020B	Selenium	0.0025J	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Thallium	0.00015J	mg/L	0.0010	06/23/20 14:22	
SM 2450C-2011	Total Dissolved Solids	2320	mg/L	10.0	06/22/20 17:36	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	96.5	mg/L	5.0	06/30/20 15:52	
SM 2320B-2011	Alkalinity, Total as CaCO3	96.5	mg/L	5.0	06/30/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	259	mg/L	22.0	06/26/20 08:16	
EPA 300.0 Rev 2.1 1993	Fluoride	0.082J	mg/L	0.10	06/25/20 22:36	
EPA 300.0 Rev 2.1 1993	Sulfate	1100	mg/L	22.0	06/26/20 08:16	
92482649006	MW-36D					
	pH	6.45	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	65.2	mg/L	1.0	06/22/20 17:43	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649006	MW-36D					
EPA 6010D	Iron	0.58	mg/L	0.040	06/22/20 17:43	
EPA 6010D	Magnesium	7.7	mg/L	0.050	06/22/20 17:43	
EPA 6010D	Manganese	0.055	mg/L	0.040	06/22/20 17:43	
EPA 6010D	Potassium	0.47	mg/L	0.20	06/22/20 17:43	
EPA 6010D	Sodium	7.2	mg/L	1.0	06/22/20 17:43	
EPA 6020B	Arsenic	0.00046J	mg/L	0.0050	06/23/20 14:28	
EPA 6020B	Barium	0.15	mg/L	0.010	06/23/20 14:28	
EPA 6020B	Boron	0.067J	mg/L	0.10	06/23/20 14:28	
EPA 6020B	Chromium	0.00045J	mg/L	0.010	06/23/20 14:28	
EPA 6020B	Lithium	0.0087J	mg/L	0.030	06/23/20 14:28	
SM 2450C-2011	Total Dissolved Solids	237	mg/L	10.0	06/22/20 17:37	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	06/30/20 16:02	
SM 2320B-2011	Alkalinity, Total as CaCO3	164	mg/L	5.0	06/30/20 16:02	
EPA 300.0 Rev 2.1 1993	Chloride	2.3	mg/L	1.0	06/25/20 22:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	06/25/20 22:50	
EPA 300.0 Rev 2.1 1993	Sulfate	50.5	mg/L	1.0	06/25/20 22:50	
92482649007	MW-37D					
	pH	7.78	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	165	mg/L	1.0	06/22/20 17:48	
EPA 6010D	Iron	3.4	mg/L	0.040	06/22/20 17:48	
EPA 6010D	Magnesium	30.5	mg/L	0.050	06/22/20 17:48	
EPA 6010D	Manganese	0.15	mg/L	0.040	06/22/20 17:48	
EPA 6010D	Potassium	2.9	mg/L	0.20	06/22/20 17:48	
EPA 6010D	Sodium	59.6	mg/L	1.0	06/22/20 17:48	
EPA 6020B	Arsenic	0.0021J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Barium	0.19	mg/L	0.010	06/23/20 14:33	
EPA 6020B	Beryllium	0.00012J	mg/L	0.0030	06/23/20 14:33	
EPA 6020B	Boron	0.14	mg/L	0.10	06/23/20 14:33	
EPA 6020B	Chromium	0.0048J	mg/L	0.010	06/23/20 14:33	
EPA 6020B	Cobalt	0.0015J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Lithium	0.038J	mg/L	0.030	06/23/20 14:33	
EPA 6020B	Molybdenum	0.023	mg/L	0.010	06/23/20 14:33	
SM 2450C-2011	Total Dissolved Solids	888	mg/L	10.0	06/22/20 17:37	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	06/30/20 16:22	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	06/30/20 16:22	
EPA 300.0 Rev 2.1 1993	Chloride	151	mg/L	6.0	06/26/20 08:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	06/25/20 23:05	
EPA 300.0 Rev 2.1 1993	Sulfate	286	mg/L	6.0	06/26/20 08:31	
92482649008	MW-37D, FILTERED					
	pH	7.78	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	168	mg/L	1.0	06/22/20 17:52	
EPA 6010D	Iron	0.087	mg/L	0.040	06/22/20 17:52	
EPA 6010D	Magnesium	30.6	mg/L	0.050	06/22/20 17:52	
EPA 6010D	Manganese	0.12	mg/L	0.040	06/22/20 17:52	
EPA 6010D	Potassium	2.0	mg/L	0.20	06/22/20 17:52	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482649008	MW-37D, FILTERED					
EPA 6010D	Sodium	60.9	mg/L	1.0	06/22/20 17:52	
EPA 6020B	Arsenic	0.0016J	mg/L	0.0050	06/23/20 14:39	
EPA 6020B	Barium	0.17	mg/L	0.010	06/23/20 14:39	
EPA 6020B	Boron	0.14	mg/L	0.10	06/23/20 14:39	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	06/23/20 14:39	
EPA 6020B	Lead	0.000051J	mg/L	0.0050	06/23/20 14:39	
EPA 6020B	Lithium	0.036J	mg/L	0.030	06/23/20 14:39	
EPA 6020B	Molybdenum	0.022	mg/L	0.010	06/23/20 14:39	
SM 2450C-2011	Total Dissolved Solids	879	mg/L	10.0	06/22/20 17:38	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	06/30/20 16:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	06/30/20 16:32	
EPA 300.0 Rev 2.1 1993	Chloride	160	mg/L	6.0	06/29/20 12:12	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	06/27/20 15:38	
EPA 300.0 Rev 2.1 1993	Sulfate	292	mg/L	6.0	06/29/20 12:12	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-21D **Lab ID: 92482649001** Collected: 06/17/20 09:30 Received: 06/18/20 10:37 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.47	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	434	mg/L	10.0	1.4	10	06/19/20 14:00	06/23/20 12:37	7440-70-2	
Iron	22.3	mg/L	0.040	0.015	1	06/19/20 14:00	06/22/20 16:02	7439-89-6	
Magnesium	71.7	mg/L	0.050	0.011	1	06/19/20 14:00	06/22/20 16:02	7439-95-4	
Manganese	1.3	mg/L	0.040	0.0061	1	06/19/20 14:00	06/22/20 16:02	7439-96-5	
Potassium	1.1	mg/L	0.20	0.026	1	06/19/20 14:00	06/22/20 16:02	7440-09-7	
Sodium	15.8	mg/L	1.0	0.19	1	06/19/20 14:00	06/22/20 16:02	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	06/19/20 12:30	06/19/20 20:18	7440-38-2	
Barium	0.054	mg/L	0.010	0.00049	1	06/19/20 12:30	06/19/20 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/19/20 12:30	06/19/20 20:18	7440-41-7	
Boron	5.8	mg/L	0.10	0.0049	1	06/19/20 12:30	06/19/20 20:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/19/20 12:30	06/19/20 20:18	7440-43-9	
Chromium	0.00057J	mg/L	0.010	0.00039	1	06/19/20 12:30	06/19/20 20:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/19/20 12:30	06/19/20 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/19/20 12:30	06/19/20 20:18	7439-92-1	
Lithium	0.023J	mg/L	0.030	0.00078	1	06/19/20 12:30	06/19/20 20:18	7439-93-2	
Molybdenum	0.019	mg/L	0.010	0.00095	1	06/19/20 12:30	06/19/20 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/19/20 12:30	06/19/20 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/19/20 12:30	06/19/20 20:18	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2100	mg/L	10.0	10.0	1		06/19/20 18:08		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	41.2	mg/L	5.0	5.0	1		06/29/20 18:41		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:41		
Alkalinity, Total as CaCO ₃	41.2	mg/L	5.0	5.0	1		06/29/20 18:41		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:54	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	223	mg/L	18.0	10.8	18		06/25/20 10:16	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/25/20 05:41	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-21D		Lab ID: 92482649001		Collected: 06/17/20 09:30	Received: 06/18/20 10:37	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	901	mg/L	18.0	9.0	18		06/25/20 10:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-33		Lab ID: 92482649002		Collected: 06/17/20 16:34		Received: 06/18/20 10:37		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.36	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	561	mg/L	10.0	1.4	10	06/19/20 14:00	06/23/20 12:41	7440-70-2	
Iron	1.2	mg/L	0.040	0.015	1	06/19/20 14:00	06/22/20 16:06	7439-89-6	
Magnesium	55.9	mg/L	0.050	0.011	1	06/19/20 14:00	06/22/20 16:06	7439-95-4	
Manganese	4.5	mg/L	0.040	0.0061	1	06/19/20 14:00	06/22/20 16:06	7439-96-5	
Potassium	11.1	mg/L	0.20	0.026	1	06/19/20 14:00	06/22/20 16:06	7440-09-7	
Sodium	10.8	mg/L	1.0	0.19	1	06/19/20 14:00	06/22/20 16:06	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0031J	mg/L	0.0050	0.00035	1	06/19/20 12:30	06/19/20 20:24	7440-38-2	
Barium	0.024	mg/L	0.010	0.00049	1	06/19/20 12:30	06/19/20 20:24	7440-39-3	
Beryllium	0.00099J	mg/L	0.0030	0.000074	1	06/19/20 12:30	06/19/20 20:24	7440-41-7	
Boron	10.3	mg/L	1.0	0.049	10	06/19/20 12:30	06/23/20 12:44	7440-42-8	
Cadmium	0.00021J	mg/L	0.0025	0.00011	1	06/19/20 12:30	06/19/20 20:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/19/20 12:30	06/19/20 20:24	7440-47-3	
Cobalt	0.053	mg/L	0.0050	0.00030	1	06/19/20 12:30	06/19/20 20:24	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	06/19/20 12:30	06/19/20 20:24	7439-92-1	
Lithium	0.00097J	mg/L	0.030	0.00078	1	06/19/20 12:30	06/19/20 20:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/19/20 12:30	06/19/20 20:24	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	06/19/20 12:30	06/19/20 20:24	7782-49-2	
Thallium	0.00028J	mg/L	0.0010	0.000052	1	06/19/20 12:30	06/19/20 20:24	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2540	mg/L	10.0	10.0	1		06/19/20 18:09		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:57	18496-25-8	M1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	250	mg/L	24.0	14.4	24		06/25/20 10:31	16887-00-6	
Fluoride	0.25	mg/L	0.10	0.050	1		06/25/20 06:25	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-33		Lab ID: 92482649002		Collected: 06/17/20 16:34	Received: 06/18/20 10:37	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1210	mg/L	24.0	12.0	24		06/25/20 10:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-35		Lab ID: 92482649003		Collected: 06/18/20 11:52		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.46	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	517	mg/L	10.0	1.4	10	06/22/20 14:08	06/23/20 12:46	7440-70-2	M6
Iron	2.4	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:10	7439-89-6	
Magnesium	71.5	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:10	7439-95-4	M1
Manganese	10.6	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:10	7439-96-5	M1
Potassium	8.3	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:10	7440-09-7	
Sodium	11.5	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:10	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0050J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 13:50	7440-38-2	
Barium	0.029	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 13:50	7440-39-3	
Beryllium	0.00032J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 13:50	7440-41-7	
Boron	11.9	mg/L	1.0	0.049	10	06/22/20 17:17	06/23/20 16:53	7440-42-8	
Cadmium	0.00053J	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 13:50	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 13:50	7440-47-3	
Cobalt	0.091	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 13:50	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 13:50	7439-92-1	
Lithium	0.0046J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 13:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 13:50	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 13:50	7782-49-2	
Thallium	0.00013J	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 13:50	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2310	mg/L	10.0	10.0	1		06/22/20 17:35		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:58	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	229	mg/L	23.0	13.8	23		06/25/20 10:45	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		06/25/20 06:39	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-35		Lab ID: 92482649003		Collected: 06/18/20 11:52		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1160	mg/L	23.0	11.5	23		06/25/20 10:45	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: FB-02		Lab ID: 92482649004		Collected: 06/18/20 17:50		Received: 06/19/20 13:10		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	0.16J	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:26	7440-70-2		
Iron	ND	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:26	7439-89-6		
Magnesium	0.026J	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:26	7439-95-4	B	
Manganese	ND	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:26	7439-96-5		
Potassium	ND	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:26	7440-09-7		
Sodium	ND	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:26	7440-23-5		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 13:55	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 13:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 13:55	7440-41-7		
Boron	0.041J	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 13:55	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 13:55	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 13:55	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 13:55	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 13:55	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 13:55	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 13:55	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 13:55	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 13:55	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/22/20 17:35			
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:59	18496-25-8		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		06/25/20 22:21	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		06/25/20 22:21	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		06/25/20 22:21	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-34D Lab ID: 92482649005 Collected: 06/18/20 18:05 Received: 06/19/20 13:10 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.35	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	584	mg/L	10.0	1.4	10	06/22/20 14:08	06/23/20 12:58	7440-70-2	
Iron	1.8	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:31	7439-89-6	
Magnesium	59.3	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:31	7439-95-4	
Manganese	4.7	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:31	7439-96-5	
Potassium	10.8	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:31	7440-09-7	
Sodium	16.0	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:31	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0032J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:22	7440-38-2	
Barium	0.044	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:22	7440-39-3	
Beryllium	0.00015J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:22	7440-41-7	
Boron	9.4	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:22	7440-43-9	
Chromium	0.0059J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:22	7440-47-3	
Cobalt	0.011	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:22	7440-48-4	
Lead	0.00087J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:22	7439-92-1	
Lithium	0.0021J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:22	7439-98-7	
Selenium	0.0025J	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:22	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:22	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2320	mg/L	10.0	10.0	1		06/22/20 17:36		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	96.5	mg/L	5.0	5.0	1		06/30/20 15:52		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:52		
Alkalinity, Total as CaCO ₃	96.5	mg/L	5.0	5.0	1		06/30/20 15:52		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:59	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	259	mg/L	22.0	13.2	22		06/26/20 08:16	16887-00-6	
Fluoride	0.082J	mg/L	0.10	0.050	1		06/25/20 22:36	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-34D		Lab ID: 92482649005		Collected: 06/18/20 18:05	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1100	mg/L	22.0	11.0	22		06/26/20 08:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-36D		Lab ID: 92482649006		Collected: 06/18/20 10:05		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.45	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	65.2	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:43	7440-70-2	
Iron	0.58	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:43	7439-89-6	
Magnesium	7.7	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:43	7439-95-4	
Manganese	0.055	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:43	7439-96-5	
Potassium	0.47	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:43	7440-09-7	
Sodium	7.2	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:43	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.00046J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:28	7440-38-2	
Barium	0.15	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:28	7440-41-7	
Boron	0.067J	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:28	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:28	7440-43-9	
Chromium	0.00045J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:28	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:28	7439-92-1	
Lithium	0.0087J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:28	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:28	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:28	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	237	mg/L	10.0	10.0	1		06/22/20 17:37		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	164	mg/L	5.0	5.0	1		06/30/20 16:02		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:02		
Alkalinity, Total as CaCO ₃	164	mg/L	5.0	5.0	1		06/30/20 16:02		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	2.3	mg/L	1.0	0.60	1		06/25/20 22:50	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		06/25/20 22:50	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-36D		Lab ID: 92482649006		Collected: 06/18/20 10:05	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	50.5	mg/L	1.0	0.50	1		06/25/20 22:50	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-37D		Lab ID: 92482649007		Collected: 06/18/20 13:15		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.78	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	165	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:48	7440-70-2	
Iron	3.4	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:48	7439-89-6	
Magnesium	30.5	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:48	7439-95-4	
Manganese	0.15	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:48	7439-96-5	
Potassium	2.9	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:48	7440-09-7	
Sodium	59.6	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:48	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0021J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:33	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:33	7440-39-3	
Beryllium	0.00012J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:33	7440-41-7	
Boron	0.14	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:33	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:33	7440-43-9	
Chromium	0.0048J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:33	7440-47-3	
Cobalt	0.0015J	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:33	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:33	7439-92-1	
Lithium	0.038J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:33	7439-93-2	
Molybdenum	0.023	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:33	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:33	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	888	mg/L	10.0	10.0	1		06/22/20 17:37		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		06/30/20 16:22		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:22		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		06/30/20 16:22		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	151	mg/L	6.0	3.6	6		06/26/20 08:31	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		06/25/20 23:05	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-37D		Lab ID: 92482649007		Collected: 06/18/20 13:15	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	286	mg/L	6.0	3.0	6		06/26/20 08:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-37D, FILTERED **Lab ID: 92482649008** Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.78	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	168	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:52	7440-70-2	
Iron	0.087	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:52	7439-89-6	
Magnesium	30.6	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:52	7439-95-4	
Manganese	0.12	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:52	7439-96-5	
Potassium	2.0	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:52	7440-09-7	
Sodium	60.9	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:52	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0016J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:39	7440-38-2	
Barium	0.17	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:39	7440-41-7	
Boron	0.14	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:39	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:39	7440-48-4	
Lead	0.000051J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:39	7439-92-1	
Lithium	0.036J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:39	7439-93-2	
Molybdenum	0.022	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:39	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	879	mg/L	10.0	10.0	1		06/22/20 17:38		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		06/30/20 16:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:32		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		06/30/20 16:32		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	160	mg/L	6.0	3.6	6		06/29/20 12:12	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		06/27/20 15:38	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-37D, FILTERED **Lab ID: 92482649008** Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	292	mg/L	6.0	3.0	6		06/29/20 12:12	14808-79-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548539 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918225 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/22/20 14:53	
Iron	mg/L	ND	0.040	0.015	06/22/20 14:53	
Magnesium	mg/L	ND	0.050	0.011	06/22/20 14:53	
Manganese	mg/L	ND	0.040	0.0061	06/22/20 14:53	
Potassium	mg/L	ND	0.20	0.026	06/22/20 14:53	
Sodium	mg/L	ND	1.0	0.19	06/22/20 14:53	

LABORATORY CONTROL SAMPLE: 2918226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99J	99	80-120	
Iron	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	0.99	99	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	1.1	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918227 2918228

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482346005 Result	Spike Conc.	Spike Conc.	MS Result						
Calcium	mg/L	112	1	1	110	114	-256	180	75-125	4	20 M1
Iron	mg/L	0.56	1	1	1.6	1.6	103	108	75-125	3	20
Magnesium	mg/L	10.3	1	1	11.0	11.4	74	117	75-125	4	20 M1
Manganese	mg/L	0.22	1	1	1.2	1.2	96	100	75-125	3	20
Potassium	mg/L	2.7	1	1	3.7	3.8	95	107	75-125	3	20
Sodium	mg/L	10.3	1	1	11.0	11.4	68	109	75-125	4	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548844 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919468 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/22/20 16:52	
Iron	mg/L	ND	0.040	0.015	06/22/20 16:52	
Magnesium	mg/L	0.011J	0.050	0.011	06/22/20 16:52	
Manganese	mg/L	ND	0.040	0.0061	06/22/20 16:52	
Potassium	mg/L	ND	0.20	0.026	06/22/20 16:52	
Sodium	mg/L	ND	1.0	0.19	06/22/20 16:52	

LABORATORY CONTROL SAMPLE: 2919473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.97J	97	80-120	
Iron	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	102	80-120	
Manganese	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.86	86	80-120	
Sodium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919474 2919475

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Calcium	mg/L	517	1	1	511	511	-681	-642	75-125	0	20	M6
Iron	mg/L	2.4	1	1	3.3	3.3	92	93	75-125	0	20	
Magnesium	mg/L	71.5	1	1	71.4	71.6	-16	5	75-125	0	20	M1
Manganese	mg/L	10.6	1	1	11.3	11.2	67	58	75-125	1	20	M1
Potassium	mg/L	8.3	1	1	9.2	9.2	89	91	75-125	0	20	
Sodium	mg/L	11.5	1	1	12.3	12.3	79	81	75-125	0	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548509 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918043 Matrix: Water

Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	06/19/20 17:32	
Barium	mg/L	ND	0.010	0.00049	06/19/20 17:32	
Beryllium	mg/L	ND	0.0030	0.000074	06/19/20 17:32	
Boron	mg/L	ND	0.10	0.0049	06/19/20 17:32	
Cadmium	mg/L	ND	0.0025	0.00011	06/19/20 17:32	
Chromium	mg/L	ND	0.010	0.00039	06/19/20 17:32	
Cobalt	mg/L	ND	0.0050	0.00030	06/19/20 17:32	
Lead	mg/L	ND	0.0050	0.000046	06/19/20 17:32	
Lithium	mg/L	ND	0.030	0.00078	06/19/20 17:32	
Molybdenum	mg/L	ND	0.010	0.00095	06/19/20 17:32	
Selenium	mg/L	ND	0.010	0.0013	06/19/20 17:32	
Thallium	mg/L	ND	0.0010	0.000052	06/19/20 17:32	

LABORATORY CONTROL SAMPLE: 2918044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.095	95	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918045 2918046

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92482427001 Result	Conc.	Conc.	Result							Result
Arsenic	mg/L	ND	0.1	0.1	0.094	0.094	93	93	75-125	0	20	
Barium	mg/L	9.3 ug/L	0.1	0.1	0.10	0.10	95	95	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Boron	mg/L	54.3 ug/L	1	1	1.0	1.0	96	96	75-125	0	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Parameter	Units	2918045		2918046		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482427001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.097	0.098	96	97	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20		
Lithium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.092	97	92	75-125	5	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548895 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919709 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	06/23/20 13:04	
Barium	mg/L	ND	0.010	0.00049	06/23/20 13:04	
Beryllium	mg/L	ND	0.0030	0.000074	06/23/20 13:04	
Boron	mg/L	ND	0.10	0.0049	06/23/20 13:04	
Cadmium	mg/L	ND	0.0025	0.00011	06/23/20 13:04	
Chromium	mg/L	ND	0.010	0.00039	06/23/20 13:04	
Cobalt	mg/L	ND	0.0050	0.00030	06/23/20 13:04	
Lead	mg/L	ND	0.0050	0.000046	06/23/20 13:04	
Lithium	mg/L	ND	0.030	0.00078	06/23/20 13:04	
Molybdenum	mg/L	ND	0.010	0.00095	06/23/20 13:04	
Selenium	mg/L	ND	0.010	0.0013	06/23/20 13:04	
Thallium	mg/L	ND	0.0010	0.000052	06/23/20 13:04	

LABORATORY CONTROL SAMPLE: 2919710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.096	96	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919711 2919712

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92482800001 Result	Spike Conc.	Spike Conc.	Result							Result
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	99	102	75-125	3	20	
Barium	mg/L	0.17	0.1	0.1	0.26	0.28	92	109	75-125	6	20	
Beryllium	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20	
Boron	mg/L	0.045J	1	1	1.0	0.98	95	94	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Parameter	Units	2919711		2919712		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		9248280001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.10	96	101	75-125	5	20		
Lead	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	1	20		
Lithium	mg/L	0.019J	0.1	0.1	0.12	0.12	99	98	75-125	0	20		
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548606 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918729 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/19/20 17:58	

LABORATORY CONTROL SAMPLE: 2918730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	419	105	84-108	

SAMPLE DUPLICATE: 2918731

Parameter	Units	92482647001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	18.0	15.0	18	10	D6

SAMPLE DUPLICATE: 2918732

Parameter	Units	92482647005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	28.0	43.0	42	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

QC Batch:	548907	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919762 Matrix: Water

Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/22/20 17:30	

LABORATORY CONTROL SAMPLE: 2919763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	84-108	

SAMPLE DUPLICATE: 2919764

Parameter	Units	92482662002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	163	182	11	10	D6

SAMPLE DUPLICATE: 2919765

Parameter	Units	92482737002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	97.0	86.0	12	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549851 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2923886 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/29/20 15:57	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/29/20 15:57	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/29/20 15:57	

LABORATORY CONTROL SAMPLE: 2923887

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.7	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923888 2923889

Parameter	Units	92482268001		2923889		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	ND	50	50	54.3	54.2	109	108	80-120	0	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923890 2923891

Parameter	Units	92482880003		2923891		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	8.3	50	50	63.0	63.9	109	111	80-120	2	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 550396 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2926273 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/30/20 13:53	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/30/20 13:53	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/30/20 13:53	

LABORATORY CONTROL SAMPLE: 2926274

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926275 2926276

Parameter	Units	92483174015		2926276		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO3	mg/L	ND	50	50	50.7	50.1	101	100	80-120	1	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926277 2926278

Parameter	Units	92482649003		2926278		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO3	mg/L	ND	50	50	57.1	57.5	104	105	80-120	1	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549382 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649001, 92482649002, 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2921743 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002, 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	06/24/20 18:53	

LABORATORY CONTROL SAMPLE: 2921744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921745 2921746

Parameter	Units	92482649001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.55	0.54	110	109	80-120	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921747 2921748

Parameter	Units	92482649002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.34	0.34	67	67	80-120	1	10 M1	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549186 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649001, 92482649002, 92482649003

METHOD BLANK: 2920985 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002, 92482649003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/24/20 23:11	
Fluoride	mg/L	ND	0.10	0.050	06/24/20 23:11	
Sulfate	mg/L	ND	1.0	0.50	06/24/20 23:11	

LABORATORY CONTROL SAMPLE: 2920986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.2	102	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	51.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2920987 2920988

Parameter	Units	92482762001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	1.2	50	50	49.9	49.9	97	97	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.5	97	97	90-110	1	10		
Sulfate	mg/L	ND	50	50	48.9	48.9	97	97	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2920989 2920990

Parameter	Units	92483147008		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	2.7	50	50	55.2	57.4	105	110	90-110	4	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	97	102	90-110	5	10		
Sulfate	mg/L	0.74J	50	50	53.3	55.4	105	109	90-110	4	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549584 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649004, 92482649005, 92482649006, 92482649007

METHOD BLANK: 2922593 Matrix: Water
Associated Lab Samples: 92482649004, 92482649005, 92482649006, 92482649007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/25/20 15:50	
Fluoride	mg/L	ND	0.10	0.050	06/25/20 15:50	
Sulfate	mg/L	ND	1.0	0.50	06/25/20 15:50	

LABORATORY CONTROL SAMPLE: 2922594

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.9	102	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Sulfate	mg/L	50	51.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922595 2922596

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92483318001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	6.6	6.6	50	50	55.6	55.0	98	97	90-110	1	10	
Fluoride	mg/L	0.090J	0.090J	2.5	2.5	2.7	2.6	103	102	90-110	1	10	
Sulfate	mg/L	5.5	5.5	50	50	55.0	54.4	99	98	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922597 2922598

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482981002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	21.7	21.7	50	50	70.6	71.0	98	99	90-110	1	10	
Fluoride	mg/L	ND	ND	2.5	2.5	2.5	2.5	99	98	90-110	0	10	
Sulfate	mg/L	8.0	8.0	50	50	58.0	58.1	100	100	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 550052 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482649008

METHOD BLANK: 2925000 Matrix: Water
Associated Lab Samples: 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/27/20 15:08	
Fluoride	mg/L	ND	0.10	0.050	06/27/20 15:08	
Sulfate	mg/L	ND	1.0	0.50	06/27/20 15:08	

LABORATORY CONTROL SAMPLE: 2925001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.5	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	50.9	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2925002 2925003

Parameter	Units	92482649008		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	160	50	50	206	206	91	92	90-110	0	10		
Fluoride	mg/L	0.10	2.5	2.5	2.5	2.5	95	97	90-110	2	10		
Sulfate	mg/L	292	50	50	337	339	91	94	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2925004 2925005

Parameter	Units	92483686007		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	33.3	50	50	84.9	86.5	103	106	90-110	2	10		
Fluoride	mg/L	0.28	2.5	2.5	2.7	2.9	97	103	90-110	5	10		
Sulfate	mg/L	1960	50	50	2020	2020	119	118	90-110	0	10 M6		

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QUALIFIERS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482649001	MW-21D				
92482649002	MW-33				
92482649003	MW-35				
92482649005	MW-34D				
92482649006	MW-36D				
92482649007	MW-37D				
92482649008	MW-37D, FILTERED				
92482649001	MW-21D	EPA 3010A	548539	EPA 6010D	548601
92482649002	MW-33	EPA 3010A	548539	EPA 6010D	548601
92482649003	MW-35	EPA 3010A	548844	EPA 6010D	548861
92482649004	FB-02	EPA 3010A	548844	EPA 6010D	548861
92482649005	MW-34D	EPA 3010A	548844	EPA 6010D	548861
92482649006	MW-36D	EPA 3010A	548844	EPA 6010D	548861
92482649007	MW-37D	EPA 3010A	548844	EPA 6010D	548861
92482649008	MW-37D, FILTERED	EPA 3010A	548844	EPA 6010D	548861
92482649001	MW-21D	EPA 3005A	548509	EPA 6020B	548546
92482649002	MW-33	EPA 3005A	548509	EPA 6020B	548546
92482649003	MW-35	EPA 3005A	548895	EPA 6020B	548915
92482649004	FB-02	EPA 3005A	548895	EPA 6020B	548915
92482649005	MW-34D	EPA 3005A	548895	EPA 6020B	548915
92482649006	MW-36D	EPA 3005A	548895	EPA 6020B	548915
92482649007	MW-37D	EPA 3005A	548895	EPA 6020B	548915
92482649008	MW-37D, FILTERED	EPA 3005A	548895	EPA 6020B	548915
92482649001	MW-21D	SM 2450C-2011	548606		
92482649002	MW-33	SM 2450C-2011	548606		
92482649003	MW-35	SM 2450C-2011	548907		
92482649004	FB-02	SM 2450C-2011	548907		
92482649005	MW-34D	SM 2450C-2011	548907		
92482649006	MW-36D	SM 2450C-2011	548907		
92482649007	MW-37D	SM 2450C-2011	548907		
92482649008	MW-37D, FILTERED	SM 2450C-2011	548907		
92482649001	MW-21D	SM 2320B-2011	549851		
92482649002	MW-33	SM 2320B-2011	549851		
92482649003	MW-35	SM 2320B-2011	550396		
92482649004	FB-02	SM 2320B-2011	550396		
92482649005	MW-34D	SM 2320B-2011	550396		
92482649006	MW-36D	SM 2320B-2011	550396		
92482649007	MW-37D	SM 2320B-2011	550396		
92482649008	MW-37D, FILTERED	SM 2320B-2011	550396		
92482649001	MW-21D	SM 4500-S2D-2011	549382		
92482649002	MW-33	SM 4500-S2D-2011	549382		
92482649003	MW-35	SM 4500-S2D-2011	549382		
92482649004	FB-02	SM 4500-S2D-2011	549382		
92482649005	MW-34D	SM 4500-S2D-2011	549382		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482649006	MW-36D	SM 4500-S2D-2011	549382		
92482649007	MW-37D	SM 4500-S2D-2011	549382		
92482649008	MW-37D, FILTERED	SM 4500-S2D-2011	549382		
92482649001	MW-21D	EPA 300.0 Rev 2.1 1993	549186		
92482649002	MW-33	EPA 300.0 Rev 2.1 1993	549186		
92482649003	MW-35	EPA 300.0 Rev 2.1 1993	549186		
92482649004	FB-02	EPA 300.0 Rev 2.1 1993	549584		
92482649005	MW-34D	EPA 300.0 Rev 2.1 1993	549584		
92482649006	MW-36D	EPA 300.0 Rev 2.1 1993	549584		
92482649007	MW-37D	EPA 300.0 Rev 2.1 1993	549584		
92482649008	MW-37D, FILTERED	EPA 300.0 Rev 2.1 1993	550052		

REPORT OF LABORATORY ANALYSIS

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

W0# : 92482649

PM: KLH1 Due Date: 07/02/20
 CLIENT: GR-GA Power

Section A Requester Client Information		Section B Required Project Information		Section C Invoice Information		
Company GA Power	Address Atlanta, GA	Report to SCS Contacts	Copy to Geosynthetic Contacts	Attention Southern Co.	Company Name Southern Co.	
Email To SCS Contacts		Purchase Order No.	Address		Face Queue Reference Kevin Herring	
Phone	Fax	Project Name Plant Hammond A-P-2 Non-Routine	Project Number GW65818	Requested Due Date/Time 5 day	Requested Analysis Filtered (Y/N)	
Valid Matrix Codes			Sample ID (A-Z 0-9 / -) Sample IDs MUST BE UNIQUE			
Section D Required Client Information			Requested Analysis Filtered (Y/N)			
ITEM #	MATRIX CODE (use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME
1	MW-21D	WT G	6/17/20	10:37		
2	MW-33	WT G	6/17/20	10:37		
3	MW-34D	WT G	6/17/20	10:37		
4	MW-95	WT G	6/17/20	10:37		
5	MW-96D	WT G	6/17/20	10:37		
6	MW-37D	WT G	6/17/20	10:37		
7	FB-02	WT G	6/18/20	14:43		
8						
9						
10						
11						
12						

REINQUISHED BY/AFFILIATION Chad Russell, 6/17/20, 1845
ACCEPTED BY/AFFILIATION K.W. Wilkerson, 6/18/20, 1443
DATE Signed (MM/DD/YYYY): 6/17/2020

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russell
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 6/17/2020

Temp in °C
 Received on Ice (Y/N)
 Custody Sealed Cooler (Y/N)
 Samples Intact (Y/N)

*Preparer Note: By signing this form you are accepting Pace's NET 30 day payment terms, and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.
 F-ALL-Q-020 rev 07-15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information Company: GA Power Address: Atlanta, GA		Section B Required Project Information Report To: SCS Contacts Copy To: Geosynlec Contacts		Section C Invoice Information Antenna: Southern Co.	
Email To: SCS Contacts	Purchase Order No.:	Company Name:	Address:	REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> PESTICIDES <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER USE	Page: 1 of 2
Phone: Fax	Project Name: Plant Hammond AP-2 Non-Routine	Reference: Kevin Herring	Site Location STATE: GA		
Requested Due Date/TAT: 5 day	Project Number: GW65818	Requested Analysis Filtered (Y/N)			

ITEM #	Section D Required Client Information Valid Matrix Codes MATRIX CODE GENERAL USE: D06 WASTE WATER: W00 PRODUCT: P SOLVENT: S OTHER: O SAMPLER: S SAMPLER: S SAMPLER: S SAMPLER: S SAMPLER: S SAMPLER: S	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	Y/N	Chloride, Fluoride, Sulfate	N	N	N	N	N	N	N	Residual Chlorine (Y/N)	pH	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (N/A)	Samples Intact (N/A)
1	MW-21D	WT G		6/19/20	1730	6/19/20	1515		3																								
2	MW-34D	WT G		6/19/20	1152	6/19/20	1310		3																								
3	MW-35	WT G		6/19/20		6/19/20	1310		3																								
4	MW-30B	WT G		6/19/20		6/19/20	1310		3																								
5	MW-37D	WT G		6/19/20		6/19/20	1310		3																								
6	FB-02	WT G		6/19/20		6/19/20	1310		3																								
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

REMOVED BY/AFFILIATION		DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
Chad Russ		6/18/20	1310	Chad Russ	6/18/20	2030	Temp in °C	2.7
Chad Russ		6/19/20	1515	Chad Russ	6/19/20	1515	Received on Ice (Y/N)	Y
Chad Russ		6/19/20	1515	Chad Russ	6/19/20	1515	Custody Sealed Cooler (N/A)	N
Chad Russ		6/19/20	1515	Chad Russ	6/19/20	1515	Samples Intact (N/A)	Y

July 14, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 18, 2020 and June 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 NON ROUTINE RADs
Pace Project No.: 92482645

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
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482645001	MW-21D	Water	06/17/20 09:30	06/18/20 10:37
92482645002	MW-33	Water	06/17/20 16:34	06/18/20 10:37
92482645003	MW-35	Water	06/18/20 11:52	06/19/20 13:10
92482645004	FB-02	Water	06/18/20 17:50	06/19/20 13:10
92482645005	MW-34D	Water	06/18/20 18:05	06/19/20 13:10
92482645006	MW-36D	Water	06/18/20 10:05	06/19/20 13:10
92482645007	MW-37D	Water	06/18/20 13:15	06/19/20 13:10
92482645008	MW-37D, FILTERED	Water	06/18/20 13:30	06/19/20 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE RAD5
Pace Project No.: 92482645

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92482645001	MW-21D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645002	MW-33	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645003	MW-35	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645004	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645005	MW-34D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645006	MW-36D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645007	MW-37D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645008	MW-37D, FILTERED	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE RADS
 Pace Project No.: 92482645

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482645001	MW-21D					
EPA 9315	Radium-226	0.157 ± 0.303 (0.697) C:91% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	0.534 ± 0.534 (1.11) C:57% T:81%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	0.691 ± 0.837 (1.81)	pCi/L		07/09/20 09:57	
92482645002	MW-33					
EPA 9315	Radium-226	0.881 ± 0.385 (0.425) C:96% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	0.544 ± 0.590 (1.23) C:58% T:74%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.43 ± 0.975 (1.66)	pCi/L		07/09/20 09:57	
92482645003	MW-35					
EPA 9315	Radium-226	0.386 ± 0.283 (0.478) C:96% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	1.63 ± 0.621 (0.957) C:69% T:75%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	2.02 ± 0.904 (1.44)	pCi/L		07/09/20 09:57	
92482645004	FB-02					
EPA 9315	Radium-226	0.221 ± 0.237 (0.462) C:89% T:NA	pCi/L		07/08/20 07:10	
EPA 9320	Radium-228	0.250 ± 0.450 (0.984) C:65% T:76%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	0.471 ± 0.687 (1.45)	pCi/L		07/09/20 09:57	

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482645005	MW-34D					
EPA 9315	Radium-226	0.401 ± 0.261 (0.367) C:98% T:NA	pCi/L		07/08/20 07:11	
EPA 9320	Radium-228	0.963 ± 0.538 (0.984) C:65% T:78%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.36 ± 0.799 (1.35)	pCi/L		07/09/20 09:57	
92482645006	MW-36D					
EPA 9315	Radium-226	0.177 ± 0.258 (0.565) C:93% T:NA	pCi/L		07/08/20 07:12	
EPA 9320	Radium-228	1.67 ± 0.647 (1.02) C:64% T:81%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.85 ± 0.905 (1.59)	pCi/L		07/09/20 09:57	
92482645007	MW-37D					
EPA 9315	Radium-226	0.709 ± 0.350 (0.425) C:84% T:NA	pCi/L		07/08/20 07:13	
EPA 9320	Radium-228	1.08 ± 0.548 (0.962) C:63% T:79%	pCi/L		07/06/20 16:03	
Total Radium Calculation	Total Radium	1.79 ± 0.898 (1.39)	pCi/L		07/09/20 09:57	
92482645008	MW-37D, FILTERED					
EPA 9315	Radium-226	0.246 ± 0.244 (0.467) C:90% T:NA	pCi/L		07/08/20 07:12	
EPA 9320	Radium-228	0.437 ± 0.448 (0.929) C:64% T:79%	pCi/L		07/06/20 16:03	
Total Radium Calculation	Total Radium	0.683 ± 0.692 (1.40)	pCi/L		07/09/20 09:57	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-21D **Lab ID: 92482645001** Collected: 06/17/20 09:30 Received: 06/18/20 10:37 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.157 ± 0.303 (0.697) C:91% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.534 ± 0.534 (1.11) C:57% T:81%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.691 ± 0.837 (1.81)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-33 **Lab ID: 92482645002** Collected: 06/17/20 16:34 Received: 06/18/20 10:37 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.881 ± 0.385 (0.425) C:96% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.544 ± 0.590 (1.23) C:58% T:74%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.43 ± 0.975 (1.66)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-35 **Lab ID: 92482645003** Collected: 06/18/20 11:52 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.386 ± 0.283 (0.478) C:96% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.63 ± 0.621 (0.957) C:69% T:75%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.02 ± 0.904 (1.44)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: FB-02 **Lab ID: 92482645004** Collected: 06/18/20 17:50 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.221 ± 0.237 (0.462) C:89% T:NA	pCi/L	07/08/20 07:10	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.250 ± 0.450 (0.984) C:65% T:76%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.471 ± 0.687 (1.45)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-34D Lab ID: 92482645005 Collected: 06/18/20 18:05 Received: 06/19/20 13:10 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.401 ± 0.261 (0.367) C:98% T:NA	pCi/L	07/08/20 07:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.963 ± 0.538 (0.984) C:65% T:78%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.36 ± 0.799 (1.35)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-36D **Lab ID: 92482645006** Collected: 06/18/20 10:05 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.177 ± 0.258 (0.565) C:93% T:NA	pCi/L	07/08/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.67 ± 0.647 (1.02) C:64% T:81%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.85 ± 0.905 (1.59)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-37D **Lab ID: 92482645007** Collected: 06/18/20 13:15 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.709 ± 0.350 (0.425) C:84% T:NA	pCi/L	07/08/20 07:13	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.08 ± 0.548 (0.962) C:63% T:79%	pCi/L	07/06/20 16:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.79 ± 0.898 (1.39)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-37D, FILTERED **Lab ID: 92482645008** Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.246 ± 0.244 (0.467) C:90% T:NA	pCi/L	07/08/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.437 ± 0.448 (0.929) C:64% T:79%	pCi/L	07/06/20 16:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.683 ± 0.692 (1.40)	pCi/L	07/09/20 09:57	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

QC Batch: 403006

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

METHOD BLANK: 1950655

Matrix: Water

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0758 ± 0.123 (0.256) C:97% T:NA	pCi/L	07/07/20 19:54	

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.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

QC Batch: 402596

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

METHOD BLANK: 1948602

Matrix: Water

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.856 ± 0.506 (0.940) C:63% T:80%	pCi/L	07/06/20 16:00	

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

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QUALIFIERS

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE RAD5
Pace Project No.: 92482645

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482645001	MW-21D	EPA 9315	403006		
92482645002	MW-33	EPA 9315	403006		
92482645003	MW-35	EPA 9315	403006		
92482645004	FB-02	EPA 9315	403006		
92482645005	MW-34D	EPA 9315	403006		
92482645006	MW-36D	EPA 9315	403006		
92482645007	MW-37D	EPA 9315	403006		
92482645008	MW-37D, FILTERED	EPA 9315	403006		
92482645001	MW-21D	EPA 9320	402596		
92482645002	MW-33	EPA 9320	402596		
92482645003	MW-35	EPA 9320	402596		
92482645004	FB-02	EPA 9320	402596		
92482645005	MW-34D	EPA 9320	402596		
92482645006	MW-36D	EPA 9320	402596		
92482645007	MW-37D	EPA 9320	402596		
92482645008	MW-37D, FILTERED	EPA 9320	402596		
92482645001	MW-21D	Total Radium Calculation	404343		
92482645002	MW-33	Total Radium Calculation	404343		
92482645003	MW-35	Total Radium Calculation	404343		
92482645004	FB-02	Total Radium Calculation	404343		
92482645005	MW-34D	Total Radium Calculation	404343		
92482645006	MW-36D	Total Radium Calculation	404343		
92482645007	MW-37D	Total Radium Calculation	404343		
92482645008	MW-37D, FILTERED	Total Radium Calculation	404343		

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 7/7/2020
Worklist: 54859
Matrix: DW

Method Blank Assessment	
MB Sample ID	1950655
MB Concentration:	0.076
MB Counting Uncertainty:	0.122
MB MDC:	0.256
MB Numerical Performance Indicator:	1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS54859	Y
Count Date:	7/8/2020	7/8/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.046	24.046
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.503	0.501
Target Conc. (pCi/L, g, F):	4.784	4.804
Uncertainty (Calculated):	0.057	0.058
Result (pCi/L, g, F):	4.691	3.943
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.717	0.694
Numerical Performance Indicator:	-0.25	-2.42
Percent Recovery:	98.05%	82.08%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	LCS54859	Y
Sample I.D.:	LCS54859	7/8/2020
Duplicate Sample I.D.:	LCS54859	7/8/2020
Sample Result (pCi/L, g, F):	4.691	4.804
Sample Duplicate Result (pCi/L, g, F):	0.717	0.694
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	3.943	0.694
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.694	0.694
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.468	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	17.74%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

Comments:

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 7/7/2020
Worklist: 54859
Matrix: DW

Method Blank Assessment	
MB Sample ID	1950655
MB concentration:	0.076
MB Counting Uncertainty:	0.122
MB MDC:	0.256
MB Numerical Performance Indicator:	1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	7/8/2020
Spike I.D.:	LCS54859
Decay Corrected Spike Concentration (pCi/mL):	19-033
Volume Used (mL):	24.046
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.503
Uncertainty (Calculated):	4.784
Result (pCi/L, g, F):	0.057
Numerical Performance Indicator:	4.691
Percent Recovery:	0.717
Status vs Numerical Indicator:	-0.25
Upper % Recovery Limits:	98.05%
Lower % Recovery Limits:	N/A

Duplicate Sample Assessment	
Sample I.D.:	92482796001
Duplicate Sample I.D.:	92482796001DUP
Sample Result (pCi/L, g, F):	0.470
Sample Duplicate Result (pCi/L, g, F):	0.287
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.046
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.126
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	2.650
Duplicate RPD:	154.40%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail
% RPD Limit:	25%

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

Comments:

#DIV/0!

batch must be re-prepped due to unacceptable precision

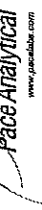
JL 7/8/20

DW 7.8.20

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Matrix Spike Result: Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 7/1/2020
Worklist: 54819
Matrix: WT

Method Blank Assessment	
MB Sample ID	1948602
MB concentration:	0.856
MB 2 Sigma CSU:	0.506
MB MDC:	0.940
MB Numerical Performance Indicator:	3.31
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS54819	LCS54819
Count Date:	7/6/2020	7/6/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	33.559	33.559
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.820
Target Conc. (pCi/L, g, F):	4.142	4.093
Uncertainty (Calculated):	0.298	0.295
Result (pCi/L, g, F):	4.306	4.401
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.098	1.097
Numerical Performance Indicator:	0.28	0.53
Percent Recovery:	103.98%	107.53%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS54819
Duplicate Sample I.D.:	LCS54819
Sample Result (pCi/L, g, F):	4.306
Sample Duplicate Result (pCi/L, g, F):	1.098
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	4.401
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.097
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.119
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	3.36%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Sample I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MS Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

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

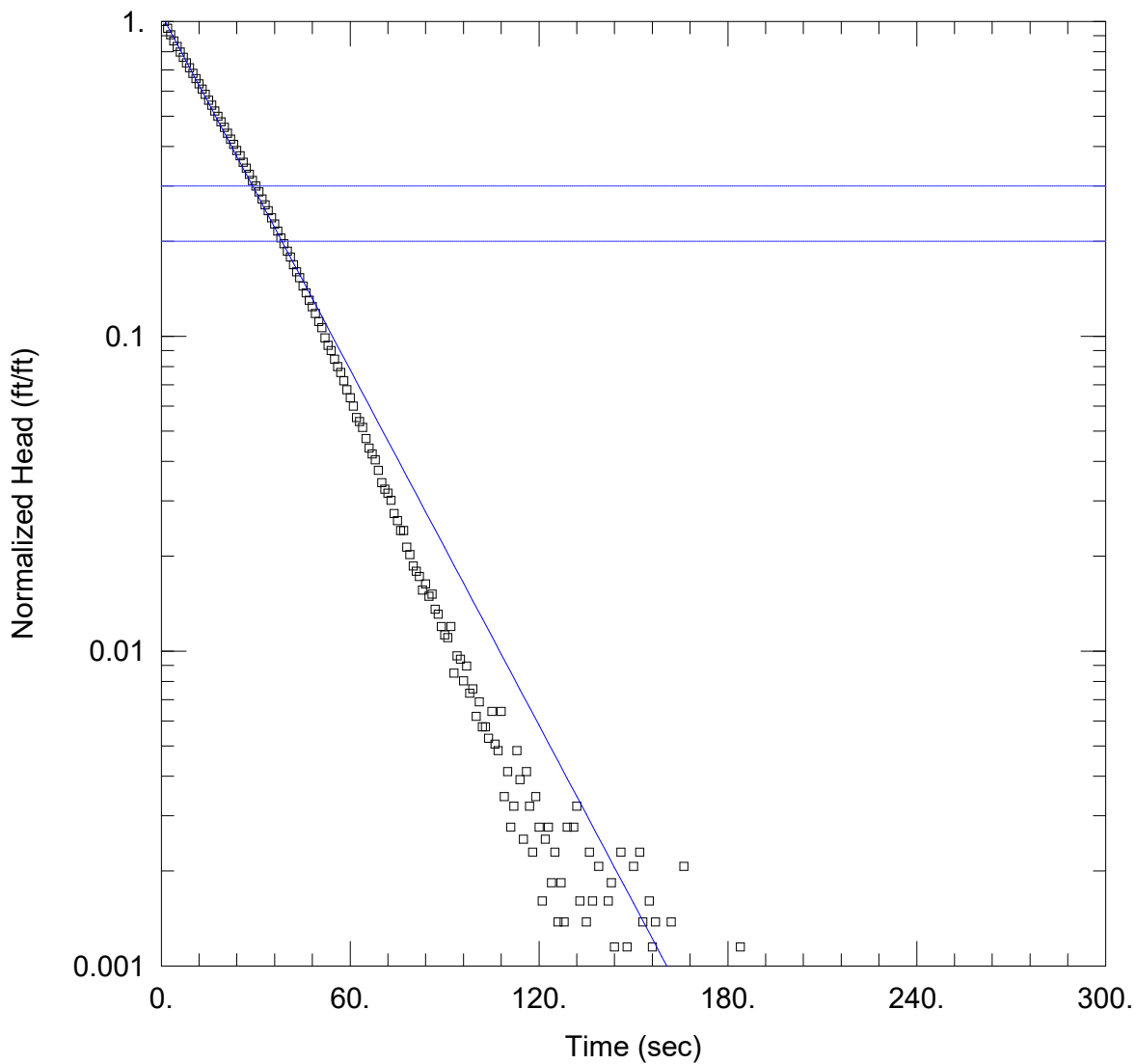
Comments:

*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

[Handwritten signature]

APPENDIX B

AQTESOLV Data Plots



WELL TEST ANALYSIS

Data Set: \\...\HGWC-14.aqt
 Date: 08/12/20

Time: 07:50:01

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-14
 Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 14.45 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

Initial Displacement: 4.35 ft
 Total Well Penetration Depth: 14.05 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 14.45 ft
 Screen Length: 10. ft
 Well Radius: 0.038 ft

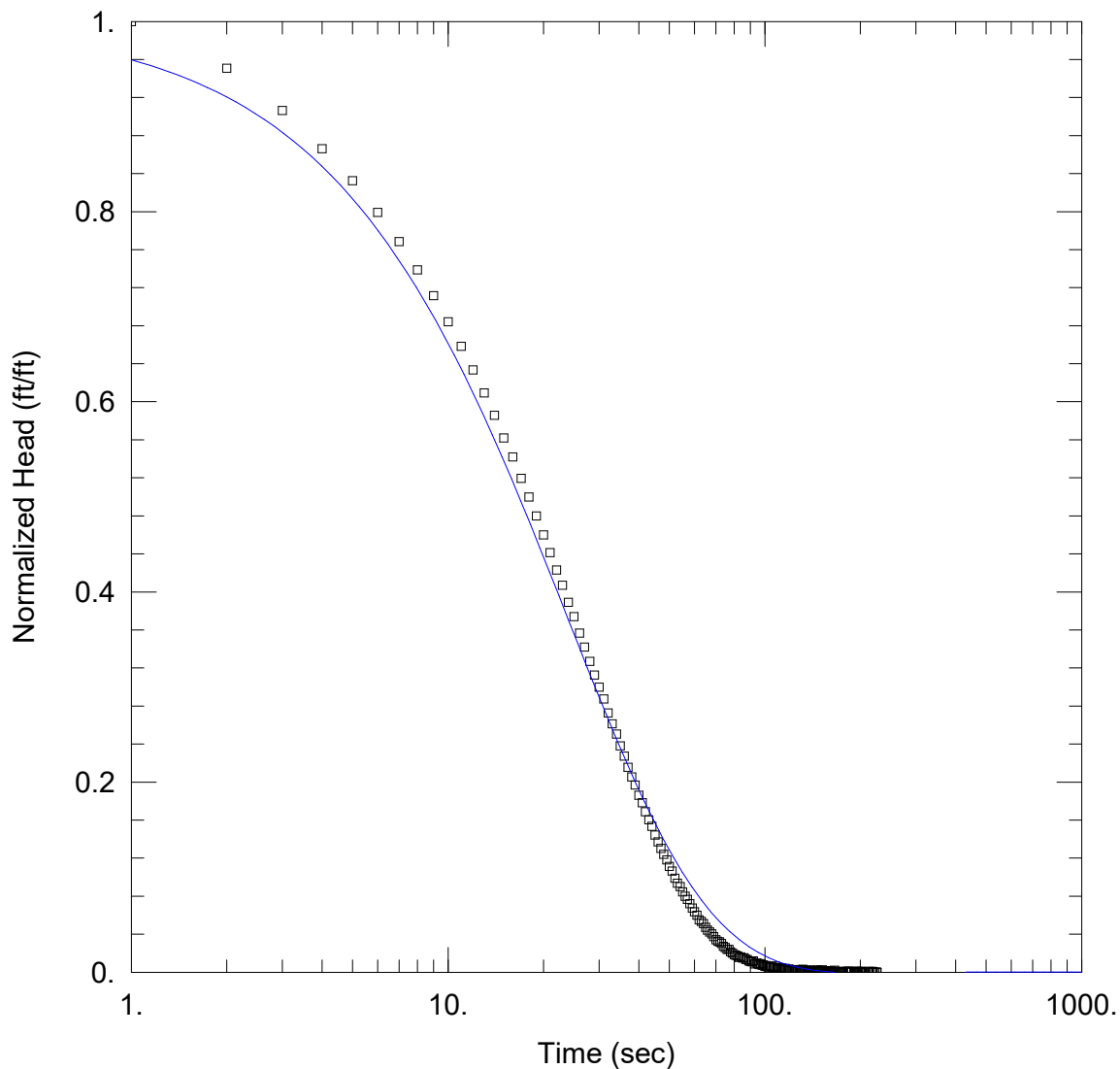
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 6.31$ ft/day

$y_0 = 4.583$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-14.aqt

Date: 08/12/20

Time: 07:51:40

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-14

Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 14.45 ft

WELL DATA (New Well)

Initial Displacement: 4.35 ft

Total Well Penetration Depth: 14.05 ft

Casing Radius: 0.083 ft

Static Water Column Height: 14.45 ft

Screen Length: 10. ft

Well Radius: 0.038 ft

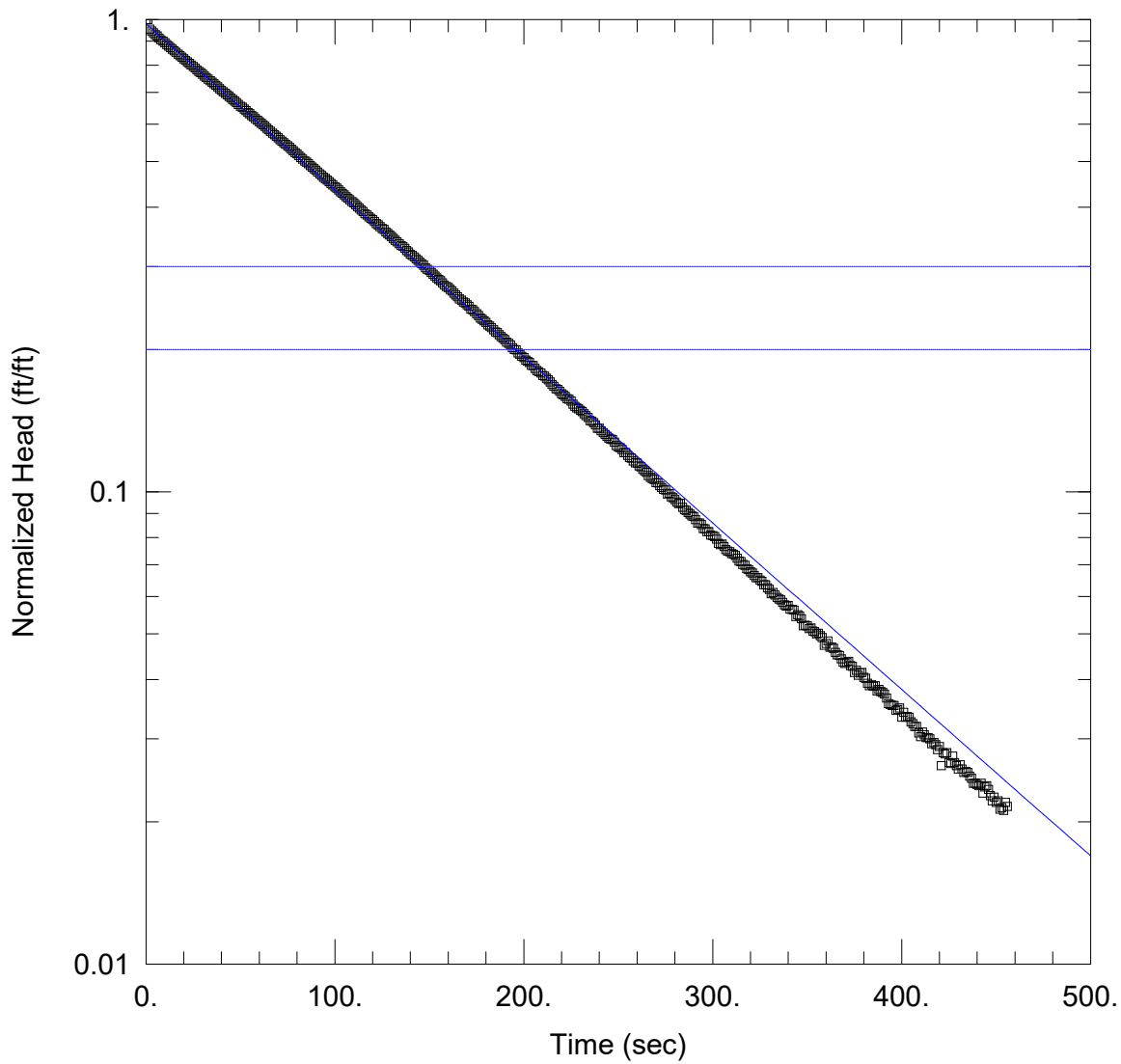
SOLUTION

Aquifer Model: Unconfined

Kr = 6.88 ft/day

Solution Method: KGS Model

Ss = 6.835E-12 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-15_pump.aqt
 Date: 08/12/20

Time: 07:53:51

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-15_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 21.23 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

Initial Displacement: 7. ft
 Total Well Penetration Depth: 20.83 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.23 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

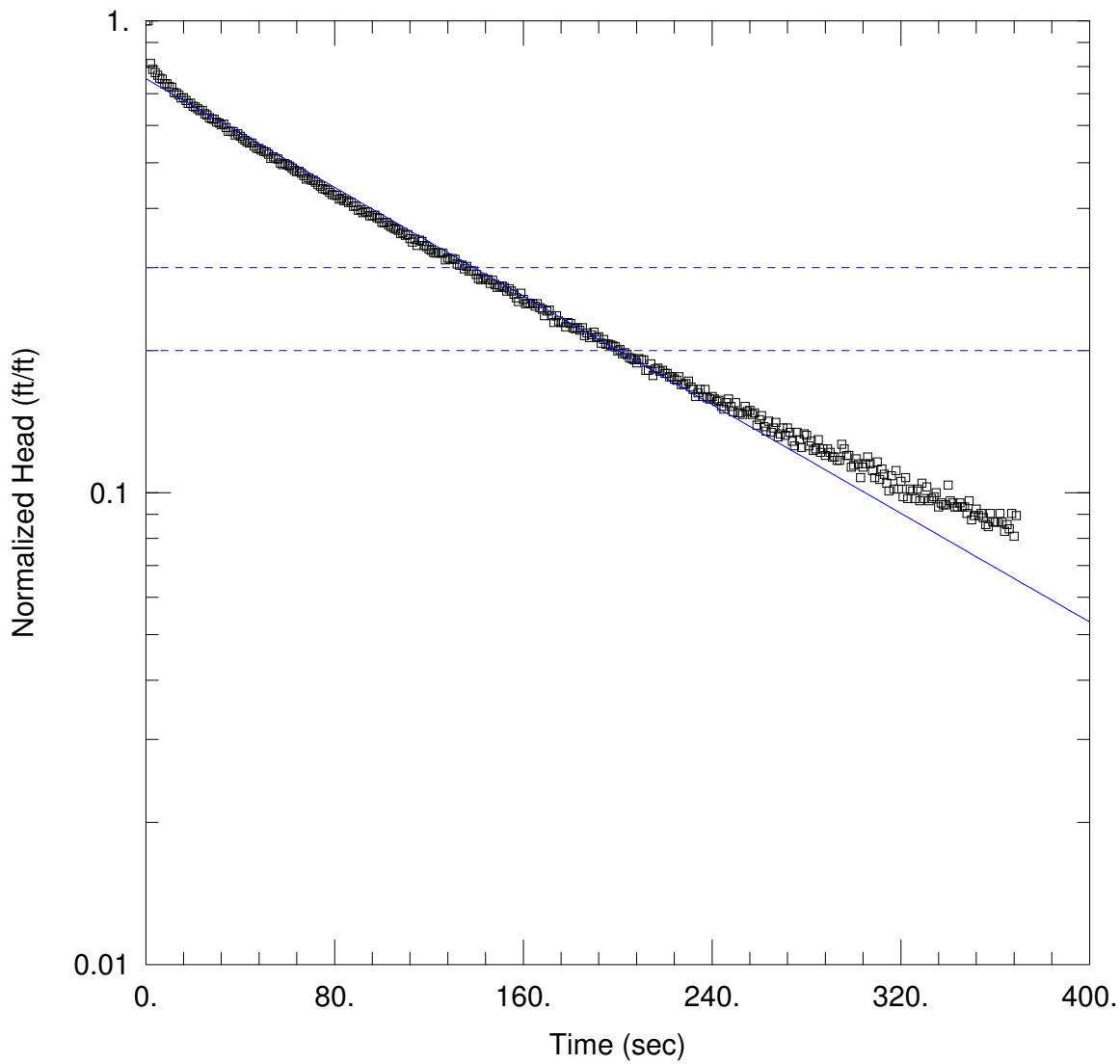
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 1.063$ ft/day

$y_0 = 6.859$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-15_slug.aqt
 Date: 08/12/20

Time: 08:17:35

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-15_slug
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 21.19 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

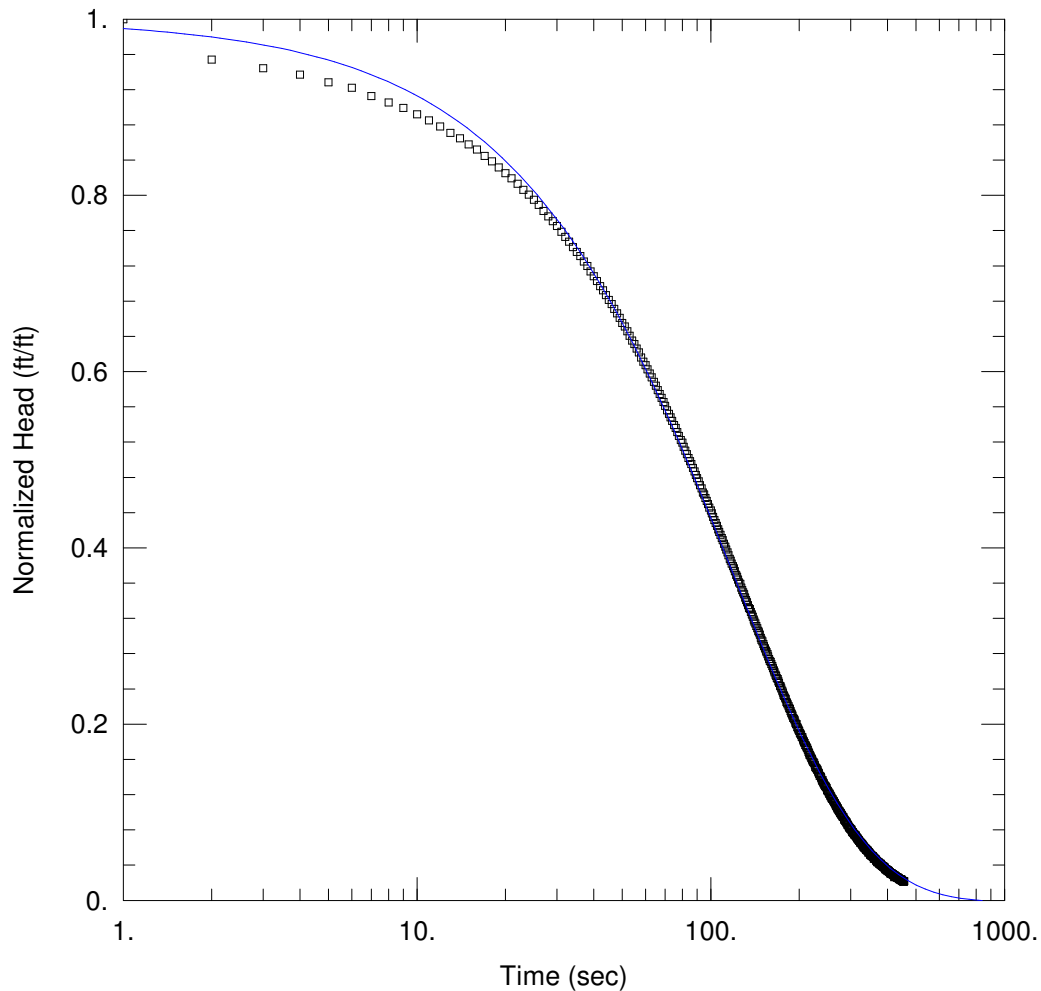
Initial Displacement: 1.051 ft
 Total Well Penetration Depth: 20.79 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.19 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 0.8679$ ft/day

Solution Method: Bowyer-Rice
 $y_0 = 0.792$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-15_pump.aqt

Date: 08/12/20

Time: 07:57:32

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-15_pump

Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 21.23 ft

WELL DATA (New Well)

Initial Displacement: 7. ft

Total Well Penetration Depth: 20.83 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.23 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

SOLUTION

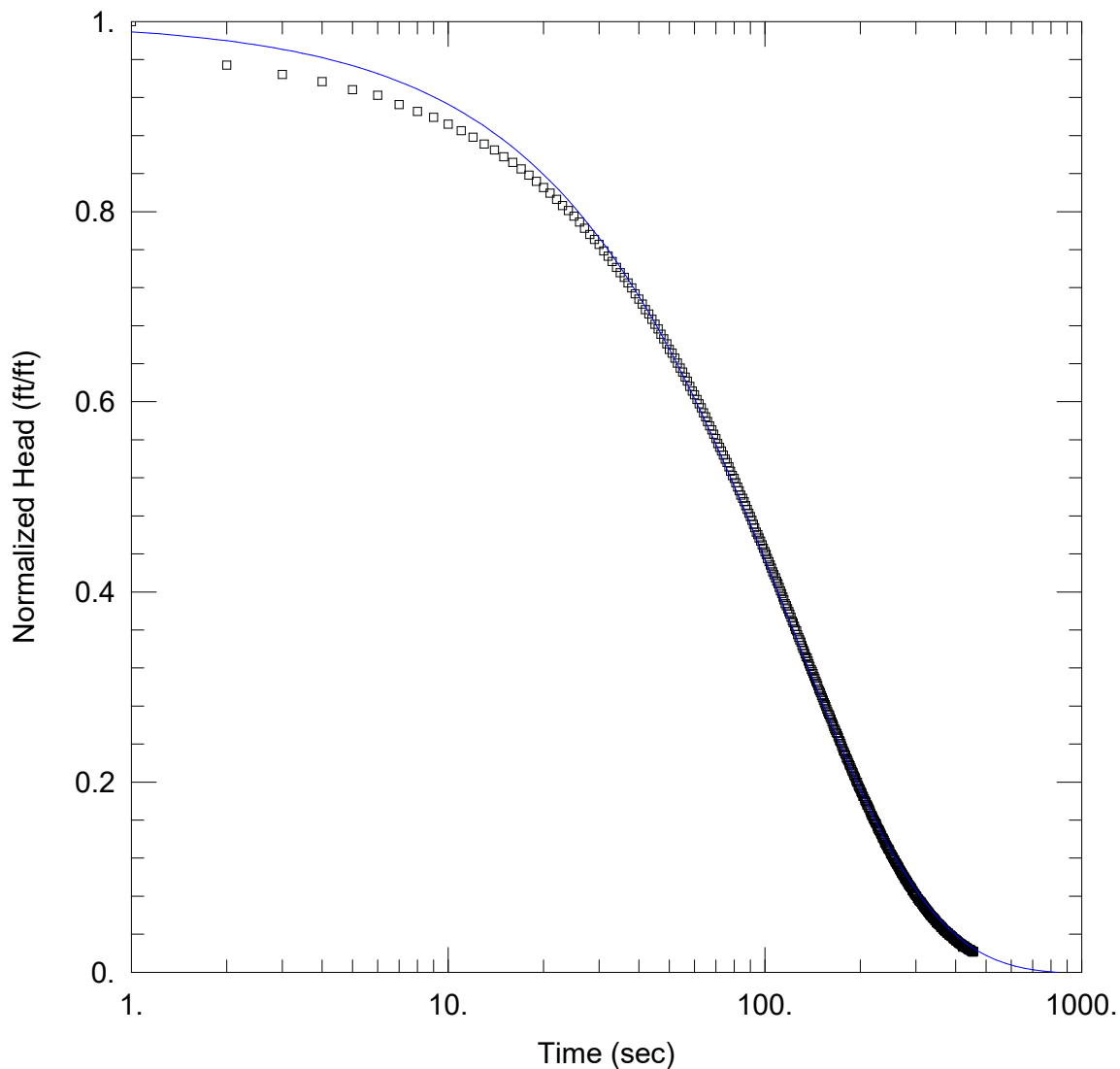
Aquifer Model: Unconfined

Kr = 1.259 ft/day

Kz/Kr = 0.1

Solution Method: KGS Model

Ss = 1.727E-7 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-15_pump.aqt

Date: 08/12/20

Time: 07:55:20

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-15_pump

Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 21.23 ft

WELL DATA (New Well)

Initial Displacement: 7. ft

Total Well Penetration Depth: 20.83 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.23 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

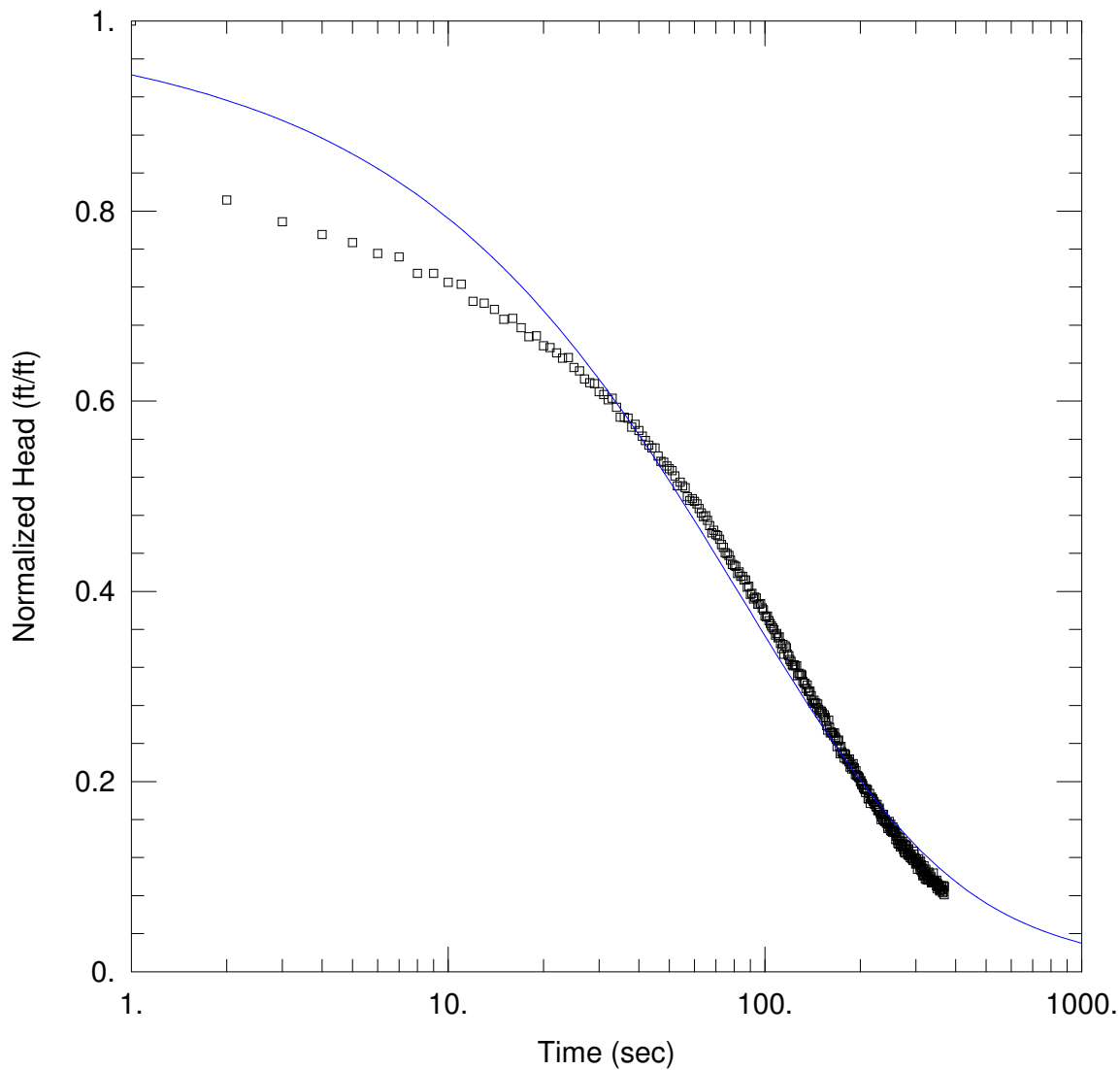
SOLUTION

Aquifer Model: Unconfined

Kr = 1.259 ft/day

Solution Method: KGS Model

Ss = 1.727E-7 ft⁻¹



WELL TEST ANALYSIS

Data Set: \...\HGWC-15_slug.aqt

Date: 08/12/20

Time: 08:20:06

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-15_slug

Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 21.19 ft

WELL DATA (New Well)

Initial Displacement: 1.051 ft

Total Well Penetration Depth: 20.79 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.19 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

SOLUTION

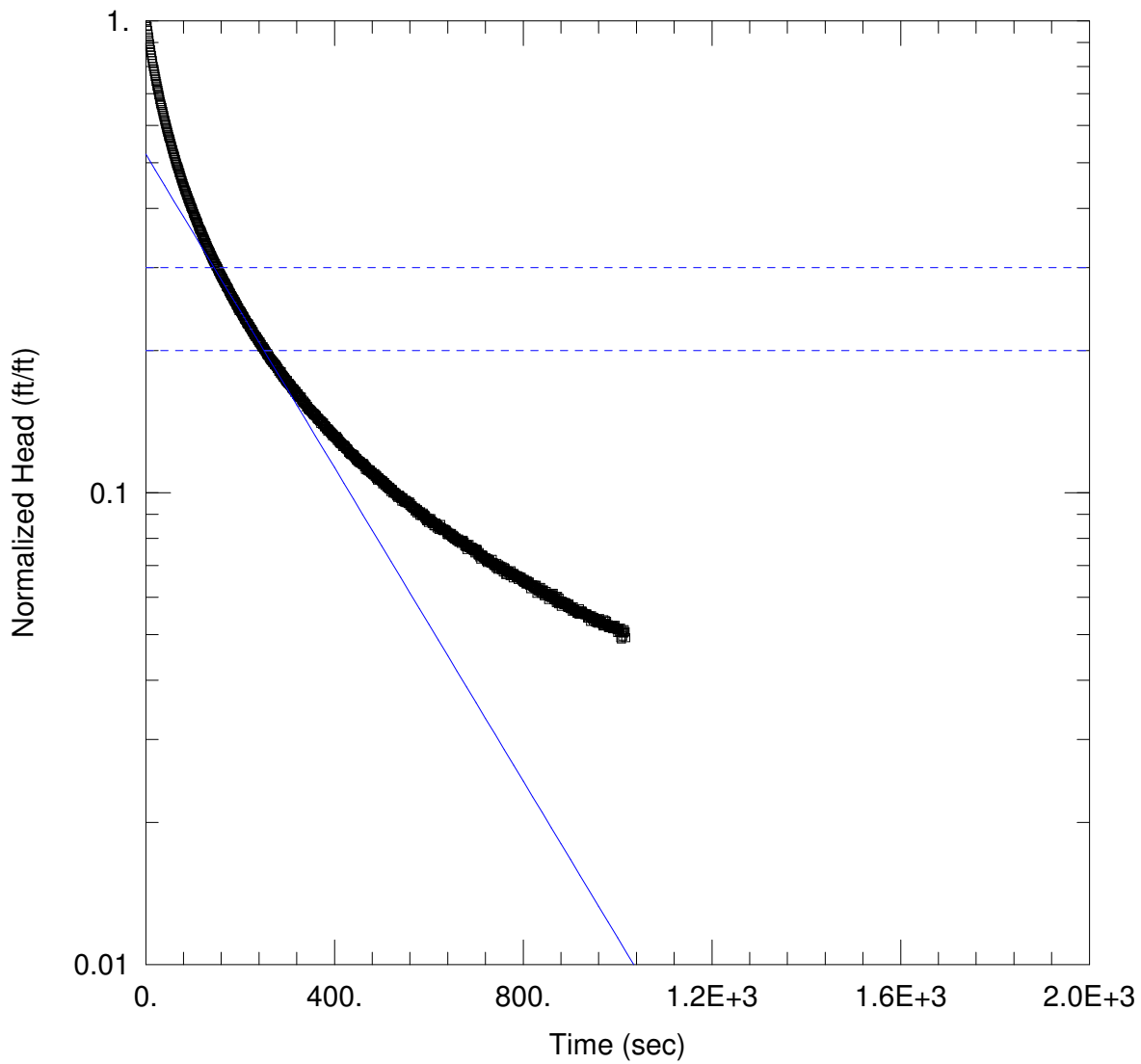
Aquifer Model: Unconfined

Kr = 0.5391 ft/day

Kz/Kr = 0.1

Solution Method: KGS Model

Ss = 0.003935 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-16_pump.aqt
 Date: 08/12/20

Time: 08:23:22

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-16_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 20.93 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

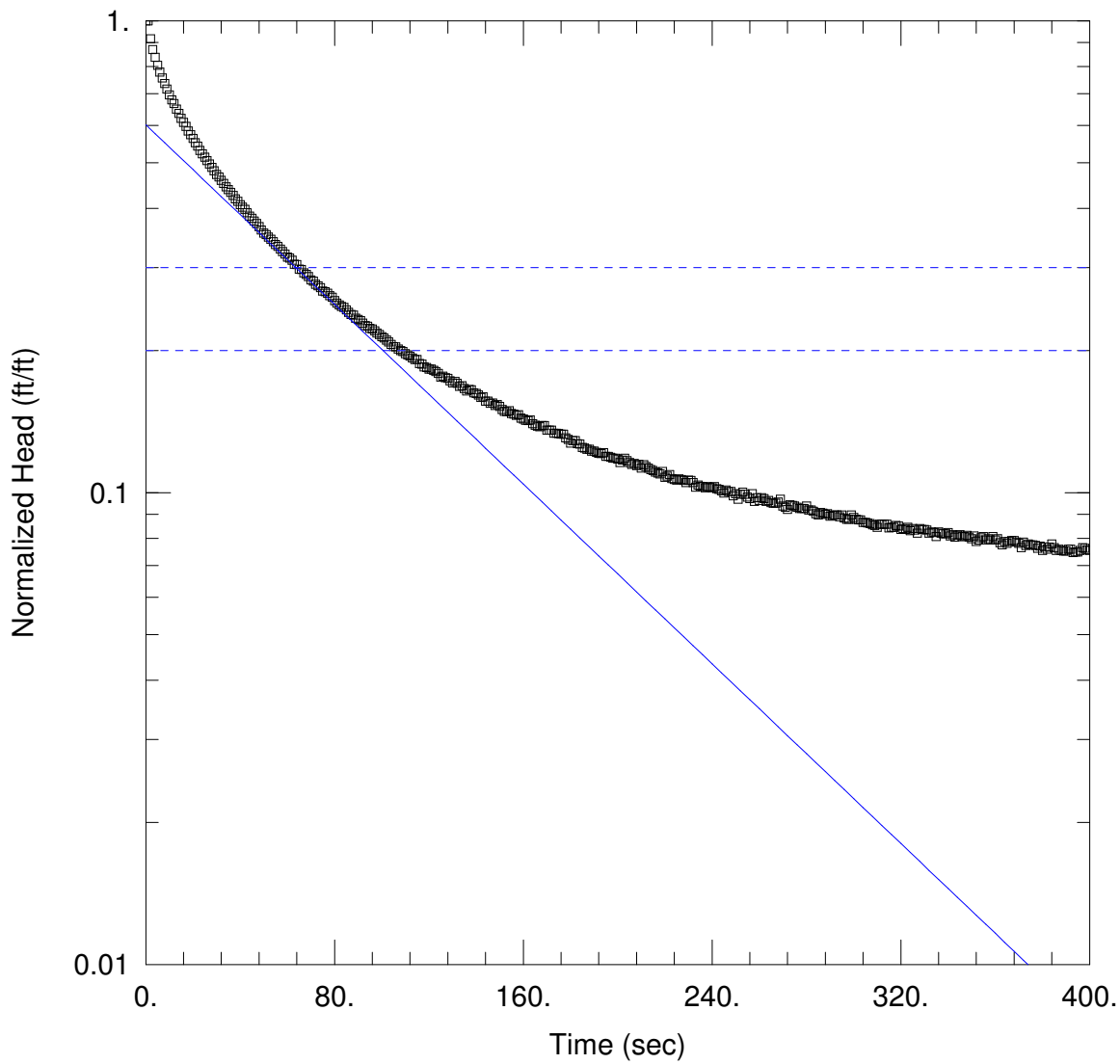
Initial Displacement: 5.64 ft
 Total Well Penetration Depth: 20.53 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.93 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K =$ 0.5 ft/day

Solution Method: Bouwer-Rice
 $y_0 =$ 2.941 ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-16_slug.aqt
 Date: 08/12/20

Time: 08:26:49

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-16_slug
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 20.93 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

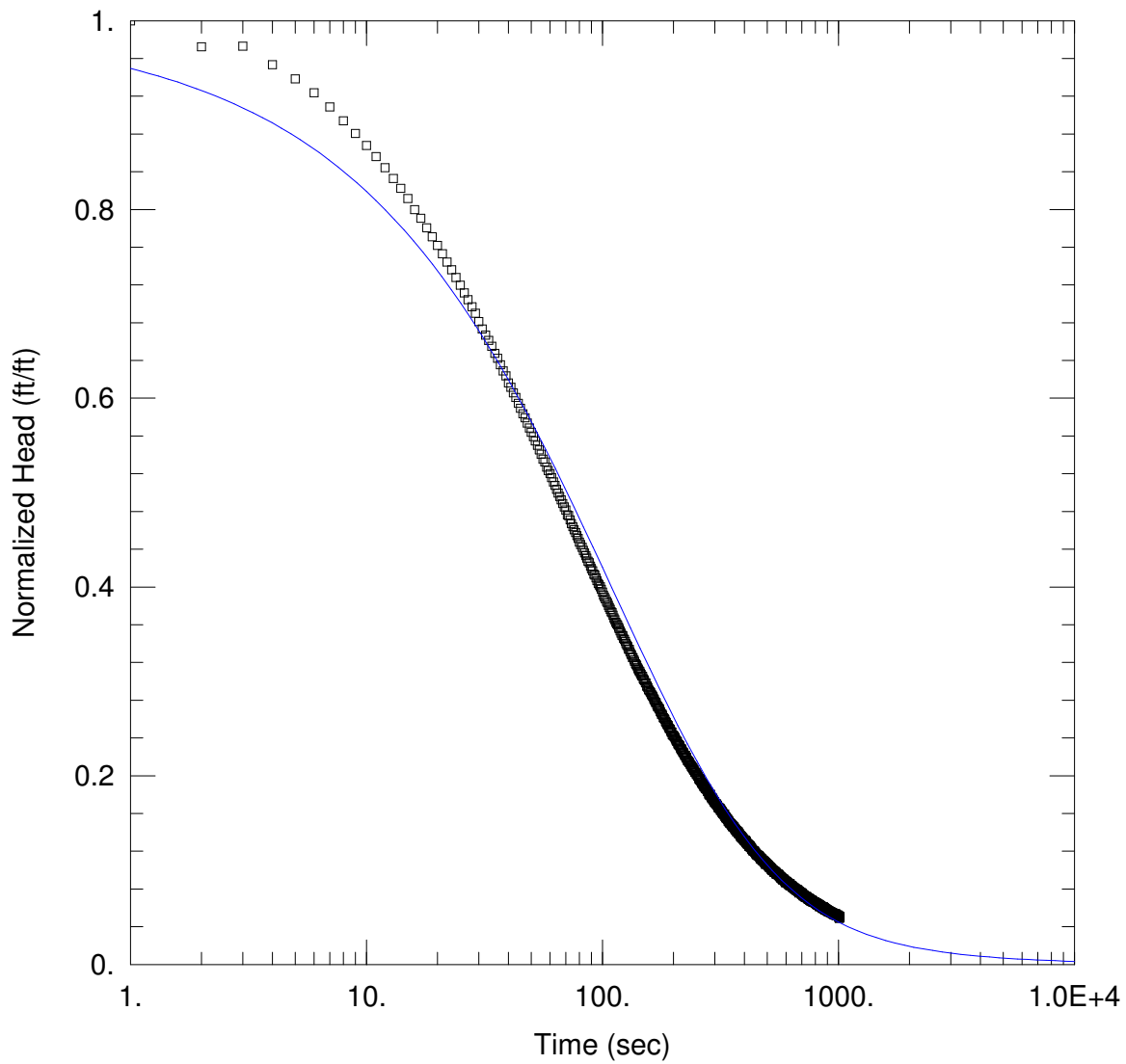
Initial Displacement: 3.78 ft
 Total Well Penetration Depth: 20.53 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.93 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 1.433$ ft/day

Solution Method: Bouwer-Rice
 $y_0 = 2.275$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-16_pump.aqt
 Date: 08/12/20

Time: 08:24:33

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-16_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 20.93 ft

WELL DATA (New Well)

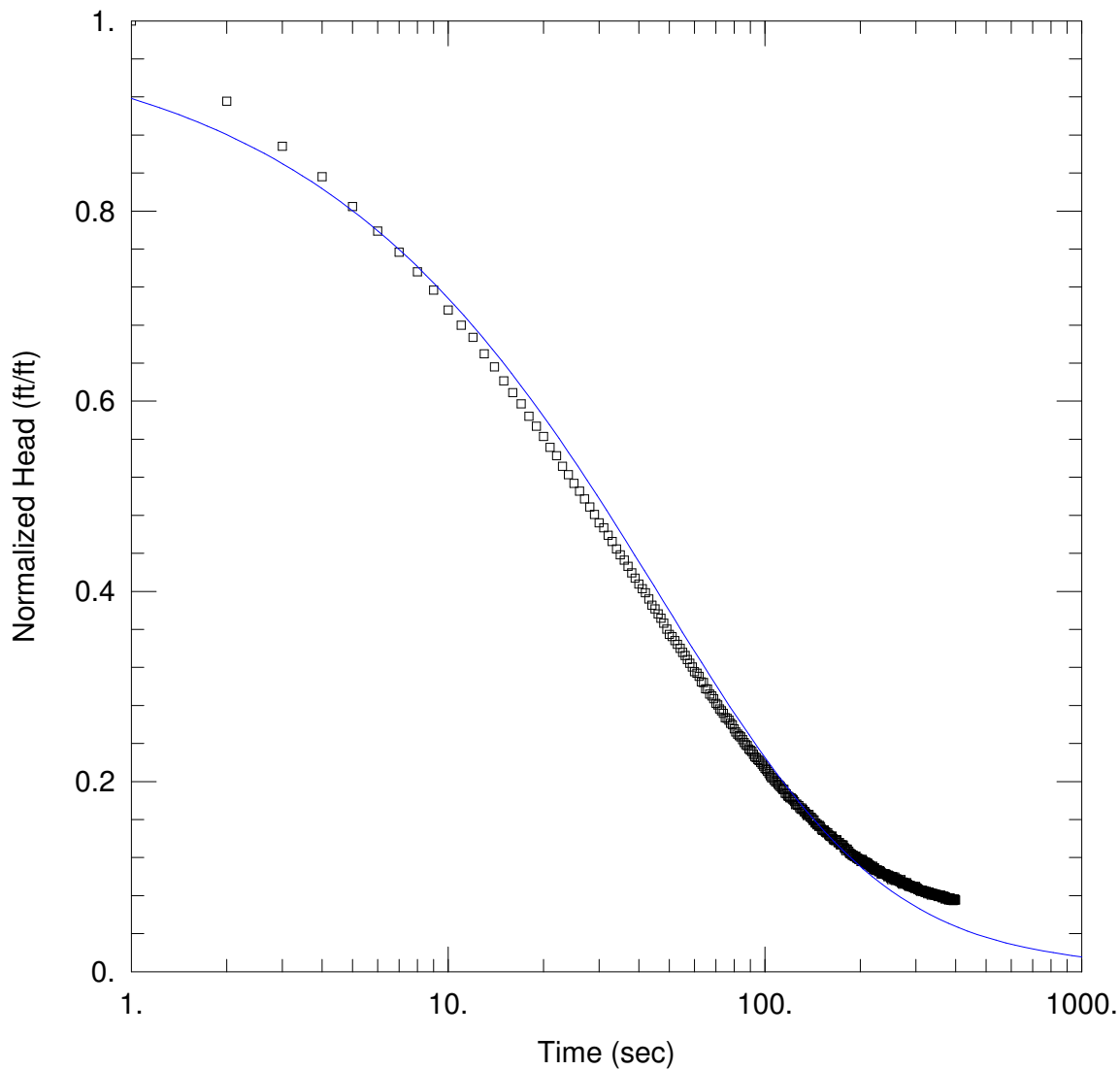
Initial Displacement: 5.64 ft
 Total Well Penetration Depth: 20.53 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.93 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 Kr = 0.3851 ft/day
 Kz/Kr = 0.1

Solution Method: KGS Model
 Ss = 0.004673 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-16_slug.aqt

Date: 08/12/20

Time: 08:30:42

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-16_slug

Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 20.93 ft

WELL DATA (New Well)

Initial Displacement: 3.78 ft

Total Well Penetration Depth: 20.53 ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.93 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

SOLUTION

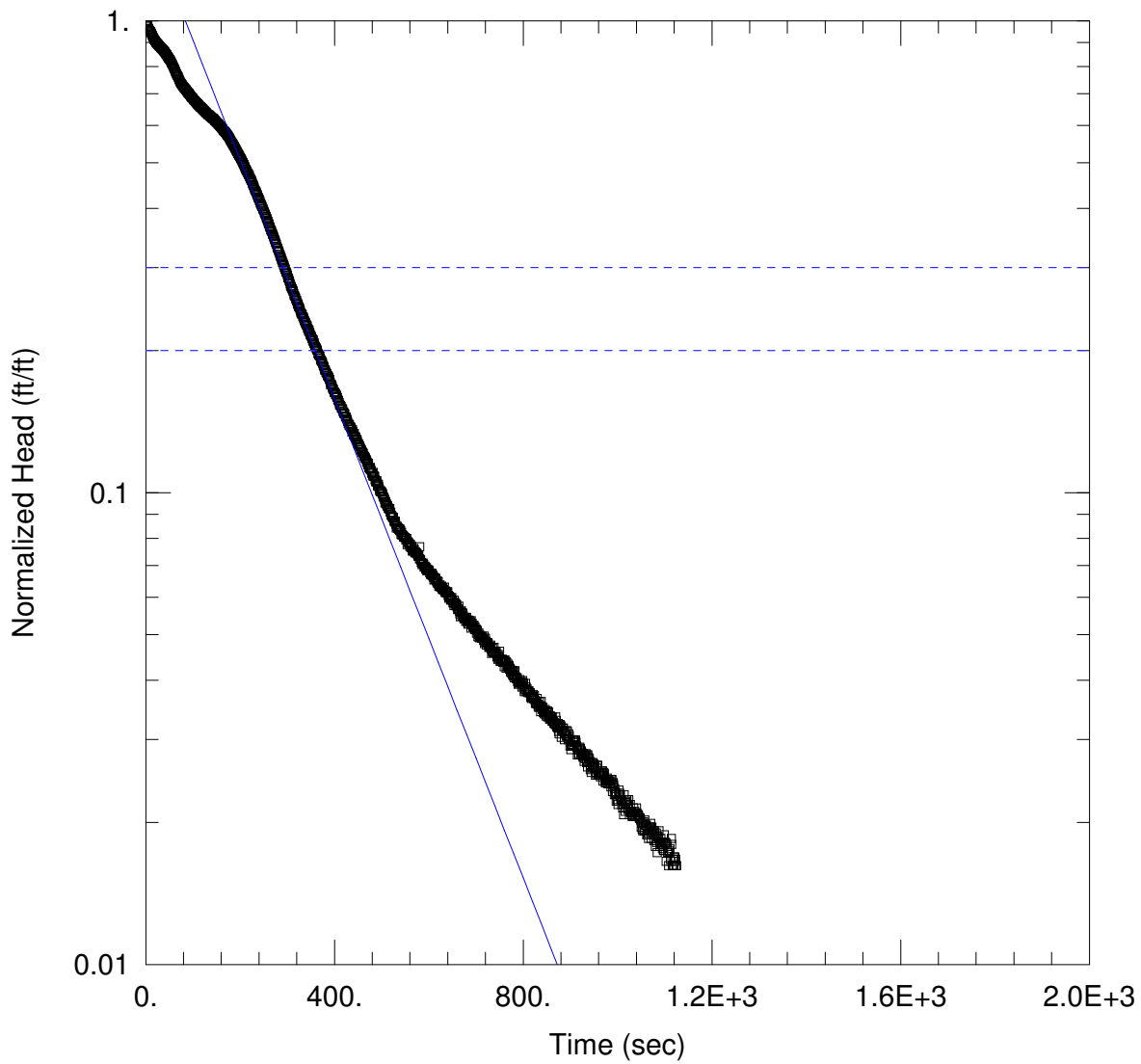
Aquifer Model: Unconfined

Kr = 0.9203 ft/day

Kz/Kr = 0.1

Solution Method: KGS Model

Ss = 0.004673 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-17_pump.aqt
 Date: 08/12/20

Time: 08:38:56

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-17_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 9.35 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

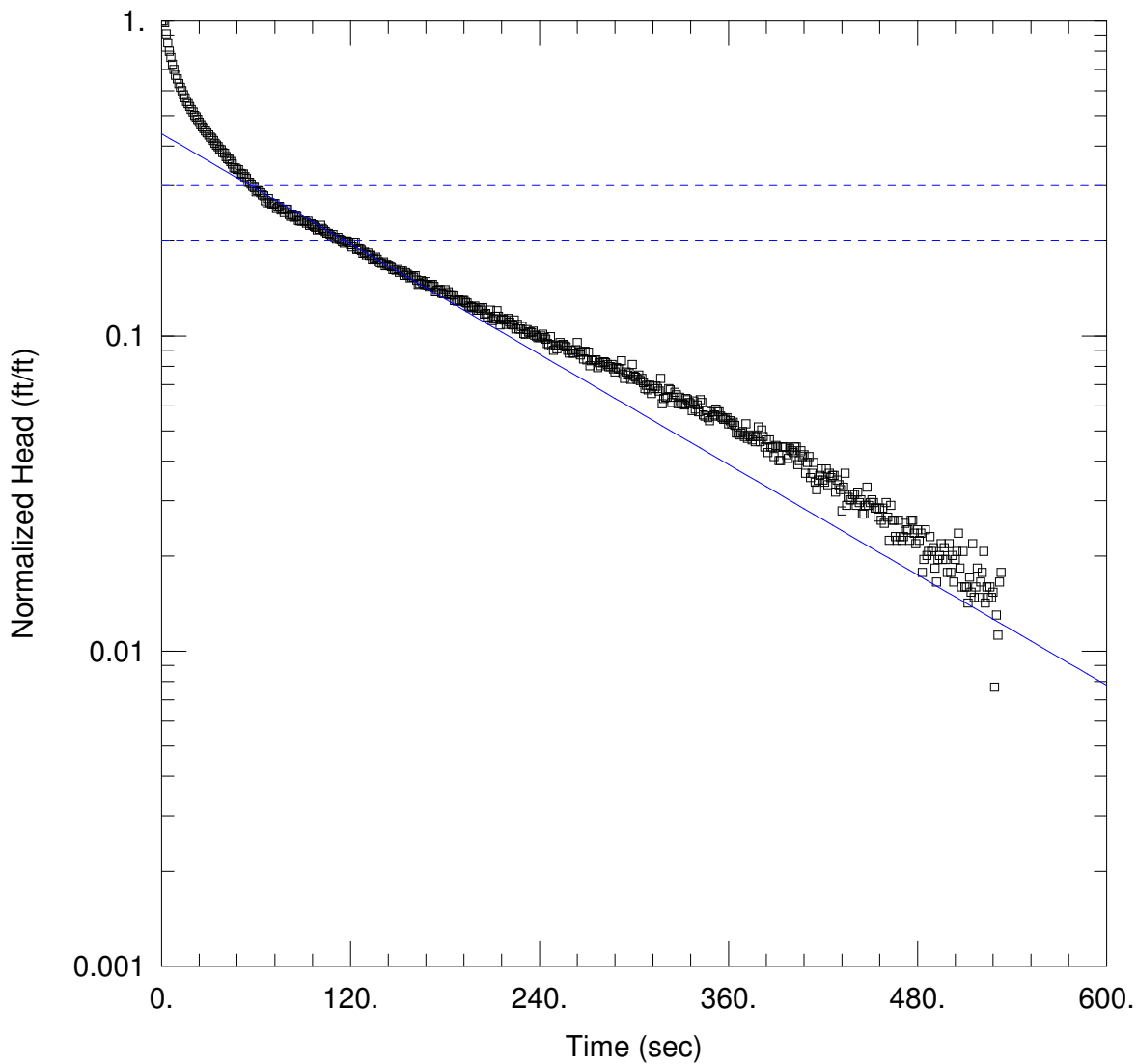
Initial Displacement: 5.68 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 9.35 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 0.5953$ ft/day

Solution Method: Bouwer-Rice
 $y_0 = 9.263$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-17_slug.aqt
 Date: 08/12/20

Time: 08:41:38

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-17_slug
 Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 9.07 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

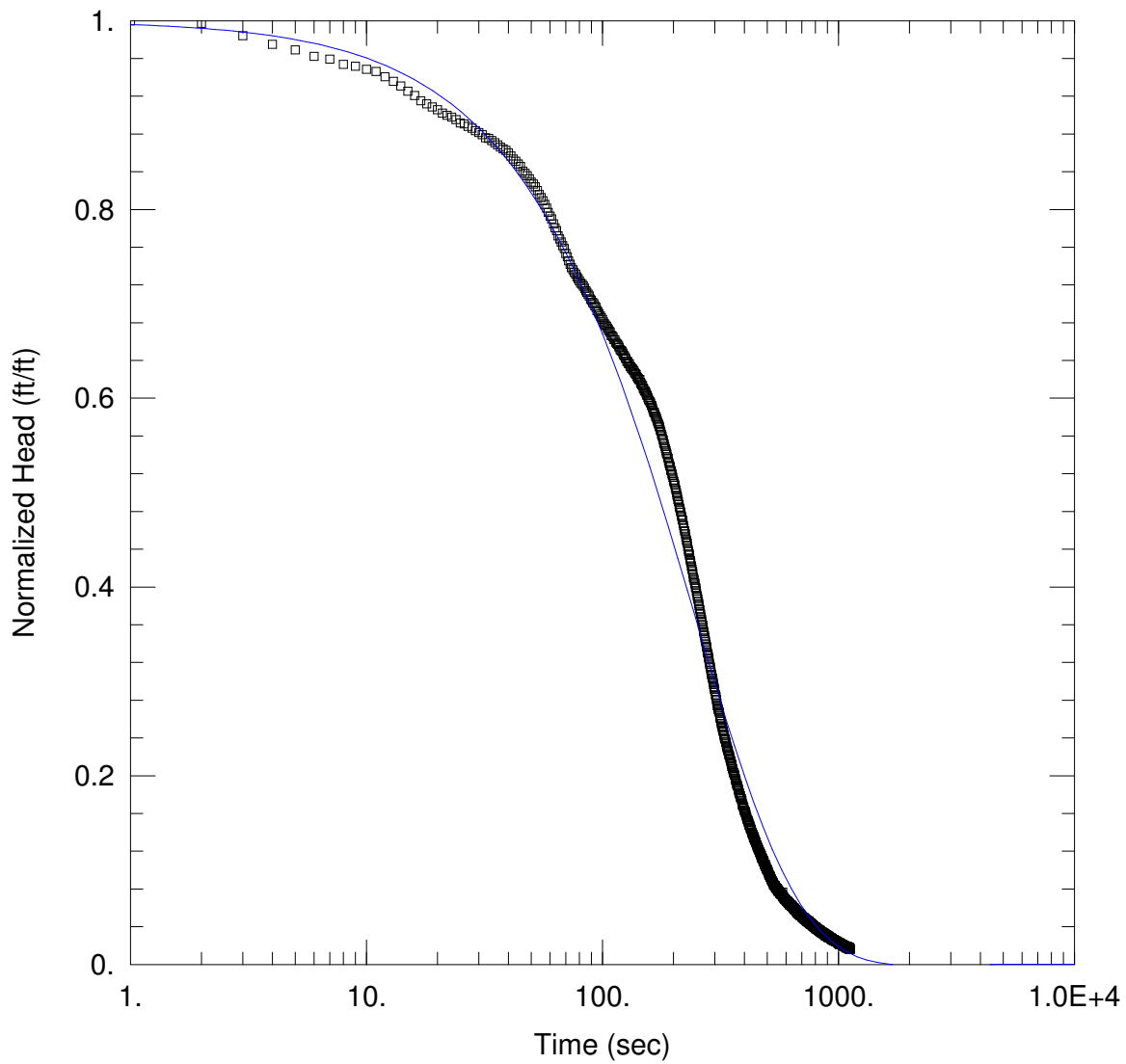
Initial Displacement: 1.69 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 9.07 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 0.7049$ ft/day

Solution Method: Bowser-Rice
 $y_0 = 0.7411$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-17_pump.aqt
 Date: 08/12/20

Time: 08:40:13

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-17_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 9.35 ft

WELL DATA (New Well)

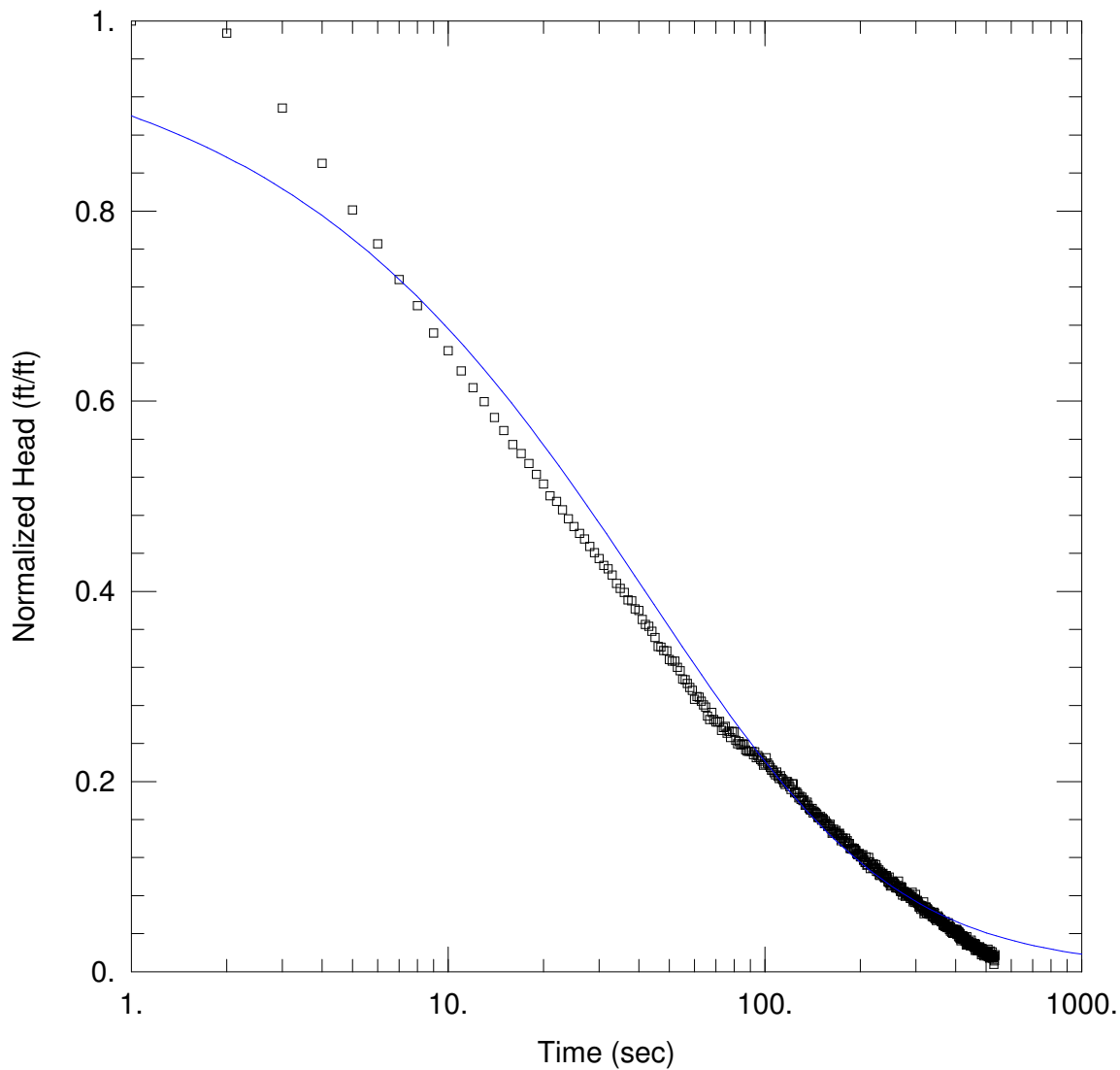
Initial Displacement: 5.68 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 9.35 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 Kr = 0.5803 ft/day
 Kz/Kr = 0.1

Solution Method: KGS Model
 Ss = 1.057E-11 ft⁻¹



WELL TEST ANALYSIS

Data Set: \...\HGWC-17_slug.aqt

Date: 08/12/20

Time: 08:43:07

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-17_slug

Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 9.07 ft

WELL DATA (New Well)

Initial Displacement: 1.69 ft

Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.07 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

SOLUTION

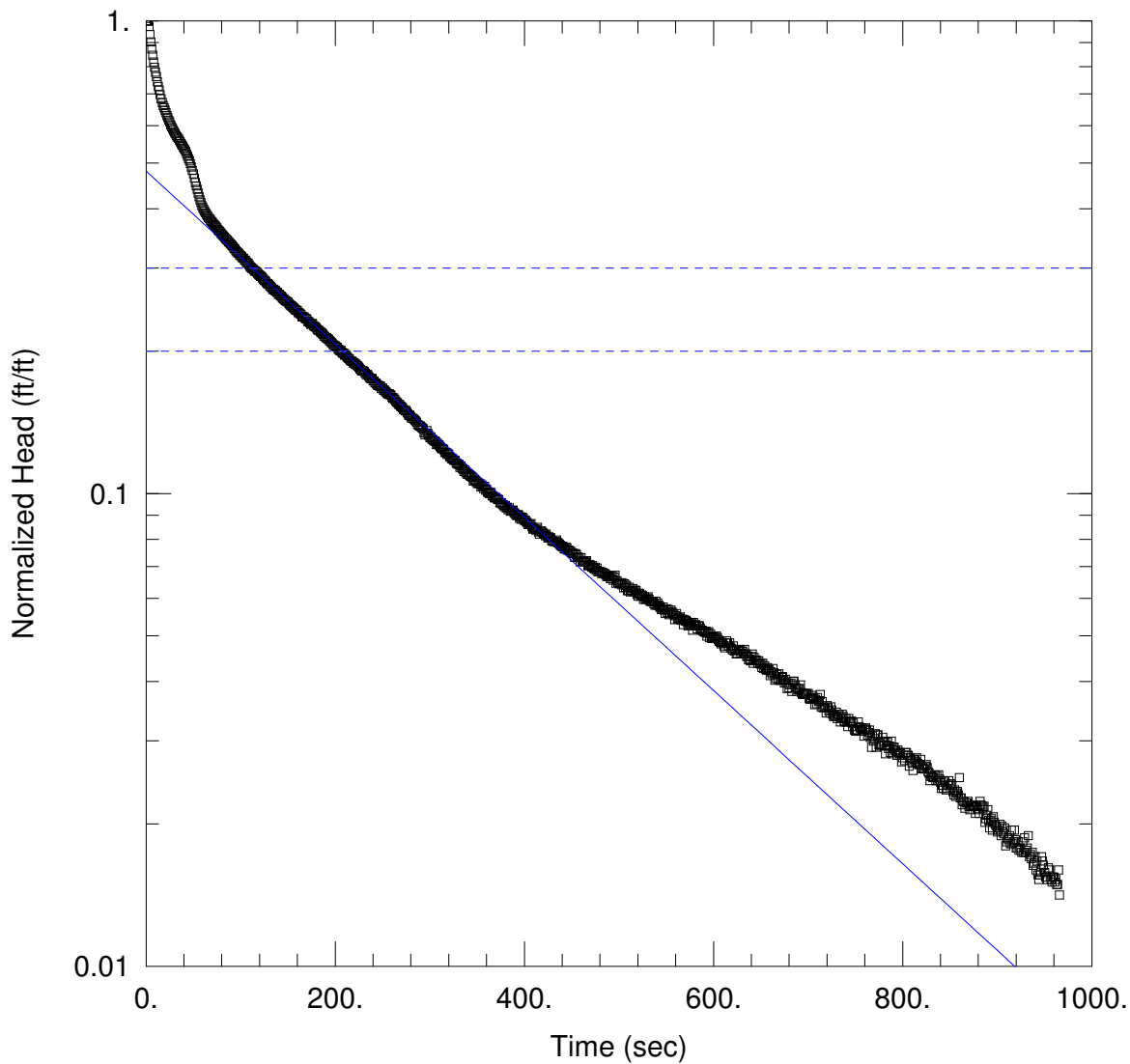
Aquifer Model: Unconfined

Kr = 0.8583 ft/day

Kz/Kr = 0.1

Solution Method: KGS Model

Ss = 0.01089 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-18_pump.aqt
 Date: 08/12/20

Time: 08:44:46

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-18_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 8.89 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

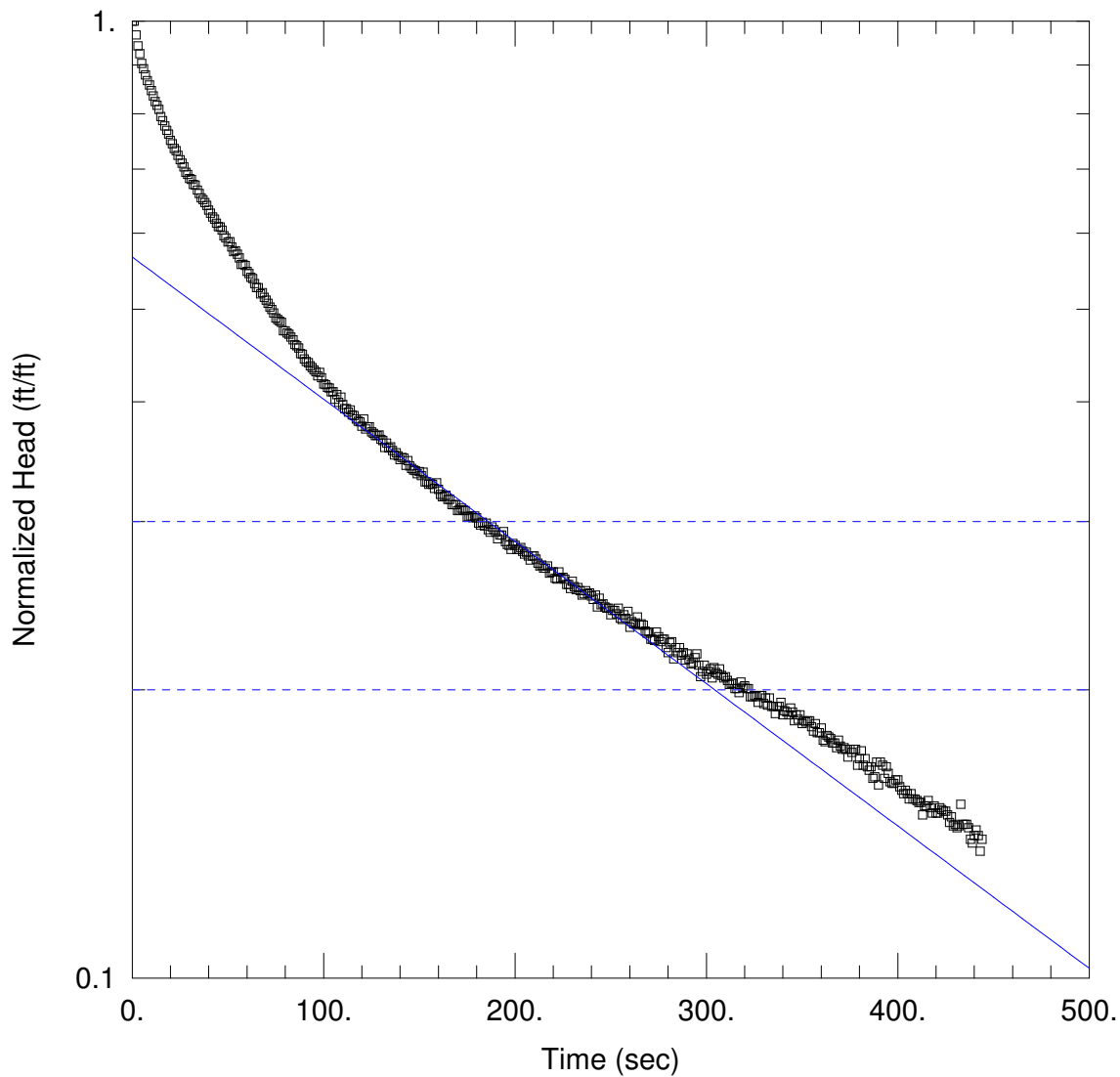
Initial Displacement: 5.51 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 8.89 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 0.4511$ ft/day

Solution Method: Bowyer-Rice
 $y_0 = 2.649$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-18_slug.aqt
 Date: 08/12/20

Time: 08:54:27

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-18_slug
 Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 8.91 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

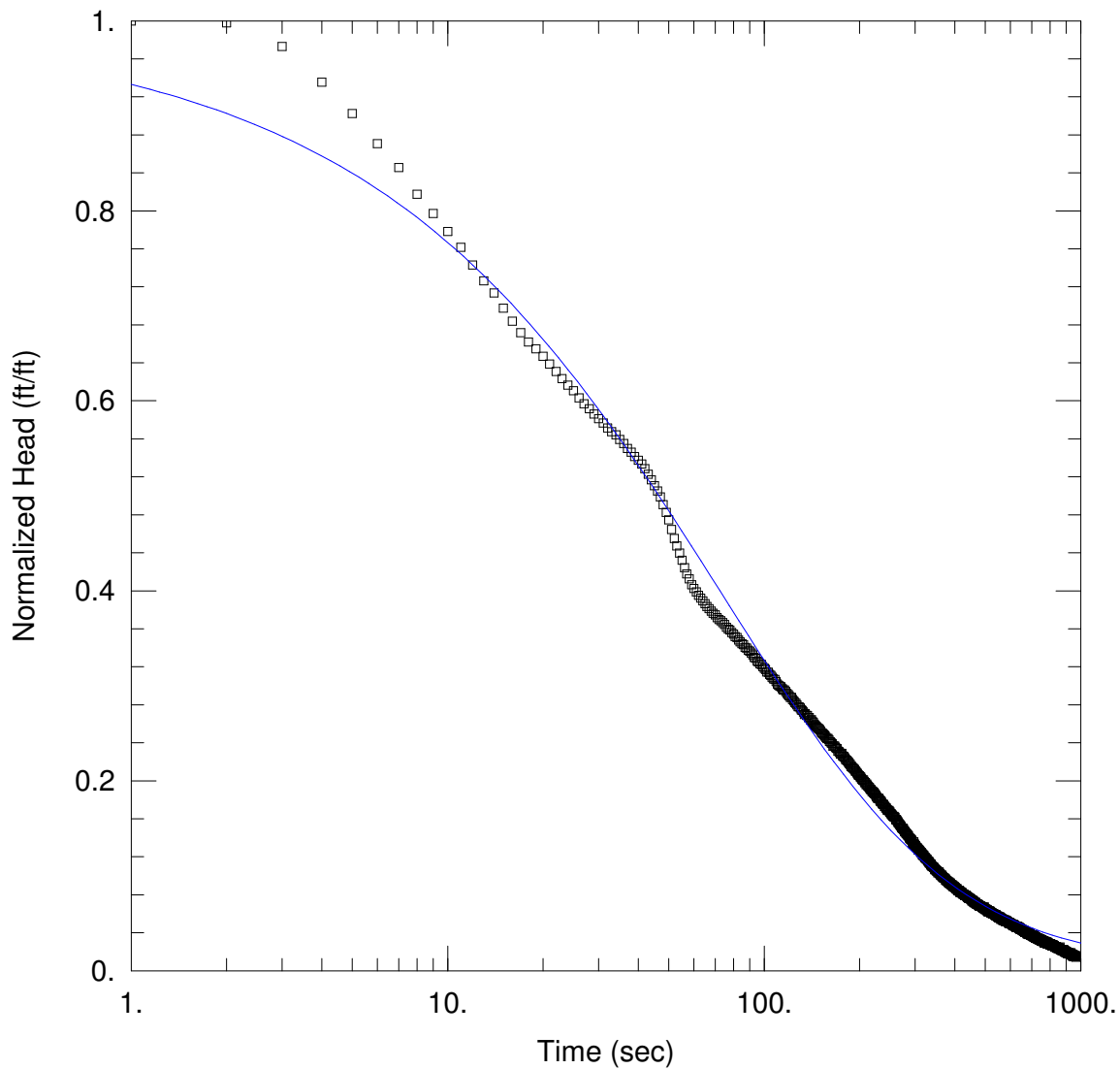
Initial Displacement: 1.54 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 8.91 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 0.3654$ ft/day

Solution Method: Bouwer-Rice
 $y_0 = 0.873$ ft



WELL TEST ANALYSIS

Data Set: \\...\HGWC-18_pump.aqt
 Date: 08/12/20

Time: 08:45:55

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: HGWC-18_pump
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 8.89 ft

WELL DATA (New Well)

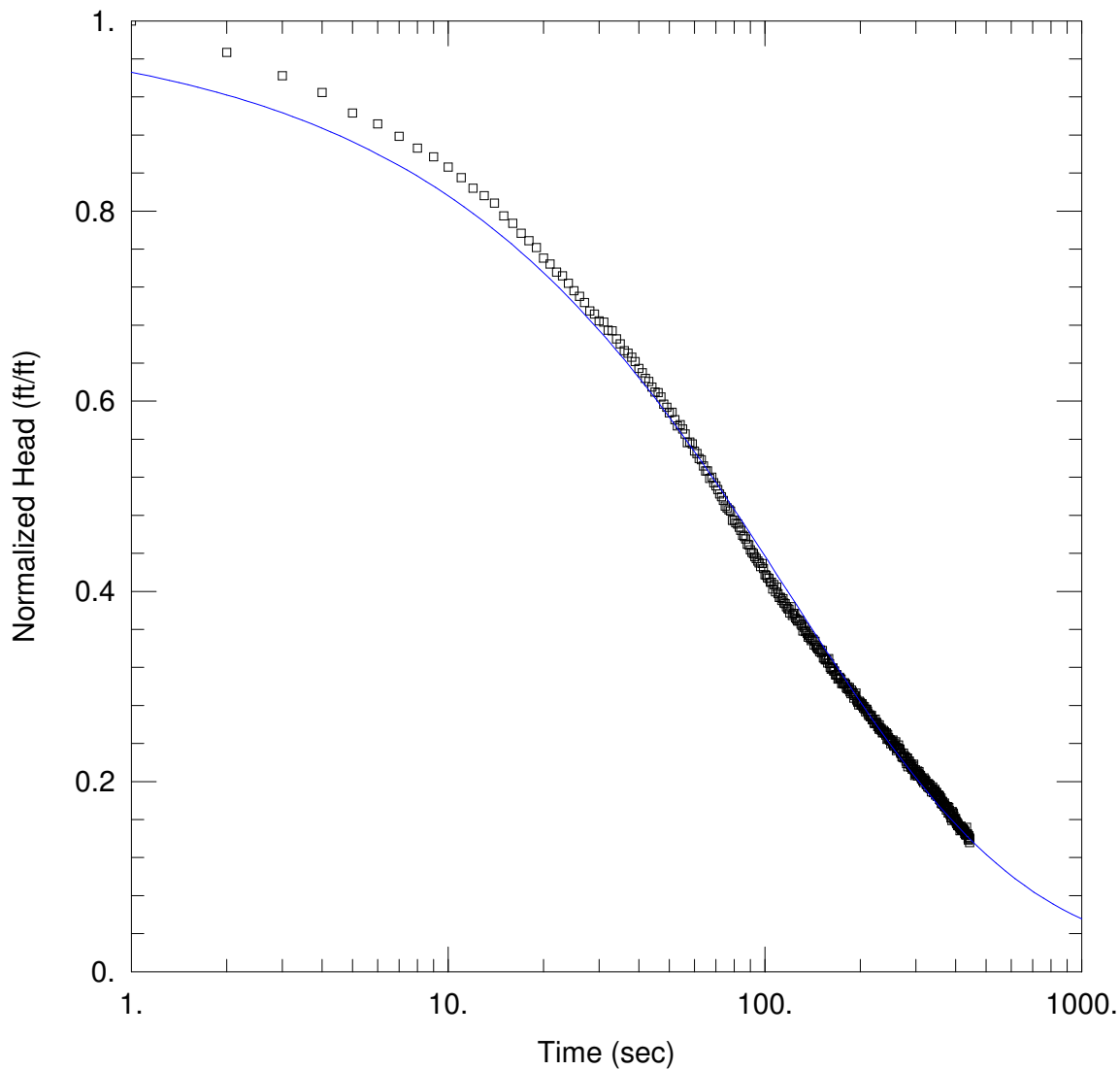
Initial Displacement: 5.51 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 8.89 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 Kr = 0.6038 ft/day
 Kz/Kr = 0.1

Solution Method: KGS Model
 Ss = 0.006744 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\HGWC-18_slug.aqt

Date: 08/12/20

Time: 08:52:57

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: HGWC-18_slug

Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 8.91 ft

WELL DATA (New Well)

Initial Displacement: 1.54 ft

Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.91 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

SOLUTION

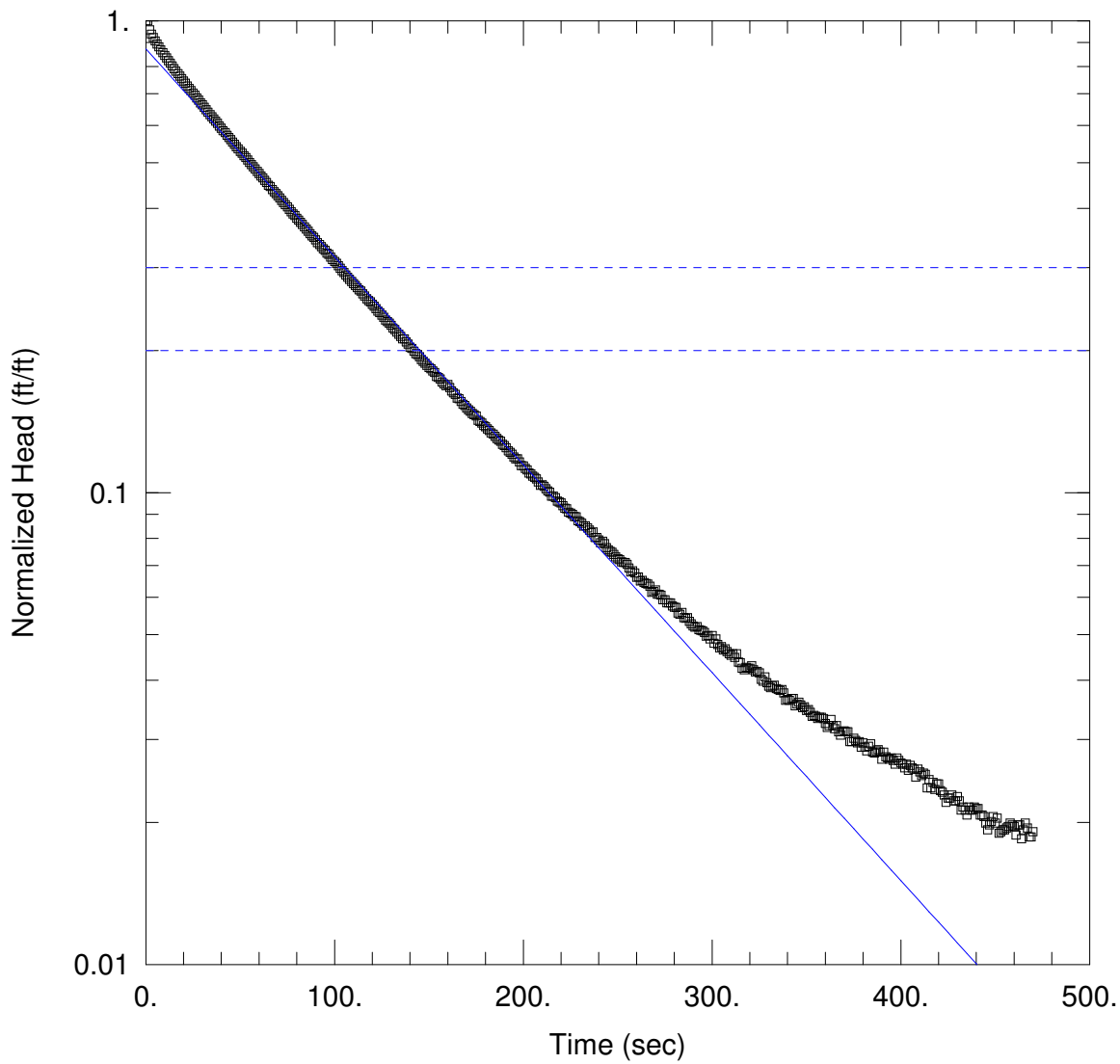
Aquifer Model: Unconfined

Kr = 0.348 ft/day

Kz/Kr = 0.1

Solution Method: KGS Model

Ss = 0.008056 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\MW-21D.aqt
 Date: 08/12/20

Time: 08:56:22

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: MW-21D
 Test Date: 7/27/2020

AQUIFER DATA

Saturated Thickness: 34.16 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

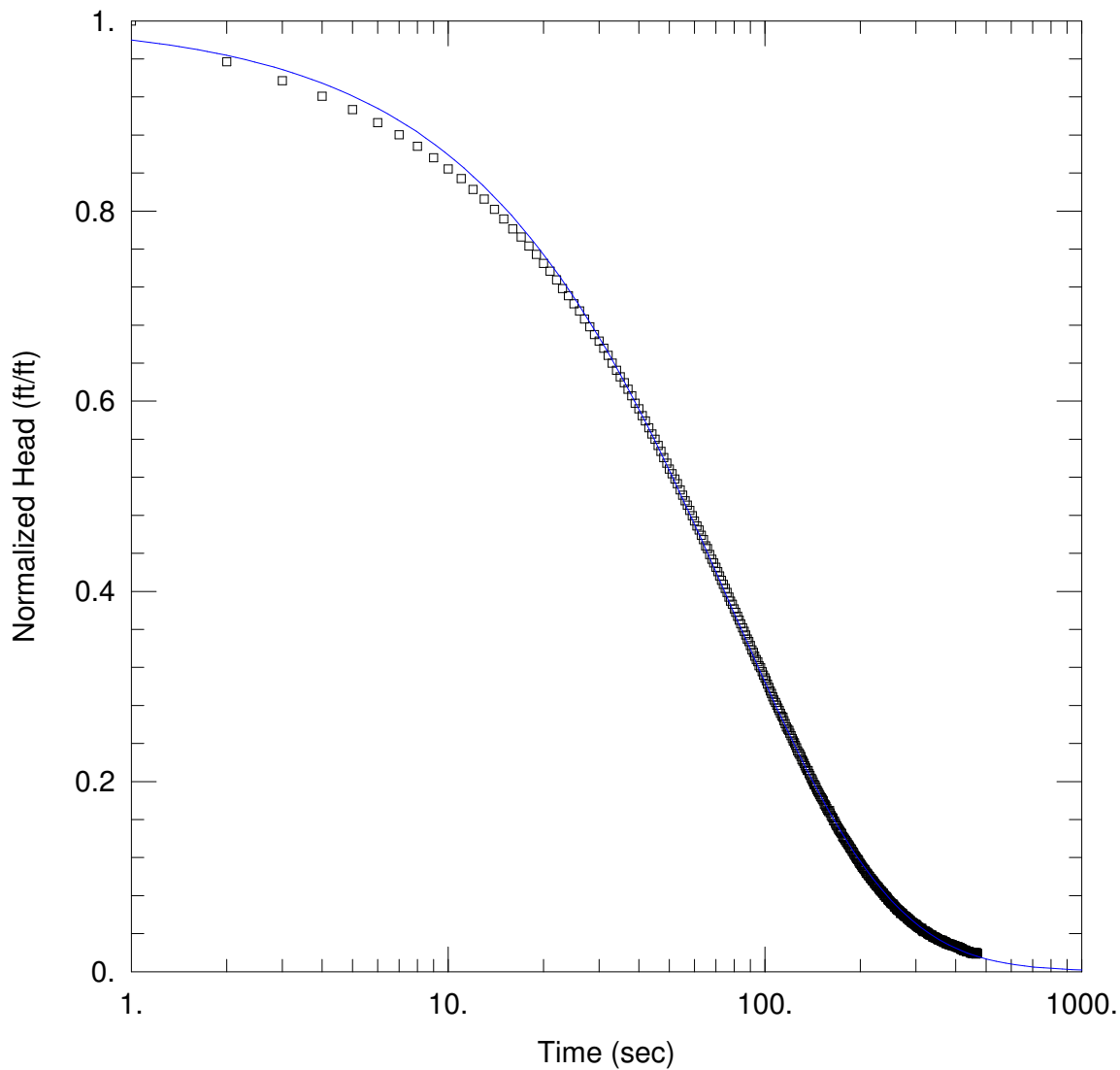
Initial Displacement: 6.17 ft
 Total Well Penetration Depth: 33.83 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 34.16 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 1.416$ ft/day

Solution Method: Bouwer-Rice
 $y_0 = 5.379$ ft



WELL TEST ANALYSIS

Data Set: \\...\MW-21D.aqt
 Date: 08/12/20

Time: 08:57:22

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: MW-21D
 Test Date: 7/27/2020

AQUIFER DATA

Saturated Thickness: 34.16 ft

WELL DATA (New Well)

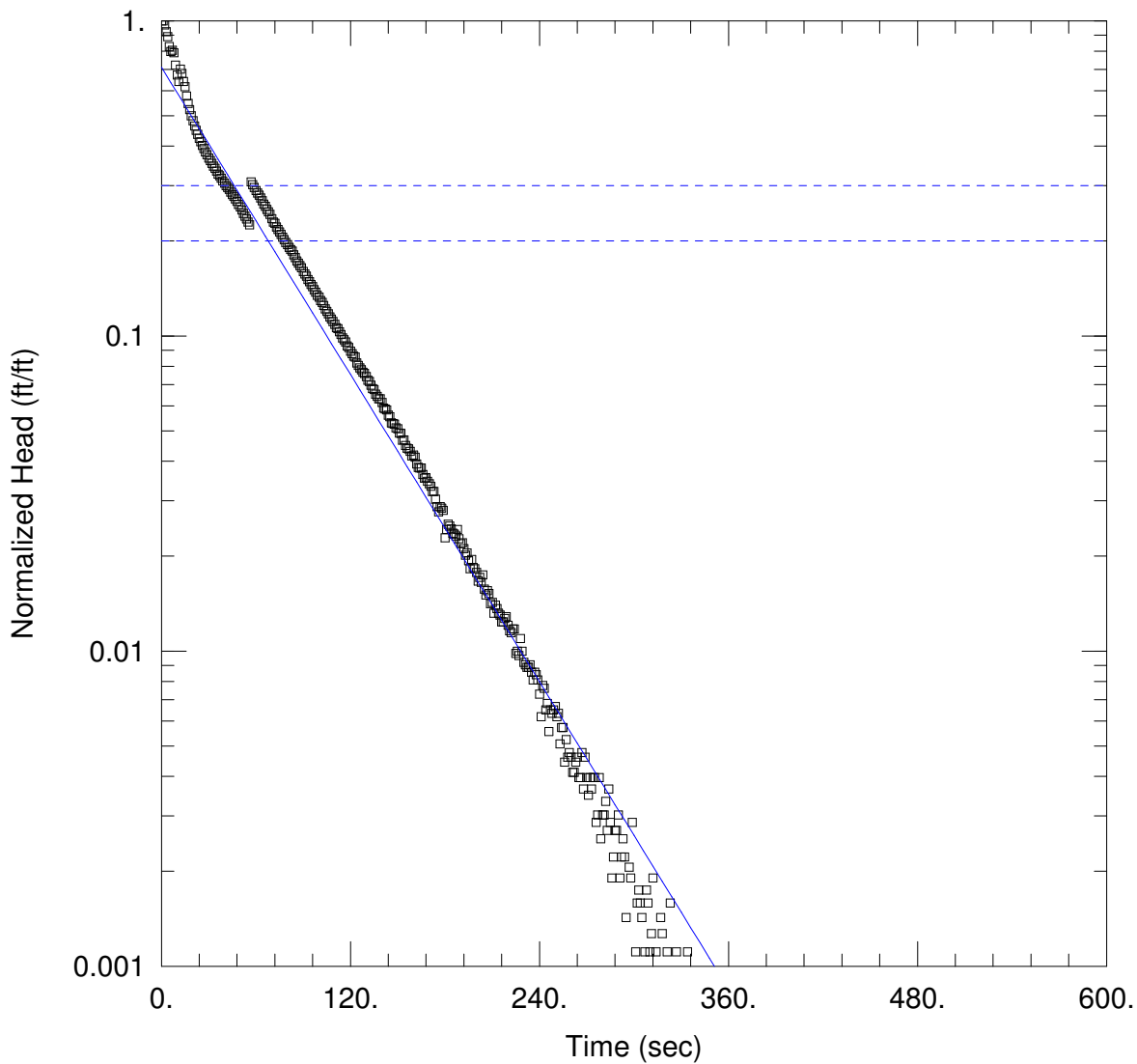
Initial Displacement: 6.17 ft
 Total Well Penetration Depth: 33.83 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 34.16 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 Kr = 1.676 ft/day
 Kz/Kr = 0.1

Solution Method: KGS Model
 Ss = 3.989E-6 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\MW-23D.aqt
 Date: 08/12/20

Time: 09:02:46

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: MW-23D
 Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 45.56 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

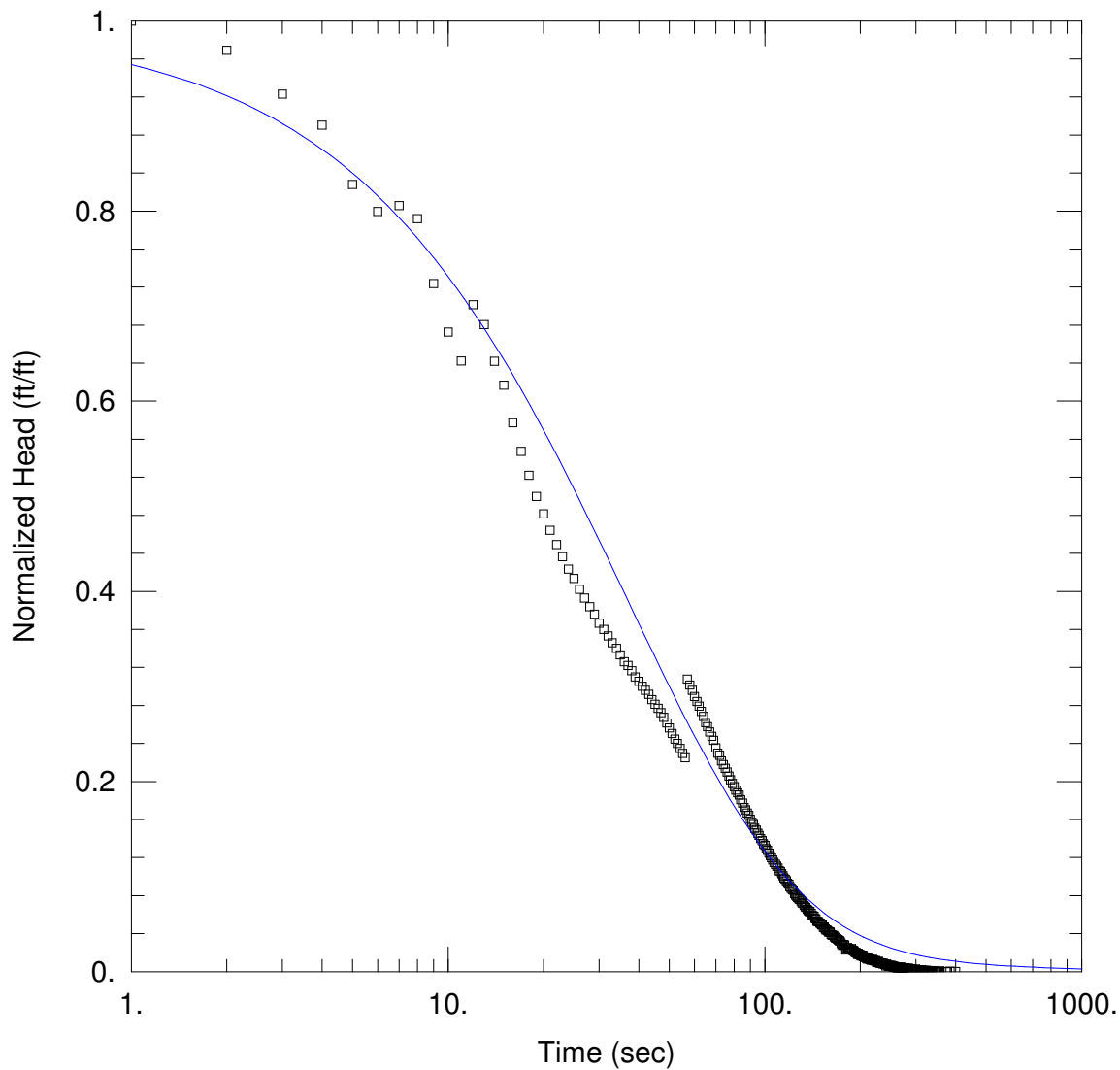
Initial Displacement: 6.3 ft
 Total Well Penetration Depth: 45.23 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 45.56 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 2.697$ ft/day

Solution Method: Bowser-Rice
 $y_0 = 4.487$ ft



WELL TEST ANALYSIS

Data Set: N:\...\MW-23D.aqt

Date: 08/25/20

Time: 14:56:56

PROJECT INFORMATION

Company: Geosyntec Consultants

Client: Southern Company Services

Project: GW6581B

Location: AP-2

Test Well: MW-23D

Test Date: 7/29/2020

AQUIFER DATA

Saturated Thickness: 45.56 ft

WELL DATA (New Well)

Initial Displacement: 6.3 ft

Total Well Penetration Depth: 45.23 ft

Casing Radius: 0.083 ft

Static Water Column Height: 45.56 ft

Screen Length: 10. ft

Well Radius: 0.083 ft

SOLUTION

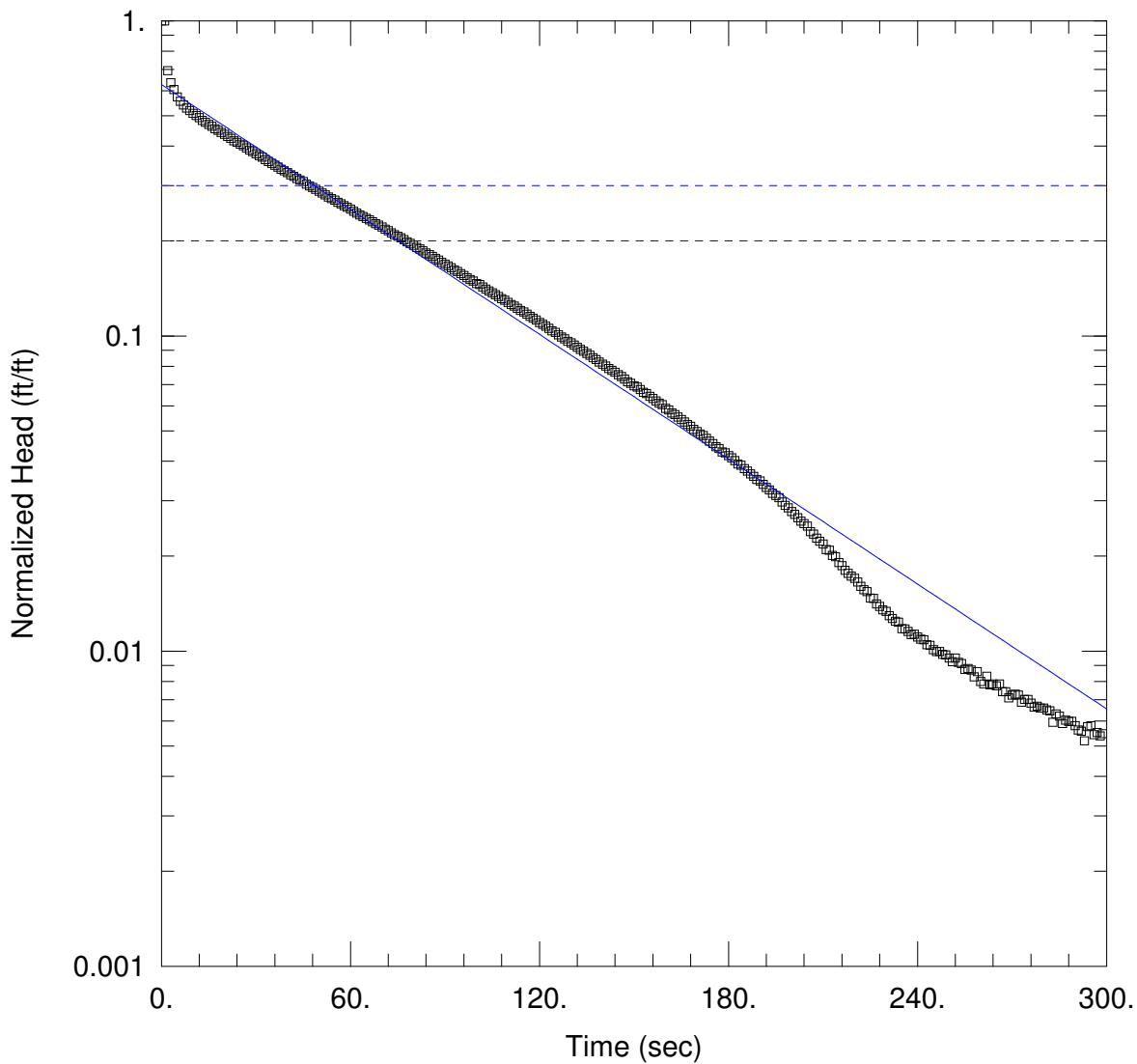
Aquifer Model: Unconfined

Kr = 2.8 ft/day

Kz/Kr = 0.1

Solution Method: KGS Model

Ss = 4.5E-5 ft⁻¹



WELL TEST ANALYSIS

Data Set: \\...\MW-34D.aqt
 Date: 08/12/20

Time: 09:05:08

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: MW-34D
 Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 43.3 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (New Well)

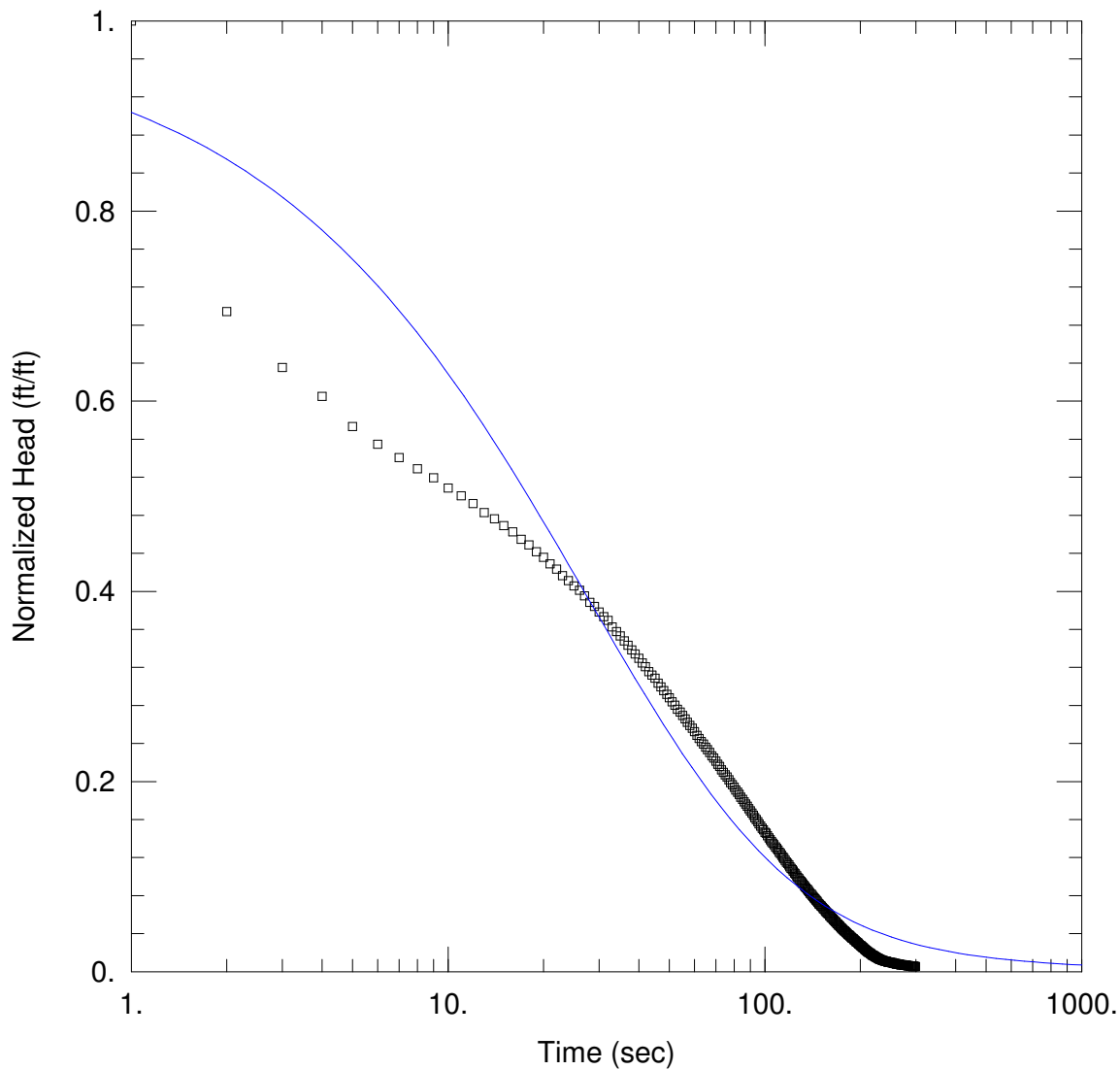
Initial Displacement: 21.38 ft
 Total Well Penetration Depth: 42.97 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 43.3 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 $K = 2.18$ ft/day

Solution Method: Bouwer-Rice
 $y_0 = 13.41$ ft



WELL TEST ANALYSIS

Data Set: \\...\MW-34D.aqt
 Date: 08/12/20

Time: 09:08:53

PROJECT INFORMATION

Company: Geosyntec Consultants
 Client: Southern Company Services
 Project: GW6581B
 Location: AP-2
 Test Well: MW-34D
 Test Date: 7/28/2020

AQUIFER DATA

Saturated Thickness: 43.3 ft

WELL DATA (New Well)

Initial Displacement: 21.38 ft
 Total Well Penetration Depth: 42.97 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 43.3 ft
 Screen Length: 10. ft
 Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
 Kr = 1.908 ft/day
 Kz/Kr = 0.1

Solution Method: KGS Model
 Ss = 0.002285 ft⁻¹

APPENDIX D

Laboratory Analytical and Field Sampling Forms

APPENDIX D1

Laboratory Analytical Data Packages and Data Validation Reports

Laboratory Reports

February 04, 2020

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

RE: Project: Plant Hammond
Pace Project No.: 2628190

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond

Pace Project No.: 2628190

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2628190

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628190001	MW-33	Water	01/22/20 14:06	01/23/20 13:58
2628190002	EB-01	Water	01/22/20 14:32	01/23/20 13:58
2628190003	FB-01	Water	01/22/20 14:48	01/23/20 13:58

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond

Pace Project No.: 2628190

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2628190001	MW-33	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2628190002	EB-01	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2628190003	FB-01	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	2	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant Hammond

Pace Project No.: 2628190

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628190001	MW-33					
EPA 6010D	Calcium	638	mg/L	100	01/28/20 14:49	
EPA 6020B	Boron	11.2	mg/L	0.50	02/03/20 13:58	
EPA 6020B	Cobalt	0.052	mg/L	0.025	02/03/20 13:58	
SM 2540C	Total Dissolved Solids	2310	mg/L	10.0	01/24/20 16:14	
EPA 300.0 Rev 2.1 1993	Chloride	231	mg/L	25.0	01/28/20 23:03	
EPA 300.0 Rev 2.1 1993	Fluoride	0.18J	mg/L	0.30	01/28/20 12:40	
EPA 300.0 Rev 2.1 1993	Sulfate	1250	mg/L	25.0	01/28/20 23:03	
2628190002	EB-01					
EPA 6020B	Boron	0.045J	mg/L	0.10	01/31/20 19:41	
2628190003	FB-01					
EPA 6020B	Boron	0.013J	mg/L	0.10	01/31/20 19:47	
SM 2540C	Total Dissolved Solids	17.0	mg/L	10.0	01/24/20 16:14	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628190

Sample: MW-33		Lab ID: 2628190001		Collected: 01/22/20 14:06		Received: 01/23/20 13:58		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	638	mg/L	100	14.1	100	01/24/20 15:36	01/28/20 14:49	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	11.2	mg/L	0.50	0.025	5	01/30/20 17:00	02/03/20 13:58	7440-42-8	
Cobalt	0.052	mg/L	0.025	0.0015	5	01/30/20 17:00	02/03/20 13:58	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	2310	mg/L	10.0	10.0	1		01/24/20 16:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	231	mg/L	25.0	15.0	25		01/28/20 23:03	16887-00-6	
Fluoride	0.18J	mg/L	0.30	0.050	1		01/28/20 12:40	16984-48-8	
Sulfate	1250	mg/L	25.0	12.5	25		01/28/20 23:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond
Pace Project No.: 2628190

Sample: EB-01		Lab ID: 2628190002		Collected: 01/22/20 14:32		Received: 01/23/20 13:58		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	ND	mg/L	1.0	0.14	1	01/24/20 15:36	01/25/20 04:25	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.045J	mg/L	0.10	0.0049	1	01/30/20 17:00	01/31/20 19:41	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00030	1	01/30/20 17:00	01/31/20 19:41	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		01/24/20 16:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	ND	mg/L	1.0	0.60	1		01/28/20 12:55	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		01/28/20 12:55	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		01/28/20 12:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond

Pace Project No.: 2628190

Sample: FB-01		Lab ID: 2628190003		Collected: 01/22/20 14:48		Received: 01/23/20 13:58		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Calcium	ND	mg/L	1.0	0.14	1	01/24/20 15:36	01/25/20 04:30	7440-70-2	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	0.013J	mg/L	0.10	0.0049	1	01/30/20 17:00	01/31/20 19:47	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00030	1	01/30/20 17:00	01/31/20 19:47	7440-48-4	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	17.0	mg/L	10.0	10.0	1		01/24/20 16:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Chloride	ND	mg/L	1.0	0.60	1		01/28/20 13:09	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		01/28/20 13:09	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		01/28/20 13:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2628190

QC Batch: 42376 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D MET

Associated Lab Samples: 2628190001, 2628190002, 2628190003

METHOD BLANK: 193287 Matrix: Water

Associated Lab Samples: 2628190001, 2628190002, 2628190003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	01/25/20 02:18	

LABORATORY CONTROL SAMPLE: 193288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 193289 193290

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2628044001 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	5540 ug/L	1	1	6.6	6.7	108	115	75-125	1	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond

Pace Project No.: 2628190

QC Batch: 42642 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628190001, 2628190002, 2628190003

METHOD BLANK: 194851 Matrix: Water

Associated Lab Samples: 2628190001, 2628190002, 2628190003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.0049	01/31/20 19:24	
Cobalt	mg/L	ND	0.0050	0.00030	01/31/20 19:24	

LABORATORY CONTROL SAMPLE: 194852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.1	108	80-120	
Cobalt	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 194853 194854

Parameter	Units	2628247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.24J	1	1	1.2	1.2	94	94	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond
Pace Project No.: 2628190

QC Batch: 521472 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2628190001, 2628190002, 2628190003

METHOD BLANK: 2789708 Matrix: Water
Associated Lab Samples: 2628190001, 2628190002, 2628190003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/28/20 05:14	
Fluoride	mg/L	ND	0.10	0.050	01/28/20 05:14	
Sulfate	mg/L	ND	1.0	0.50	01/28/20 05:14	

LABORATORY CONTROL SAMPLE: 2789709

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.3	103	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	51.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2789710 2789711

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92461867001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	89.5	50	50	50	135	135	91	90	90-110	1	10	
Fluoride	mg/L	1.4	2.5	2.5	2.5	3.8	3.9	96	97	90-110	1	10	
Sulfate	mg/L	88.2	50	50	50	127	127	78	77	90-110	0	10 M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2789712 2789713

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92461499040	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.0	50	50	50	52.8	53.0	100	100	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.5	2.3	2.3	89	91	90-110	2	10 M1	
Sulfate	mg/L	20.0	50	50	50	70.4	70.6	101	101	90-110	0	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond

Pace Project No.: 2628190

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond

Pace Project No.: 2628190

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628190001	MW-33	EPA 3010A	42376	EPA 6010D	42392
2628190002	EB-01	EPA 3010A	42376	EPA 6010D	42392
2628190003	FB-01	EPA 3010A	42376	EPA 6010D	42392
2628190001	MW-33	EPA 3005A	42642	EPA 6020B	42652
2628190002	EB-01	EPA 3005A	42642	EPA 6020B	42652
2628190003	FB-01	EPA 3005A	42642	EPA 6020B	42652
2628190001	MW-33	SM 2540C	42383		
2628190002	EB-01	SM 2540C	42383		
2628190003	FB-01	SM 2540C	42383		
2628190001	MW-33	EPA 300.0 Rev 2.1 1993	521472		
2628190002	EB-01	EPA 300.0 Rev 2.1 1993	521472		
2628190003	FB-01	EPA 300.0 Rev 2.1 1993	521472		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2628190

Client Name: Georgia Power

PH: KH Due Date: 02/06/20
CLIENT: 26-GA Power

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [x] Pace Other
Tracking #: _____

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

Packing Material: [] Bubble Wrap [] Bubble Bags [x] None [] Other

Thermometer Used TH9 230 Type of Ice: [x] Ice Blue None [] Samples on ice, cooling process has begun

Cooler Temperature 4.0 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and initials of person examining contents: HW 1/23/20

Comments:

Table with 16 rows of checklist items and checkboxes. Items include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, W-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

March 17, 2020

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

RE: Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 03, 2020 and March 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



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CERTIFICATIONS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629701001	HGWA-4	Water	03/02/20 14:25	03/03/20 12:20
2629701002	HGWA-5	Water	03/02/20 10:50	03/03/20 12:20
2629701003	HGWA-6	Water	03/02/20 12:00	03/03/20 12:20
2629701004	MW-23D	Water	03/02/20 13:40	03/03/20 12:20
2629701005	MW-22	Water	03/02/20 16:10	03/03/20 12:20
2629701006	HGWA-1	Water	03/02/20 11:39	03/03/20 12:20
2629701007	HGWA-2	Water	03/02/20 11:10	03/03/20 12:20
2629701008	HGWA-3	Water	03/02/20 13:15	03/03/20 12:20
2629701009	HGWC-16	Water	03/03/20 12:37	03/04/20 10:05
2629701010	HGWC-17	Water	03/03/20 14:20	03/04/20 10:05
2629701011	FB-02	Water	03/03/20 19:07	03/04/20 10:05
2629701012	HGWC-14	Water	03/03/20 11:20	03/04/20 10:05
2629701013	HGWC-15	Water	03/03/20 12:20	03/04/20 10:05
2629701014	HGWC-18	Water	03/03/20 09:10	03/04/20 10:05
2629701015	MW-21D	Water	03/03/20 10:15	03/04/20 10:05
2629701016	FD-01	Water	03/03/20 00:00	03/04/20 10:05

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701001	HGWA-4	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701002	HGWA-5	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701003	HGWA-6	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701004	MW-23D	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701005	MW-22	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2629701006	HGWA-1	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701007	HGWA-2	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701008	HGWA-3	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701009	HGWC-16	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701010	HGWC-17	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701011	FB-02	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701012	HGWC-14	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2629701013	HGWC-15	EPA 6020B	CSW	12	PASI-GA

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SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701014	HGWC-18	EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
2629701015	MW-21D	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
2629701016	FD-01	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

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SUMMARY OF DETECTION

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2629701001	HGWA-4					
	Field pH	5.63	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.023	mg/L	0.010	03/10/20 19:04	
EPA 6020B	Beryllium	0.00019J	mg/L	0.0030	03/10/20 19:04	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	03/10/20 19:04	
EPA 6020B	Cobalt	0.00063J	mg/L	0.0050	03/10/20 19:04	
EPA 6020B	Lead	0.00026J	mg/L	0.0050	03/10/20 19:04	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	03/10/20 19:04	
2629701002	HGWA-5					
	Field pH	6.80	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.053	mg/L	0.010	03/10/20 19:10	
EPA 6020B	Chromium	0.00050J	mg/L	0.010	03/10/20 19:10	
EPA 6020B	Cobalt	0.00093J	mg/L	0.0050	03/10/20 19:10	
EPA 6020B	Lithium	0.0036J	mg/L	0.030	03/10/20 19:10	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.30	03/07/20 07:19	
2629701003	HGWA-6					
	Field pH	7.67	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.19	mg/L	0.010	03/10/20 19:15	
EPA 6020B	Lithium	0.012J	mg/L	0.030	03/10/20 19:15	
2629701004	MW-23D					
	Field pH	7.05	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.060	mg/L	0.010	03/10/20 19:21	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	03/10/20 19:21	
EPA 6020B	Lead	0.000051J	mg/L	0.0050	03/10/20 19:21	
EPA 6020B	Lithium	0.0025J	mg/L	0.030	03/10/20 19:21	
EPA 6020B	Molybdenum	0.0030J	mg/L	0.010	03/10/20 19:21	
2629701005	MW-22					
	Field pH	5.97	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.027	mg/L	0.010	03/10/20 19:27	
EPA 6020B	Cadmium	0.0021J	mg/L	0.0025	03/10/20 19:27	
EPA 6020B	Cobalt	0.043	mg/L	0.0050	03/10/20 19:27	
EPA 6020B	Lead	0.000094J	mg/L	0.0050	03/10/20 19:27	
EPA 6020B	Lithium	0.0015J	mg/L	0.030	03/10/20 19:27	
2629701006	HGWA-1					
	Field pH	7.10	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.034	mg/L	0.010	03/10/20 20:07	
EPA 6020B	Lead	0.000048J	mg/L	0.0050	03/10/20 20:07	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	03/10/20 20:07	
EPA 300.0 Rev 2.1 1993	Fluoride	0.076J	mg/L	0.30	03/10/20 15:07	
2629701007	HGWA-2					
	Field pH	5.43	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.00043J	mg/L	0.0050	03/10/20 20:13	
EPA 6020B	Barium	0.11	mg/L	0.010	03/10/20 20:13	
EPA 6020B	Beryllium	0.00014J	mg/L	0.0030	03/10/20 20:13	
EPA 6020B	Chromium	0.00041J	mg/L	0.010	03/10/20 20:13	

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SUMMARY OF DETECTION

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2629701007	HGWA-2					
EPA 6020B	Cobalt	0.019	mg/L	0.0050	03/10/20 20:13	
EPA 6020B	Lead	0.000095J	mg/L	0.0050	03/10/20 20:13	
EPA 6020B	Lithium	0.0017J	mg/L	0.030	03/10/20 20:13	
2629701008	HGWA-3					
	Field pH	7.12	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.00040J	mg/L	0.0050	03/10/20 20:18	
EPA 6020B	Barium	0.14	mg/L	0.010	03/10/20 20:18	
EPA 6020B	Lithium	0.0037J	mg/L	0.030	03/10/20 20:18	
2629701009	HGWC-16					
	Field pH	7.1	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.12	mg/L	0.010	03/11/20 17:24	
EPA 6020B	Chromium	0.00071J	mg/L	0.010	03/11/20 17:24	
EPA 6020B	Cobalt	0.00037J	mg/L	0.0050	03/11/20 17:24	
EPA 6020B	Lead	0.00016J	mg/L	0.0050	03/11/20 17:24	
EPA 6020B	Lithium	0.0047J	mg/L	0.030	03/11/20 17:24	
2629701010	HGWC-17					
	Field pH	6.35	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.026	mg/L	0.010	03/11/20 17:30	
EPA 6020B	Chromium	0.0018J	mg/L	0.010	03/11/20 17:30	
EPA 6020B	Cobalt	0.016	mg/L	0.0050	03/11/20 17:30	
EPA 6020B	Lead	0.00013J	mg/L	0.0050	03/11/20 17:30	
EPA 6020B	Lithium	0.0012J	mg/L	0.030	03/11/20 17:30	
EPA 6020B	Thallium	0.00011J	mg/L	0.0010	03/11/20 17:30	
2629701011	FB-02					
EPA 6020B	Chromium	0.00066J	mg/L	0.010	03/11/20 17:36	
2629701012	HGWC-14					
	Field pH	4.77	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.0035J	mg/L	0.0050	03/11/20 17:41	
EPA 6020B	Barium	0.018	mg/L	0.010	03/11/20 17:41	
EPA 6020B	Beryllium	0.00043J	mg/L	0.0030	03/11/20 17:41	
EPA 6020B	Chromium	0.00042J	mg/L	0.010	03/11/20 17:41	
EPA 6020B	Cobalt	0.029	mg/L	0.0050	03/11/20 17:41	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	03/11/20 17:41	
EPA 6020B	Selenium	0.0045J	mg/L	0.010	03/12/20 16:58	
EPA 6020B	Thallium	0.00026J	mg/L	0.0010	03/11/20 17:41	
2629701013	HGWC-15					
	Field pH	6.00	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.018	mg/L	0.010	03/11/20 17:47	
EPA 6020B	Cadmium	0.0015J	mg/L	0.0025	03/11/20 17:47	
EPA 6020B	Cobalt	0.030	mg/L	0.0050	03/11/20 17:47	
EPA 6020B	Lead	0.000053J	mg/L	0.0050	03/11/20 17:47	
EPA 6020B	Lithium	0.0084J	mg/L	0.030	03/11/20 17:47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.064J	mg/L	0.30	03/11/20 02:28	

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SUMMARY OF DETECTION

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2629701014	HGWC-18					
	Field pH	4.55	Std. Units		03/16/20 16:29	
EPA 6020B	Arsenic	0.0057	mg/L	0.0050	03/11/20 17:53	
EPA 6020B	Barium	0.026	mg/L	0.010	03/11/20 17:53	
EPA 6020B	Beryllium	0.0029J	mg/L	0.0030	03/11/20 17:53	
EPA 6020B	Cadmium	0.0021J	mg/L	0.0025	03/11/20 17:53	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	03/11/20 17:53	
EPA 6020B	Cobalt	0.15	mg/L	0.0050	03/11/20 17:53	
EPA 6020B	Lead	0.0013J	mg/L	0.0050	03/11/20 17:53	
EPA 6020B	Lithium	0.012J	mg/L	0.030	03/11/20 17:53	
EPA 6020B	Selenium	0.014	mg/L	0.010	03/12/20 17:04	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	03/11/20 17:53	
EPA 300.0 Rev 2.1 1993	Fluoride	0.34	mg/L	0.30	03/11/20 02:42	
2629701015	MW-21D					
	Field pH	6.72	Std. Units		03/16/20 16:29	
EPA 6020B	Barium	0.058	mg/L	0.010	03/11/20 17:58	
EPA 6020B	Lead	0.000047J	mg/L	0.0050	03/11/20 17:58	
EPA 6020B	Lithium	0.026J	mg/L	0.030	03/11/20 17:58	
EPA 6020B	Molybdenum	0.025	mg/L	0.010	03/11/20 17:58	
2629701016	FD-01					
EPA 6020B	Arsenic	0.0055	mg/L	0.0050	03/11/20 18:14	
EPA 6020B	Barium	0.025	mg/L	0.010	03/11/20 18:14	
EPA 6020B	Beryllium	0.0029J	mg/L	0.0030	03/11/20 18:14	
EPA 6020B	Cadmium	0.0016J	mg/L	0.0025	03/11/20 18:14	
EPA 6020B	Chromium	0.037	mg/L	0.010	03/11/20 18:14	
EPA 6020B	Cobalt	0.15	mg/L	0.0050	03/11/20 18:14	
EPA 6020B	Lead	0.0013J	mg/L	0.0050	03/11/20 18:14	
EPA 6020B	Lithium	0.012J	mg/L	0.030	03/11/20 18:14	
EPA 6020B	Selenium	0.013	mg/L	0.010	03/12/20 17:09	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	03/11/20 18:14	
EPA 300.0 Rev 2.1 1993	Fluoride	0.42	mg/L	0.30	03/11/20 03:10	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWA-4		Lab ID: 2629701001		Collected: 03/02/20 14:25		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	5.63	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:04	7440-38-2	
Barium	0.023	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:04	7440-39-3	
Beryllium	0.00019J	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:04	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:04	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:04	7440-47-3	
Cobalt	0.00063J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:04	7440-48-4	
Lead	0.00026J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:04	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:04	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:40	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 07:05	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-5		Lab ID: 2629701002		Collected: 03/02/20 10:50		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	6.80	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:10	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:10	7440-38-2	
Barium	0.053	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:10	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:10	7440-43-9	
Chromium	0.00050J	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:10	7440-47-3	
Cobalt	0.00093J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:10	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:10	7439-92-1	
Lithium	0.0036J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:10	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:10	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:43	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	0.053J	mg/L	0.30	0.050	1		03/07/20 07:19	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-6		Lab ID: 2629701003		Collected: 03/02/20 12:00		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	7.67	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:15	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:15	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:15	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:15	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:15	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:45	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 08:17	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: MW-23D		Lab ID: 2629701004		Collected: 03/02/20 13:40		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	7.05	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:21	7440-38-2	
Barium	0.060	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:21	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:21	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:21	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:21	7440-48-4	
Lead	0.000051J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:21	7439-92-1	
Lithium	0.0025J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:21	7439-93-2	
Molybdenum	0.0030J	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:21	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:52	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 08:32	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: MW-22		Lab ID: 2629701005		Collected: 03/02/20 16:10		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	5.97	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 19:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 19:27	7440-38-2	
Barium	0.027	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 19:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 19:27	7440-41-7	
Cadmium	0.0021J	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 19:27	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 19:27	7440-47-3	
Cobalt	0.043	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 19:27	7440-48-4	
Lead	0.000094J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 19:27	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 19:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 19:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 19:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 19:27	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/04/20 15:00	03/05/20 15:55	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/07/20 15:47	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWA-1		Lab ID: 2629701006		Collected: 03/02/20 11:39		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	7.10	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/06/20 09:39	03/10/20 20:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/06/20 09:39	03/10/20 20:07	7440-38-2	
Barium	0.034	mg/L	0.010	0.00049	1	03/06/20 09:39	03/10/20 20:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/06/20 09:39	03/10/20 20:07	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/06/20 09:39	03/10/20 20:07	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/06/20 09:39	03/10/20 20:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/06/20 09:39	03/10/20 20:07	7440-48-4	
Lead	0.000048J	mg/L	0.0050	0.000046	1	03/06/20 09:39	03/10/20 20:07	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/06/20 09:39	03/10/20 20:07	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/06/20 09:39	03/10/20 20:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/06/20 09:39	03/10/20 20:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/06/20 09:39	03/10/20 20:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:19	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.076J	mg/L	0.30	0.050	1		03/10/20 15:07	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWA-2		Lab ID: 2629701007		Collected: 03/02/20 11:10		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	5.43	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/06/20 09:39	03/10/20 20:13	7440-36-0	
Arsenic	0.00043J	mg/L	0.0050	0.00035	1	03/06/20 09:39	03/10/20 20:13	7440-38-2	
Barium	0.11	mg/L	0.010	0.00049	1	03/06/20 09:39	03/10/20 20:13	7440-39-3	
Beryllium	0.00014J	mg/L	0.0030	0.000074	1	03/06/20 09:39	03/10/20 20:13	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/06/20 09:39	03/10/20 20:13	7440-43-9	
Chromium	0.00041J	mg/L	0.010	0.00039	1	03/06/20 09:39	03/10/20 20:13	7440-47-3	
Cobalt	0.019	mg/L	0.0050	0.00030	1	03/06/20 09:39	03/10/20 20:13	7440-48-4	
Lead	0.000095J	mg/L	0.0050	0.000046	1	03/06/20 09:39	03/10/20 20:13	7439-92-1	
Lithium	0.0017J	mg/L	0.030	0.00078	1	03/06/20 09:39	03/10/20 20:13	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/06/20 09:39	03/10/20 20:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/06/20 09:39	03/10/20 20:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/06/20 09:39	03/10/20 20:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:22	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/10/20 15:21	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Sample: HGWA-3		Lab ID: 2629701008		Collected: 03/02/20 13:15		Received: 03/03/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Field pH	7.12	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00027	1	03/06/20 09:39	03/10/20 20:18	7440-36-0	
Arsenic	0.00040J	mg/L	0.0050	0.00035	1	03/06/20 09:39	03/10/20 20:18	7440-38-2	
Barium	0.14	mg/L	0.010	0.00049	1	03/06/20 09:39	03/10/20 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/06/20 09:39	03/10/20 20:18	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/06/20 09:39	03/10/20 20:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/06/20 09:39	03/10/20 20:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/06/20 09:39	03/10/20 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/06/20 09:39	03/10/20 20:18	7439-92-1	
Lithium	0.0037J	mg/L	0.030	0.00078	1	03/06/20 09:39	03/10/20 20:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/06/20 09:39	03/10/20 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/06/20 09:39	03/10/20 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/06/20 09:39	03/10/20 20:18	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:39	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Fluoride	ND	mg/L	0.30	0.050	1		03/10/20 15:35	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-16		Lab ID: 2629701009		Collected: 03/03/20 12:37		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	7.1	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:24	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:24	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:24	7440-43-9	
Chromium	0.00071J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:24	7440-47-3	
Cobalt	0.00037J	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:24	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:24	7439-92-1	
Lithium	0.0047J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 17:58	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 01:32	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-17		Lab ID: 2629701010		Collected: 03/03/20 14:20		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	6.35	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:30	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:30	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:30	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:30	7440-43-9	
Chromium	0.0018J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:30	7440-47-3	
Cobalt	0.016	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:30	7440-48-4	
Lead	0.00013J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:30	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:30	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:30	7782-49-2	
Thallium	0.00011J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:01	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 01:46	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: FB-02		Lab ID: 2629701011		Collected: 03/03/20 19:07		Received: 03/04/20 10:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:36	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:36	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:36	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:36	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:36	7440-43-9		
Chromium	0.00066J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:36	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:36	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:36	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:36	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:36	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:36	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:36	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:10	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 02:00	16984-48-8		

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-14		Lab ID: 2629701012		Collected: 03/03/20 11:20		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Field pH	4.77	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:41	7440-36-0	
Arsenic	0.0035J	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:41	7440-38-2	
Barium	0.018	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:41	7440-39-3	
Beryllium	0.00043J	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:41	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:41	7440-43-9	
Chromium	0.00042J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:41	7440-47-3	
Cobalt	0.029	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:41	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:41	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:41	7439-98-7	
Selenium	0.0045J	mg/L	0.010	0.0013	1	03/10/20 14:34	03/12/20 16:58	7782-49-2	
Thallium	0.00026J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:41	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:13	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 02:14	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-15		Lab ID: 2629701013		Collected: 03/03/20 12:20		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	6.00	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:47	7440-38-2	
Barium	0.018	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:47	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:47	7440-41-7	
Cadmium	0.0015J	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:47	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:47	7440-47-3	
Cobalt	0.030	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:47	7440-48-4	
Lead	0.000053J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:47	7439-92-1	
Lithium	0.0084J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:47	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:47	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/10/20 08:40	03/10/20 18:15	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	0.064J	mg/L	0.30	0.050	1		03/11/20 02:28	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: HGWC-18		Lab ID: 2629701014		Collected: 03/03/20 09:10		Received: 03/04/20 10:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	4.55	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:53	7440-36-0	
Arsenic	0.0057	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:53	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:53	7440-39-3	
Beryllium	0.0029J	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:53	7440-41-7	
Cadmium	0.0021J	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:53	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:53	7440-47-3	
Cobalt	0.15	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:53	7440-48-4	
Lead	0.0013J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:53	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:53	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	03/10/20 14:34	03/12/20 17:04	7782-49-2	
Thallium	0.00013J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:53	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	03/12/20 11:45	03/13/20 13:08	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993							
Fluoride	0.34	mg/L	0.30	0.050	1		03/11/20 02:42	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: MW-21D	Lab ID: 2629701015		Collected: 03/03/20 10:15	Received: 03/04/20 10:05	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	6.72	Std. Units			1		03/16/20 16:29		
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 17:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 17:58	7440-38-2	
Barium	0.058	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 17:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 17:58	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 17:58	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 17:58	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 17:58	7440-48-4	
Lead	0.000047J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 17:58	7439-92-1	
Lithium	0.026J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 17:58	7439-93-2	
Molybdenum	0.025	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 17:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/10/20 14:34	03/11/20 17:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 17:58	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/12/20 11:45	03/13/20 13:18	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 02:56	16984-48-8	

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ANALYTICAL RESULTS

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Sample: FD-01		Lab ID: 2629701016		Collected: 03/03/20 00:00		Received: 03/04/20 10:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/10/20 14:34	03/11/20 18:14	7440-36-0		
Arsenic	0.0055	mg/L	0.0050	0.00035	1	03/10/20 14:34	03/11/20 18:14	7440-38-2		
Barium	0.025	mg/L	0.010	0.00049	1	03/10/20 14:34	03/11/20 18:14	7440-39-3		
Beryllium	0.0029J	mg/L	0.0030	0.000074	1	03/10/20 14:34	03/11/20 18:14	7440-41-7		
Cadmium	0.0016J	mg/L	0.0025	0.00011	1	03/10/20 14:34	03/11/20 18:14	7440-43-9		
Chromium	0.037	mg/L	0.010	0.00039	1	03/10/20 14:34	03/11/20 18:14	7440-47-3		
Cobalt	0.15	mg/L	0.0050	0.00030	1	03/10/20 14:34	03/11/20 18:14	7440-48-4		
Lead	0.0013J	mg/L	0.0050	0.000046	1	03/10/20 14:34	03/11/20 18:14	7439-92-1		
Lithium	0.012J	mg/L	0.030	0.00078	1	03/10/20 14:34	03/11/20 18:14	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 14:34	03/11/20 18:14	7439-98-7		
Selenium	0.013	mg/L	0.010	0.0013	1	03/10/20 14:34	03/12/20 17:09	7782-49-2		
Thallium	0.00013J	mg/L	0.0010	0.000052	1	03/10/20 14:34	03/11/20 18:14	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	03/12/20 11:45	03/13/20 13:20	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.42	mg/L	0.30	0.050	1		03/11/20 03:10	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44210 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005

METHOD BLANK: 202602 Matrix: Water
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	03/05/20 14:53	

LABORATORY CONTROL SAMPLE: 202603

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 202604 202605

Parameter	Units	202604		202605		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629719006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0026	0.0026	106	106	75-125	0	20

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44366 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012, 2629701013

METHOD BLANK: 203475 Matrix: Water
Associated Lab Samples: 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012, 2629701013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	03/10/20 17:03	

LABORATORY CONTROL SAMPLE: 203476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203477 203478

Parameter	Units	2629703004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	96	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 44498

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2629701014, 2629701015, 2629701016

METHOD BLANK: 204276

Matrix: Water

Associated Lab Samples: 2629701014, 2629701015, 2629701016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	03/13/20 13:03	

LABORATORY CONTROL SAMPLE: 204277

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204278 204279

Parameter	Units	204278		204279		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629701014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0024	99	97	75-125	2	20

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44279 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008

METHOD BLANK: 202988 Matrix: Water
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00029J	0.0030	0.00027	03/10/20 17:38	
Arsenic	mg/L	ND	0.0050	0.00035	03/10/20 17:38	
Barium	mg/L	ND	0.010	0.00049	03/10/20 17:38	
Beryllium	mg/L	ND	0.0030	0.000074	03/10/20 17:38	
Cadmium	mg/L	ND	0.0025	0.00011	03/10/20 17:38	
Chromium	mg/L	ND	0.010	0.00039	03/10/20 17:38	
Cobalt	mg/L	ND	0.0050	0.00030	03/10/20 17:38	
Lead	mg/L	ND	0.0050	0.000046	03/10/20 17:38	
Lithium	mg/L	ND	0.030	0.00078	03/10/20 17:38	
Molybdenum	mg/L	ND	0.010	0.00095	03/10/20 17:38	
Selenium	mg/L	ND	0.010	0.0013	03/10/20 17:38	
Thallium	mg/L	ND	0.0010	0.000052	03/10/20 17:38	

LABORATORY CONTROL SAMPLE: 202989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	109	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.11	105	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 202990 202991

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2629679001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	107	111	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20	
Barium	mg/L	0.035	0.1	0.1	0.14	0.15	109	110	75-125	1	20	
Beryllium	mg/L	0.000096J	0.1	0.1	0.10	0.11	104	105	75-125	2	20	
Cadmium	mg/L	0.00041J	0.1	0.1	0.10	0.11	102	105	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Parameter	Units	202990		202991		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2629679001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Chromium	mg/L	0.0013J	0.1	0.1	0.11	0.11	107	108	75-125	2	20	
Cobalt	mg/L	0.00037J	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Lead	mg/L	0.000074J	0.1	0.1	0.098	0.10	98	101	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.11	103	105	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.095	0.10	95	103	75-125	8	20	
Thallium	mg/L	0.000078J	0.1	0.1	0.10	0.10	100	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 44398 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

METHOD BLANK: 203664 Matrix: Water
Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	03/11/20 15:54	
Arsenic	mg/L	ND	0.0050	0.00035	03/11/20 15:54	
Barium	mg/L	ND	0.010	0.00049	03/11/20 15:54	
Beryllium	mg/L	ND	0.0030	0.000074	03/11/20 15:54	
Cadmium	mg/L	ND	0.0025	0.00011	03/11/20 15:54	
Chromium	mg/L	ND	0.010	0.00039	03/11/20 15:54	
Cobalt	mg/L	ND	0.0050	0.00030	03/11/20 15:54	
Lead	mg/L	ND	0.0050	0.000046	03/11/20 15:54	
Lithium	mg/L	ND	0.030	0.00078	03/11/20 15:54	
Molybdenum	mg/L	ND	0.010	0.00095	03/11/20 15:54	
Selenium	mg/L	ND	0.010	0.0013	03/11/20 15:54	
Thallium	mg/L	ND	0.0010	0.000052	03/11/20 15:54	

LABORATORY CONTROL SAMPLE: 203665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	110	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.11	105	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	105	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203666 203667

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629703008 Result	Spike Conc.	Spike Conc.	MS Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	107	109	75-125	2	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	103	102	75-125	1	20		
Barium	mg/L	0.090	0.1	0.1	0.19	0.19	98	98	75-125	0	20		
Beryllium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20		

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Parameter	Units	203666		203667		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Chromium	mg/L	0.00044J	0.1	0.1	0.11	0.11	107	108	75-125	0	20	
Cobalt	mg/L	0.00094J	0.1	0.1	0.10	0.10	102	104	75-125	2	20	
Lead	mg/L	0.00013J	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	0	20	
Molybdenum	mg/L	0.0022J	0.1	0.1	0.10	0.10	99	102	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.11	100	105	75-125	5	20	
Thallium	mg/L	0.000082J	0.1	0.1	0.10	0.10	101	101	75-125	0	20	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 528851 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004

METHOD BLANK: 2824833 Matrix: Water
Associated Lab Samples: 2629701001, 2629701002, 2629701003, 2629701004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/07/20 00:18	

LABORATORY CONTROL SAMPLE: 2824834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824835 2824836

Parameter	Units	92467521066 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	99	103	90-110	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2824837 2824838

Parameter	Units	92467521076 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	98	98	90-110	0	10	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 529130 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629701005

METHOD BLANK: 2826277 Matrix: Water
Associated Lab Samples: 2629701005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/07/20 11:50	

LABORATORY CONTROL SAMPLE: 2826278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.3	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826279 2826280

Parameter	Units	92468399001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.1	2.5	2.0	81	76	90-110	6	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826281 2826282

Parameter	Units	2629733001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Fluoride	mg/L	ND	2.5	2.1	2.5	2.1	82	85	90-110	3	10	M1

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

QC Batch: 529175 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 2629701006, 2629701007, 2629701008

METHOD BLANK: 2826400 Matrix: Water

Associated Lab Samples: 2629701006, 2629701007, 2629701008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/10/20 12:19	

LABORATORY CONTROL SAMPLE: 2826401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826402 2826403

Parameter	Units	92468470002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	96	99	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826404 2826405

Parameter	Units	2629679002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	ND	2.5	2.5	2.5	2.7	99	108	90-110	8	10	

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QUALITY CONTROL DATA

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

QC Batch: 529391 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

METHOD BLANK: 2827596 Matrix: Water
Associated Lab Samples: 2629701009, 2629701010, 2629701011, 2629701012, 2629701013, 2629701014, 2629701015, 2629701016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	03/10/20 23:40	

LABORATORY CONTROL SAMPLE: 2827597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2827598 2827599

Parameter	Units	2629786007 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	2.5	2.5	2.5	2.6	100	103	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2827600 2827601

Parameter	Units	2629765002 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	2.5	2.5	2.3	2.4	91	95	90-110	4	10	

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QUALIFIERS

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND APP IV AP-2

Pace Project No.: 2629701

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629701001	HGWA-4				
2629701002	HGWA-5				
2629701003	HGWA-6				
2629701004	MW-23D				
2629701005	MW-22				
2629701006	HGWA-1				
2629701007	HGWA-2				
2629701008	HGWA-3				
2629701009	HGWC-16				
2629701010	HGWC-17				
2629701012	HGWC-14				
2629701013	HGWC-15				
2629701014	HGWC-18				
2629701015	MW-21D				
2629701001	HGWA-4	EPA 3005A	44279	EPA 6020B	44313
2629701002	HGWA-5	EPA 3005A	44279	EPA 6020B	44313
2629701003	HGWA-6	EPA 3005A	44279	EPA 6020B	44313
2629701004	MW-23D	EPA 3005A	44279	EPA 6020B	44313
2629701005	MW-22	EPA 3005A	44279	EPA 6020B	44313
2629701006	HGWA-1	EPA 3005A	44279	EPA 6020B	44313
2629701007	HGWA-2	EPA 3005A	44279	EPA 6020B	44313
2629701008	HGWA-3	EPA 3005A	44279	EPA 6020B	44313
2629701009	HGWC-16	EPA 3005A	44398	EPA 6020B	44434
2629701010	HGWC-17	EPA 3005A	44398	EPA 6020B	44434
2629701011	FB-02	EPA 3005A	44398	EPA 6020B	44434
2629701012	HGWC-14	EPA 3005A	44398	EPA 6020B	44434
2629701013	HGWC-15	EPA 3005A	44398	EPA 6020B	44434
2629701014	HGWC-18	EPA 3005A	44398	EPA 6020B	44434
2629701015	MW-21D	EPA 3005A	44398	EPA 6020B	44434
2629701016	FD-01	EPA 3005A	44398	EPA 6020B	44434
2629701001	HGWA-4	EPA 7470A	44210	EPA 7470A	44266
2629701002	HGWA-5	EPA 7470A	44210	EPA 7470A	44266
2629701003	HGWA-6	EPA 7470A	44210	EPA 7470A	44266
2629701004	MW-23D	EPA 7470A	44210	EPA 7470A	44266
2629701005	MW-22	EPA 7470A	44210	EPA 7470A	44266
2629701006	HGWA-1	EPA 7470A	44366	EPA 7470A	44419
2629701007	HGWA-2	EPA 7470A	44366	EPA 7470A	44419
2629701008	HGWA-3	EPA 7470A	44366	EPA 7470A	44419
2629701009	HGWC-16	EPA 7470A	44366	EPA 7470A	44419
2629701010	HGWC-17	EPA 7470A	44366	EPA 7470A	44419
2629701011	FB-02	EPA 7470A	44366	EPA 7470A	44419
2629701012	HGWC-14	EPA 7470A	44366	EPA 7470A	44419
2629701013	HGWC-15	EPA 7470A	44366	EPA 7470A	44419
2629701014	HGWC-18	EPA 7470A	44498	EPA 7470A	44524
2629701015	MW-21D	EPA 7470A	44498	EPA 7470A	44524
2629701016	FD-01	EPA 7470A	44498	EPA 7470A	44524

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND APP IV AP-2
Pace Project No.: 2629701

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629701001	HGWA-4	EPA 300.0 Rev 2.1 1993	528851		
2629701002	HGWA-5	EPA 300.0 Rev 2.1 1993	528851		
2629701003	HGWA-6	EPA 300.0 Rev 2.1 1993	528851		
2629701004	MW-23D	EPA 300.0 Rev 2.1 1993	528851		
2629701005	MW-22	EPA 300.0 Rev 2.1 1993	529130		
2629701006	HGWA-1	EPA 300.0 Rev 2.1 1993	529175		
2629701007	HGWA-2	EPA 300.0 Rev 2.1 1993	529175		
2629701008	HGWA-3	EPA 300.0 Rev 2.1 1993	529175		
2629701009	HGWC-16	EPA 300.0 Rev 2.1 1993	529391		
2629701010	HGWC-17	EPA 300.0 Rev 2.1 1993	529391		
2629701011	FB-02	EPA 300.0 Rev 2.1 1993	529391		
2629701012	HGWC-14	EPA 300.0 Rev 2.1 1993	529391		
2629701013	HGWC-15	EPA 300.0 Rev 2.1 1993	529391		
2629701014	HGWC-18	EPA 300.0 Rev 2.1 1993	529391		
2629701015	MW-21D	EPA 300.0 Rev 2.1 1993	529391		
2629701016	FD-01	EPA 300.0 Rev 2.1 1993	529391		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Pace Analytical

Client Name: GAPower Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 233 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.0°C Biological Tissue is Frozen: Yes No
Temp should be above freezing to 5°C Comments: _____

Optional:
Proj Due Date:
Proj Name:

Date and Initials of person examining contents: 3/3/20 [Signature]

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: GA Power Address: Atlanta, GA	Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts	Section C Invoice Information: Attention: Southern Co. Company Name:	Page: 1 of 2
Email To: SCS Contacts Phone: Requested Due Date/TAT: 10 Day	Purchase Order No.: Project Name: Plant Hammond App. IV Scan Event (Apr 2) Project Number: 6V6581	Address: Pace Quote Reference: Pace Project Manager: Pace Profile #: 29124	REGULATORY AGENCY: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> DRINKING WATER <input type="checkbox"/> OTHER CEM

Section D Required Client Information: Valid Matrix Codes MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	Section E Required Client Information: Valid Matrix Codes MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	Section F Required Client Information: Valid Matrix Codes MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	Section G Required Client Information: Valid Matrix Codes MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)
ITEM #	MATRIX CODE	DATE	TIME
1	HV0-4	3-20	1425
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Section H Additional Comments: Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.	Section I Relinquished by / Affiliation: Date: 3-20-2020 Time: 1754	Section J Accepted by / Affiliation: Date: 3-20-2020 Time: 12:20	Section K Sample Conditions: Temp in °C: 10 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): Y Samples Intact (Y/N): Y
Additional Comments: Metals - As, Pb, Be, Cd, Cr, Co, Cu, Hg, Ni, Mn, P, Se, Sb, Si, V, Zn	Relinquished by / Affiliation: Name: [Signature] Date: 3-20-2020 Time: 1754	Accepted by / Affiliation: Name: [Signature] Date: 3-20-2020 Time: 12:20	Temp in °C: 10 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): Y Samples Intact (Y/N): Y

Section L Sampler Name and Signature: Print Name of Sampler: Daron Reeder Signature of Sampler: [Signature]	Section M Date Signed (MM/DD/YYYY): 03/20/2020	Section N Date (MM/DD/YYYY): 03/20/2020	Section O Date (MM/DD/YYYY): 03/20/2020	Section P Date (MM/DD/YYYY): 03/20/2020
SAMPLER NAME AND SIGNATURE: PRINT NAME OF SAMPLER: Daron Reeder SIGNATURE OF SAMPLER: [Signature]	DATE SIGNED (MM/DD/YYYY): 03/20/2020	DATE: 03/20/2020	DATE: 03/20/2020	DATE: 03/20/2020

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Requested Client Information		Section B Requested Project Information		Section C Invoicing Information		Section D Requested Analysis Filtered (Y/N)		REGULATORY AGENCY	
Company: GA Power		Report To: SCS Contacts		Attention: Southern Co.		Requested Analysis Filtered (Y/N)		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
Address: Atlanta, GA		Copy To: Geosynlec Contacts		Company Name:		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
Email To: SCS Contacts		Purchase Order No.:		Address:		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
Phone: Fax:		Project Name: Plant Hammond App. IV Scan Event (A2-3)		Pace Code:		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
Requested Date/Date: 10 Day		Project Number:		Pace Project Manager:		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
				Pace Profile #: 291214		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
				Request Date: 3/30/20		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	
				Request Date: 3/30/20		Request Date: 3/30/20		<input type="checkbox"/> NPOES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER	

ITEM #	Valid Matrix Codes MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Request Date	Time	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
			DATE	TIME			DATE	TIME	H2SO4	HNO3	HCl	NaOH	Na2S2O3							
1	H&M&A-1	WT 6 3000/L/100	3/29/20	11:00	18	4	1	3							3/29/20	11:00				
2	H&M&A-6	WT 6 3000/L/100	3/29/20	11:00	18	4	1	3							3/29/20	11:00				
3	M&W-37A	WT 6 3000/L/100	3/29/20	11:40	18	4	1	3							3/29/20	11:40				
4	M&W-37A	WT 6 3000/L/100	3/29/20	11:40	18	4	1	3							3/29/20	11:40				
5	M&W-37A	WT 6 3000/L/100	3/29/20	11:40	18	4	1	3							3/29/20	11:40				
6						4	1	3												
7						4	1	3												
8						4	1	3												
9						4	1	3												
10						4	1	3												
11						4	1	3												
12						4	1	3												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Michael Johnson Geosynlec	3/30/20	12:20	Charles Hunt	3/30/20	14:00				
	Michael Johnson Geosynlec	3/30/20	12:20	Charles Hunt	3/30/20	14:00				

SAMPLER NAME AND SIGNATURE		DATE SIGNED	TIME
PRINT NAME OF SAMPLER: Taylor	SIGNATURE OF SAMPLER: [Signature]	DATE SIGNED: 3/30/20	TIME: 12:20

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.

March 27, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629701
Pace Project No.: 30353288

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 05, 2020 and March 06, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 2629701
Pace Project No.: 30353288

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 2629701
Pace Project No.: 30353288

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629701001	HGWA-4	Water	03/02/20 14:25	03/05/20 09:15
2629701002	HGWA-5	Water	03/02/20 10:50	03/05/20 09:15
2629701003	HGWA-6	Water	03/02/20 12:00	03/05/20 09:15
2629701004	MW-23D	Water	03/02/20 13:40	03/05/20 09:15
2629701005	MW-22	Water	03/02/20 16:10	03/05/20 09:15
2629701006	HGWA-1	Water	03/02/20 11:39	03/05/20 09:15
2629701007	HGWA-2	Water	03/02/20 11:10	03/05/20 09:15
2629701008	HGWA-3	Water	03/02/20 13:15	03/05/20 09:15
2629701009	HGWC-16	Water	03/03/20 12:37	03/06/20 09:30
2629701010	HGWC-17	Water	03/03/20 14:20	03/06/20 09:30
2629701011	FB-02	Water	03/03/20 19:07	03/06/20 09:30
2629701012	HGWC-14	Water	03/03/20 11:20	03/06/20 09:30
2629701013	HGWC-15	Water	03/03/20 12:20	03/06/20 09:30
2629701014	HGWC-18	Water	03/03/20 09:10	03/06/20 09:30
2629701015	MW-21D	Water	03/03/20 10:15	03/06/20 09:30
2629701016	FD-01	Water	03/04/20 00:01	03/06/20 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2629701
Pace Project No.: 30353288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701001	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701002	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701003	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701004	MW-23D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701005	MW-22	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701006	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701007	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701008	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701009	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701010	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701011	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701012	HGWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701013	HGWC-15	EPA 9315	LAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: 2629701
Pace Project No.: 30353288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629701014	HGWC-18	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2629701015	MW-21D	Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629701016	FD-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Sample: HGWA-4		Lab ID: 2629701001	Collected: 03/02/20 14:25	Received: 03/05/20 09:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.493 ± 0.277 (0.341) C:97% T:NA	pCi/L	03/12/20 08:32	13982-63-3		
Radium-228	EPA 9320	0.444 ± 0.390 (0.788) C:78% T:83%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	0.937 ± 0.667 (1.13)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: HGWA-5		Lab ID: 2629701002	Collected: 03/02/20 10:50	Received: 03/05/20 09:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.547 ± 0.290 (0.328) C:93% T:NA	pCi/L	03/12/20 08:32	13982-63-3		
Radium-228	EPA 9320	-0.123 ± 0.373 (0.899) C:74% T:83%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	0.547 ± 0.663 (1.23)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: HGWA-6		Lab ID: 2629701003	Collected: 03/02/20 12:00	Received: 03/05/20 09:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.676 ± 0.333 (0.389) C:94% T:NA	pCi/L	03/12/20 08:32	13982-63-3		
Radium-228	EPA 9320	-0.000374 ± 0.354 (0.824) C:81% T:79%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	0.676 ± 0.687 (1.21)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: MW-23D		Lab ID: 2629701004	Collected: 03/02/20 13:40	Received: 03/05/20 09:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.582 ± 0.295 (0.312) C:93% T:NA	pCi/L	03/12/20 09:23	13982-63-3		
Radium-228	EPA 9320	0.382 ± 0.353 (0.714) C:74% T:86%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	0.964 ± 0.648 (1.03)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: MW-22		Lab ID: 2629701005	Collected: 03/02/20 16:10	Received: 03/05/20 09:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.688 ± 0.330 (0.361) C:91% T:NA	pCi/L	03/12/20 08:32	13982-63-3		
Radium-228	EPA 9320	0.184 ± 0.414 (0.915) C:73% T:90%	pCi/L	03/24/20 19:44	15262-20-1		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-22 Lab ID: 2629701005 Collected: 03/02/20 16:10 Received: 03/05/20 09:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.872 ± 0.744 (1.28)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-1 Lab ID: 2629701006 Collected: 03/02/20 11:39 Received: 03/05/20 09:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.577 ± 0.324 (0.458) C:90% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.0334 ± 0.328 (0.762) C:72% T:85%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.610 ± 0.652 (1.22)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-2 Lab ID: 2629701007 Collected: 03/02/20 11:10 Received: 03/05/20 09:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.903 ± 0.376 (0.345) C:93% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.680 ± 0.497 (0.984) C:71% T:86%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	1.58 ± 0.873 (1.33)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-3 Lab ID: 2629701008 Collected: 03/02/20 13:15 Received: 03/05/20 09:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.230 ± 0.208 (0.350) C:87% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.0192 ± 0.394 (0.910) C:69% T:87%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	0.249 ± 0.602 (1.26)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-16 Lab ID: 2629701009 Collected: 03/03/20 12:37 Received: 03/06/20 09:30 Matrix: Water						
PWS: Site ID: Sample Type:						
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.707 ± 0.356 (0.434) C:81% T:NA	pCi/L	03/12/20 08:33	13982-63-3	
Radium-228	EPA 9320	0.613 ± 0.467 (0.930) C:73% T:86%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium	Total Radium Calculation	1.32 ± 0.823 (1.36)	pCi/L	03/27/20 14:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Sample: HGWC-17		Lab ID: 2629701010	Collected: 03/03/20 14:20	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.384 ± 0.261 (0.346) C:80% T:NA	pCi/L	03/12/20 08:33	13982-63-3		
Radium-228	EPA 9320	0.950 ± 0.518 (0.953) C:75% T:84%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	1.33 ± 0.779 (1.30)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: FB-02		Lab ID: 2629701011	Collected: 03/03/20 19:07	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.526 ± 0.294 (0.343) C:84% T:NA	pCi/L	03/12/20 08:33	13982-63-3		
Radium-228	EPA 9320	0.368 ± 0.377 (0.775) C:72% T:79%	pCi/L	03/24/20 19:44	15262-20-1		
Total Radium	Total Radium Calculation	0.894 ± 0.671 (1.12)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: HGWC-14		Lab ID: 2629701012	Collected: 03/03/20 11:20	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	1.29 ± 0.493 (0.593) C:100% T:NA	pCi/L	03/12/20 08:33	13982-63-3		
Radium-228	EPA 9320	0.548 ± 0.407 (0.797) C:72% T:87%	pCi/L	03/24/20 19:45	15262-20-1		
Total Radium	Total Radium Calculation	1.84 ± 0.900 (1.39)	pCi/L	03/27/20 14:53	7440-14-4		

Sample: HGWC-15		Lab ID: 2629701013	Collected: 03/03/20 12:20	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	0.375 ± 0.258 (0.380) C:87% T:NA	pCi/L	03/12/20 08:35	13982-63-3		
Radium-228	EPA 9320	1.05 ± 0.448 (0.714) C:82% T:79%	pCi/L	03/25/20 14:39	15262-20-1		
Total Radium	Total Radium Calculation	1.43 ± 0.706 (1.09)	pCi/L	03/27/20 13:24	7440-14-4		

Sample: HGWC-18		Lab ID: 2629701014	Collected: 03/03/20 09:10	Received: 03/06/20 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	1.38 ± 0.501 (0.531) C:92% T:NA	pCi/L	03/12/20 08:35	13982-63-3		
Radium-228	EPA 9320	0.971 ± 0.394 (0.602) C:80% T:91%	pCi/L	03/25/20 14:39	15262-20-1		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium		Total Radium Calculation	2.35 ± 0.895 (1.13)	pCi/L	03/27/20 13:24	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.965 ± 0.387 (0.352) C:97% T:NA	pCi/L	03/12/20 08:35	13982-63-3	
Radium-228		EPA 9320	0.977 ± 0.412 (0.640) C:79% T:85%	pCi/L	03/25/20 14:39	15262-20-1	
Total Radium		Total Radium Calculation	1.94 ± 0.799 (0.992)	pCi/L	03/27/20 13:24	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	2.05 ± 0.607 (0.443) C:92% T:NA	pCi/L	03/12/20 09:13	13982-63-3	
Radium-228		EPA 9320	0.498 ± 0.339 (0.647) C:82% T:91%	pCi/L	03/25/20 14:39	15262-20-1	
Total Radium		Total Radium Calculation	2.55 ± 0.946 (1.09)	pCi/L	03/27/20 13:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387206	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2629701013, 2629701014, 2629701015, 2629701016		

METHOD BLANK:	1875684	Matrix:	Water
Associated Lab Samples:	2629701013, 2629701014, 2629701015, 2629701016		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.672 ± 0.316 (0.310) C:96% T:NA	pCi/L	03/12/20 08:35	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387209	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2629701013, 2629701014, 2629701015, 2629701016		

METHOD BLANK:	1875690	Matrix:	Water
Associated Lab Samples:	2629701013, 2629701014, 2629701015, 2629701016		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.303 ± 0.321 (0.663) C:79% T:80%	pCi/L	03/25/20 14:39	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387205	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

METHOD BLANK:	1875683	Matrix:	Water
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.605 ± 0.326 (0.434) C:90% T:NA	pCi/L	03/12/20 08:26	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629701
Pace Project No.: 30353288

QC Batch:	387208	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

METHOD BLANK:	1875688	Matrix:	Water
Associated Lab Samples:	2629701001, 2629701002, 2629701003, 2629701004, 2629701005, 2629701006, 2629701007, 2629701008, 2629701009, 2629701010, 2629701011, 2629701012		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.275 ± 0.357 (0.757) C:73% T:81%	pCi/L	03/24/20 19:45	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 2629701
Pace Project No.: 30353288

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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Chain of Custody

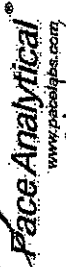
Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA
 Cert. Needed: Yes No
 Owner Received Date: 3/3/2020 Results Requested By: 94772620

Workorder: 2629701 Workorder Name: PLANT HAMMOND APP IV AP-2

Kevin Herring
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 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-6600



WO#: 30353288



30353288

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N
1			3-3-2020									
2												
3												

Sample ID	Sample Type	Calibrated Date/Time	Lab ID	Matrix	HNO3	Other	LAB USE ONLY
1	HGWA-4	3/2/2020 14:25	2629701001	Water	X		001
2	HGWA-5	3/2/2020 10:50	2629701002	Water	X		002
3	HGWA-6	3/2/2020 12:00	2629701003	Water	X		003
4	MW-27D	3/2/2020 13:40	2629701004	Water	X		004
5	MW-22	3/2/2020 16:10	2629701005	Water	X		005
6	HGWA-1	3/2/2020 11:39	2629701006	Water	X		006
7	HGWA-2	3/2/2020 11:10	2629701007	Water	X		007
8	HGWA-3	3/2/2020 13:15	2629701008	Water	X		008

Upload results from 2629714-001, 2, 3
 For samples 2629701-006, 007, 008.

Cooler Temperature on Receipt 0°C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

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

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA
 Cert. Needed: Yes No
 Owner Received Date: 3/3/2020 Results Requested By: *TL DWS*

Workorder: 2629701 Workorder Name: PLANT HAMMOND APP IV AP-2

Kevin Herring
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 Greensburg, PA 15601
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Item	Sample ID	Sample Type	Collect Date/Time	Matrix	Container	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	HGWA-4	PS	3/2/2020 14:25	Water	2629701001	<i>[Signature]</i>	3-5-20 9:15	X	X	Y	N
2	HGWA-5	PS	3/2/2020 10:50	Water	2629701002	<i>[Signature]</i>		X	X	Y	N
3	HGWA-6	PS	3/2/2020 12:00	Water	2629701003	<i>[Signature]</i>		X	X	Y	N
4	MW-27D	PS	3/2/2020 13:40	Water	2629701004	<i>[Signature]</i>		X	X	Y	N
5	MW-22	PS	3/2/2020 16:10	Water	2629701005	<i>[Signature]</i>		X	X	Y	N

Cooler Temperature on Receipt *N/A* °C

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

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA
 Cert. Needed: Yes No

Workorder: 2629701 Workorder Name: PLANT HAMMOND APP IV AP-2

Results Requested By: 3/17/2020

Report To: Subcontract To: Requested Analysis: RAD 9315 RAD 9320

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 Greensburg, PA 15601
 Phone (724)850-5600

WO# : 30353288

PM: JAC Due Date: 03/26/20
 CLIENT: PACE_26_ATGA

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY
						HNO3	Other		
1	HGWA-4	PS	3/2/2020 14:25	2629701001	Water	1			
2	HGWA-5	PS	3/2/2020 10:50	2629701002	Water	1			
3	HGWA-6	PS	3/2/2020 12:00	2629701003	Water	1			
4	MW-27D	PS	3/2/2020 13:40	2629701004	Water	1			
5	MW-22	PS	3/2/2020 16:10	2629701005	Water	1			
6	HGWA-1	PS	3/2/2020 11:39	2629701006	Water		1		
7	HGWA-2	PS	3/2/2020 11:10	2629701007	Water		1		
8	HGWA-3	PS	3/2/2020 13:15	2629701008	Water		1		001
9	HGWC-16	PS	3/3/2020 12:37	2629701009	Water	1			010
10	HGWC-17	PS	3/3/2020 14:20	2629701010	Water	1			011
11	FB-02	PS	3/3/2020 19:07	2629701011	Water	1			012
12	HGWC-14	PS	3/3/2020 11:20	2629701012	Water	1			013
13	HGWC-15	PS	3/3/2020 12:20	2629701013	Water	1			014
14	HGWC-18	PS	3/3/2020 09:10	2629701014	Water	1			015
15	MW-21D	PS	3/3/2020 10:15	2629701015	Water	1			016
16	FD-01	PS	3/4/2020 00:00	2629701016	Water	1			

WD # 30353288

Transfers		Released By	Date/Time	Received By	Date/Time	Comments	
1		<i>[Signature]</i>	3/5/20 17:00	<i>[Signature]</i>	3/6/20 09:30		
2							
3							
Cooler Temperature on Receipt		°C		Custody Seal	Y or N	Received on Ice	Y or N
							Samples Intact
							Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace NC

Project # 30353288

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1857 9506 7400

Label	<u>MC</u>
LIMS Login	<u>MM</u>

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

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

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

Temp should be above freezing to 6°C

pH paper Lot# <u>10D2191</u>	Date and Initials of person examining contents: <u>MC 3-5-20</u>
---------------------------------	---

Comments:

	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PH12</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>MC</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>MC</u> Date: <u>3-5-20</u>

Client Notification/ Resolution:

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

Comments/ Resolution: _____

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

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

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace NC

Project # 3035328

8
BM
3-6-2020

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1857 9506 7400

Label	<u>DK</u>
LIMS Login	<u>DK</u>

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

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

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

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents:
	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. <u>1002191</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WI</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>DK</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>DK</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>DK</u> Date: <u>3-5-20</u>

Client Notification/ Resolution:

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

Comments/ Resolution: _____

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

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

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace GA

Project # 30353288

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1657 9506 8083

Label	<u>JSM</u>
LIMS Login	<u>NMR</u>

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

Thermometer Used _____ Type of Ice: Wet Blue None

Cooler Temperature _____ Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>10D0391</u>	<u>JSM 3/6/2020</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH < 2</u>	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>JSM</u>	Date/time of preservation: _____
				Lot # of added preservative: _____	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>JSM</u>	Date: <u>3/6/2020</u>

Client Notification/ Resolution:

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

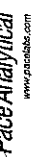
Comments/ Resolution: _____

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

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

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52794
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875683
MB concentration:	0.605
M/B Counting Uncertainty:	0.314
MB MDC:	0.434
MB Numerical Performance Indicator:	3.78
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS52794	LCS52794
Count Date:	3/12/2020	3/12/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050	24.050
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.508	0.511
Target Conc. (pCi/L, g, F):	4.736	4.705
Uncertainty (Calculated):	0.057	0.056
Result (pCi/L, g, F):	5.759	4.415
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.851	0.768
Numerical Performance Indicator:	2.35	-0.74
Percent Recovery:	121.60%	93.83%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS52794
Duplicate Sample I.D.:	LCS52794
Sample Result Counting Uncertainty (pCi/L, g, F):	5.759
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.851
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.415
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.298
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	25.78%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

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

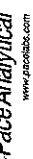
**Batch must be re-prepped due to unacceptable precision.

Handwritten: OK
3/12/20
LAL

Handwritten: N/A
3/12/20

Handwritten: LAM 3/12/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52794
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875683
MB Concentration:	0.605
MB Counting Uncertainty:	0.314
MB MDC:	0.434
MB Numerical Performance Indicator:	3.78
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD52794	LCSD52794
Count Date:	3/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.508
Target Conc. (pCi/L, g, F):	4.736
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	5.759
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.851
Numerical Performance Indicator:	2.35
Percent Recovery:	121.60%
Status vs. Numerical Indicator:	N/A
Status vs. Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2629679001
Duplicate Sample I.D.:	2629679001DUP
Sample Result (pCi/L, g, F):	0.267
Sample Result Counting Uncertainty (pCi/L, g, F):	0.290
Sample Duplicate Result (pCi/L, g, F):	0.676
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.313
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	1.677
Duplicate RPD:	86.67%
Duplicate Status vs. Numerical Indicator:	N/A
Duplicate Status vs. RPD:	Fail***
% RPD Limit:	25%

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

Comments:

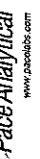
* The method blank result is below the reporting limit for this analysis and is acceptable.
Batch must be re-prepped due to unacceptable precision.

Handwritten signatures and initials

Handwritten text: 08020101000

Handwritten text: LAM 3/12/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52795
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875684
MB Concentration:	0.672
M/B Counting Uncertainty:	0.300
MB MDC:	0.310
MB Numerical Performance Indicator:	4.38
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSS52795	LCSD52795
Count Date:	3/12/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24,050
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.501
Target Conc. (pCi/L, g, F):	4.800
Uncertainty (Calculated):	0.056
Result (pCi/L, g, F):	5.017
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.798
Numerical Performance Indicator:	0.53
Percent Recovery:	104.52%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2629701016
Duplicate Sample I.D.:	2629701016DUP
Sample Result (pCi/L, g, F):	2.053
Sample Result Counting Uncertainty (pCi/L, g, F):	0.529
Sample Duplicate Result (pCi/L, g, F):	1.349
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.436
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	2.012
Duplicate RPD:	41.39%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.
*** Batch method blank prepared due to unacceptable precision.

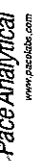
M/A-C3/12/20

Sample Matrix Spike Control Assessment	
Sample Collection Date:	MS/MSD 1
Sample I.D.:	MS/MSD 2
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
M/SMSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (pCi/L, g, F):	
M/SD Aliquot (L, g, F):	
M/SD Target Conc. (pCi/L, g, F):	
M/S Spike Uncertainty (calculated):	
M/S Spike Uncertainty (calculated):	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
M/S Numerical Performance Indicator:	
M/S Numerical Performance Indicator:	
MS Percent Recovery:	
MS Status vs Numerical Indicator:	
M/S Status vs Numerical Indicator:	
MS Status vs Recovery:	
M/S Status vs Recovery:	
M/SMSD Upper % Recovery Limits:	
M/SMSD Lower % Recovery Limits:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	Sample I.D.
Sample MS I.D.:	Sample MS I.D.
Sample MSD I.D.:	Sample MSD I.D.
Sample Matrix Spike Result:	Sample Matrix Spike Result
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result
Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Duplicate Numerical Performance Indicator:
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
Duplicate Numerical Performance Indicator:	MS/MSD Duplicate Status vs Numerical Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	MS/MSD Duplicate Status vs RPD:
MS/MSD Duplicate Status vs Numerical Indicator:	% RPD Limit:

3/12/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52795
Matrix: DW

Method Blank Assessment	
MB Sample ID	1875684
MB concentration:	0.672
M/B Counting Uncertainty:	0.300
MB MDC:	0.310
MB Numerical Performance Indicator:	4.38
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
Count Date:	3/12/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.050
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.507
Target Conc. (pCi/L, g, F):	4.800
Uncertainty (Calculated):	0.058
Result (pCi/L, g, F):	5.017
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.798
Numerical Performance Indicator:	0.53
Percent Recovery:	104.52%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS52795
Duplicate Sample I.D.:	LCS052795
Sample Result (pCi/L, g, F):	5.017
Sample Result Counting Uncertainty (pCi/L, g, F):	0.798
Sample Duplicate Result (pCi/L, g, F):	5.026
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.806
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.016
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.27%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

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

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

03/11/2020
LAL

1/2/2020
LAL

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: VAL
Date: 3/13/2020
Worklist: 52796
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1875688
MB concentration:	0.275
M/B 2 Sigma CSU:	0.357
MB MDC:	0.757
MB Numerical Performance Indicator:	1.51
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	Y
LCSD52796	3/24/2020
Count Date:	3/24/2020
Spike I.D.:	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.729
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.809
Target Conc. (pCi/L, g, F):	4.294
Uncertainty (Calculated):	0.309
Result (pCi/L, g, F):	3.349
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.658
Numerical Performance Indicator:	-5.69
Percent Recovery:	50.99%
Status vs Numerical Indicator:	Fail**
Upper % Recovery Limits:	135%
Lower % Recovery Limits:	60%

Duplicate Sample Assessment	
Sample I.D.:	LCSD52796
Duplicate Sample ID:	LCSD52796
Sample Result (pCi/L, g, F):	2.200
Sample Duplicate Result (pCi/L, g, F):	0.658
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	3.349
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.938
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.964
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	41.86%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Fail**
% RPD Limit:	36%

Sample Matrix Spike Control Assessment		MS/MSD 1	MS/MSD 2
Sample Collection Date:	Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result:	Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	Sample MS I.D. Sample MSD I.D.
Sample Matrix Spike Result:	Sample Matrix Spike Duplicate Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

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

Comments:

**Batch must be re-prepped due to LCS failure.

*Full on 40 Speed
su 2nd Order
3/27/20*

Quintero

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: VAL
Date: 3/25/2020
Worklist: 52796
Matrix:

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment

MB Sample ID
MB concentration:
MB MDC:
MB Numerical Performance Indicator:
MB Status vs Numerical Indicator:
MB Status vs. MDC:

	LCS/D (Y or N)?	
	LCS52796	LCS52796
Count Date:	3/27/2020	3/27/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.689	34.689
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.805	0.808
Target Conc. (pCi/L, g, F):	4.312	4.290
Uncertainty (Calculated):	0.310	0.309
Result (pCi/L, g, F):	3.656	3.410
Numerical Performance Indicator:	-1.32	-1.83
Percent Recovery:	84.79%	79.49%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	Pass	Pass
Lower % Recovery Limits:	135%	135%
	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result:</p> <p>Sample Matrix Spike Result:</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>		

Laboratory Control Sample Assessment	Duplicate Sample Assessment
<p>Count Date:</p> <p>Spike I.D.:</p> <p>Decay Corrected Spike Concentration (pCi/mL):</p> <p>Volume Used (mL):</p> <p>Aliquot Volume (L, g, F):</p> <p>Target Conc. (pCi/L, g, F):</p> <p>Uncertainty (Calculated):</p> <p>Result (pCi/L, g, F):</p> <p>Numerical Performance Indicator:</p> <p>Percent Recovery:</p> <p>Status vs Numerical Indicator:</p> <p>Upper % Recovery Limits:</p> <p>Lower % Recovery Limits:</p>	<p>Sample I.D.:</p> <p>Duplicate Sample I.D.:</p> <p>Sample Result (pCi/L, g, F):</p> <p>Sample Duplicate Result (pCi/L, g, F):</p> <p>Are sample and/or duplicate results below RL? NO</p> <p>Duplicate Numerical Performance Indicator:</p> <p>Duplicate Percent Recoveries) Duplicate RPD:</p> <p>Duplicate Status vs Numerical Indicator:</p> <p>Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>
<p>Count Date:</p> <p>Spike I.D.:</p> <p>Decay Corrected Spike Concentration (pCi/mL):</p> <p>Volume Used (mL):</p> <p>Aliquot Volume (L, g, F):</p> <p>Target Conc. (pCi/L, g, F):</p> <p>Uncertainty (Calculated):</p> <p>Result (pCi/L, g, F):</p> <p>Numerical Performance Indicator:</p> <p>Percent Recovery:</p> <p>Status vs Numerical Indicator:</p> <p>Upper % Recovery Limits:</p> <p>Lower % Recovery Limits:</p>	<p>Enter Duplicate sample IDs if other than LCS/LCSD in the space below.</p>

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

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

Comments:

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 3/13/2020
Worklist: 52797
Matrix: WT



Method Blank Assessment	
MB Sample ID	1875690
MB concentration:	0.303
M/B 2 Sigma CSU:	0.321
MB MDC:	0.863
MB Numerical Performance Indicator:	1.85
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD52797	LCSD52797
Count Date:	3/25/2020	3/25/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.720	34.720
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.810
Target Conc. (pCi/L, g, F):	4.288	4.285
Uncertainty (Calculated):	0.309	0.308
Result (pCi/L, g, F):	2.886	3.789
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.783	0.907
Numerical Performance Indicator:	-3.27	-1.02
Percent Recovery:	67.30%	88.42%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D.:</p> <p>Duplicate Sample I.D.:</p> <p>Sample Result (pCi/L, g, F):</p> <p>Sample Duplicate Result (pCi/L, g, F):</p> <p>Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Are sample and/or duplicate results below RL?</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:</p> <p>Duplicate Status vs Numerical Indicator:</p> <p>Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>	<p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:</p> <p>MS/ MSD Duplicate Status vs Numerical Indicator:</p> <p>MS/ MSD Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>
<p>LCSD52797</p> <p>LCSD52797</p> <p>2.886</p> <p>0.783</p> <p>3.789</p> <p>0.907</p> <p>NO</p> <p>-1.477</p> <p>27.13%</p> <p>Pass</p> <p>Pass</p> <p>36%</p>	<p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:</p> <p>MS/ MSD Duplicate Status vs Numerical Indicator:</p> <p>MS/ MSD Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>

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

Comments:

Handwritten signature/initials

July 08, 2020

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

RE: Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 26, 2020 and April 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Atlanta, GA

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Lauren Petty, Southern Company Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630472001	HGWA-1	Water	03/25/20 15:56	03/26/20 11:10
2630472002	HGWA-3	Water	03/25/20 15:17	03/26/20 11:10
2630472003	HGWA-2	Water	03/25/20 16:32	03/26/20 11:10
2630472004	HGWA-6	Water	03/25/20 17:15	03/26/20 11:10
2630472005	HGWA-5	Water	03/26/20 09:20	03/27/20 13:00
2630472006	HGWA-4	Water	03/26/20 12:55	03/27/20 13:00
2630472007	HGWC-15	Water	03/26/20 14:45	03/27/20 13:00
2630472008	MW-22	Water	03/27/20 16:10	03/30/20 10:20
2630472009	HGWC-14	Water	03/30/20 09:55	03/31/20 11:35
2630472010	FD-02	Water	03/30/20 00:00	03/31/20 11:35
2630472011	HGWC-16	Water	03/30/20 11:25	03/31/20 11:35
2630472012	FB-02	Water	03/30/20 17:35	03/31/20 11:35
2630472013	HGWC-17	Water	03/31/20 09:00	04/01/20 10:30
2630472014	HGWC-18	Water	03/31/20 13:30	04/01/20 10:30
2630472015	MW-21D	Water	04/01/20 12:04	04/02/20 10:25
2630472016	MW-33	Water	04/01/20 10:02	04/02/20 10:25
2630472017	MW-23D	Water	04/01/20 11:37	04/02/20 10:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472001	HGWA-1	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472002	HGWA-3	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472003	HGWA-2	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472004	HGWA-6	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	VHB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472005	HGWA-5	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472006	HGWA-4	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472007	HGWC-15	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472008	MW-22	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	TC1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2630472009	HGWC-14	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2630472010	FD-02	EPA 6010D	DRB	1	PASI-GA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472011	HGWC-16	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
2630472012	FB-02	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
2630472013	HGWC-17	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
2630472014	HGWC-18	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
2630472015	MW-21D	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
2630472016	MW-33	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
2630472017	MW-23D	EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		SM 2540C	JRS	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-GA = Pace Analytical Services - Atlanta, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472001	HGWA-1					
	Field pH	6.95	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	127	mg/L	1.0	04/02/20 13:58	
EPA 6020B	Barium	0.043	mg/L	0.010	04/02/20 20:39	
EPA 6020B	Boron	0.025J	mg/L	0.10	04/02/20 20:39	
EPA 6020B	Chromium	0.00072J	mg/L	0.010	04/02/20 20:39	
EPA 6020B	Lithium	0.00083J	mg/L	0.030	04/02/20 20:39	
SM 2540C	Total Dissolved Solids	496	mg/L	10.0	04/01/20 15:05	
EPA 300.0 Rev 2.1 1993	Chloride	20.4	mg/L	1.0	04/03/20 00:17	M1
EPA 300.0 Rev 2.1 1993	Fluoride	0.098J	mg/L	0.30	04/03/20 00:17	
EPA 300.0 Rev 2.1 1993	Sulfate	85.9	mg/L	1.0	04/03/20 00:17	
2630472002	HGWA-3					
	Field pH	7.4	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	89.8	mg/L	1.0	04/02/20 14:01	
EPA 6020B	Barium	0.13	mg/L	0.010	04/02/20 20:56	
EPA 6020B	Boron	0.0096J	mg/L	0.10	04/02/20 20:56	
EPA 6020B	Lithium	0.0035J	mg/L	0.030	04/02/20 20:56	
SM 2540C	Total Dissolved Solids	284	mg/L	10.0	04/01/20 15:05	
EPA 300.0 Rev 2.1 1993	Chloride	6.1	mg/L	1.0	04/03/20 01:01	
EPA 300.0 Rev 2.1 1993	Sulfate	50.5	mg/L	1.0	04/03/20 01:01	
2630472003	HGWA-2					
	Field pH	5.36	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	23.0	mg/L	1.0	04/02/20 14:05	
EPA 6020B	Barium	0.12	mg/L	0.010	04/02/20 21:02	
EPA 6020B	Beryllium	0.00016J	mg/L	0.0030	04/02/20 21:02	
EPA 6020B	Boron	0.039J	mg/L	0.10	04/02/20 21:02	
EPA 6020B	Cadmium	0.00014J	mg/L	0.0025	04/02/20 21:02	
EPA 6020B	Cobalt	0.020	mg/L	0.0050	04/02/20 21:02	
EPA 6020B	Lead	0.00011J	mg/L	0.0050	04/02/20 21:02	
EPA 6020B	Lithium	0.0017J	mg/L	0.030	04/02/20 21:02	
SM 2540C	Total Dissolved Solids	138	mg/L	10.0	04/01/20 15:06	
EPA 300.0 Rev 2.1 1993	Chloride	5.2	mg/L	1.0	04/03/20 01:46	
EPA 300.0 Rev 2.1 1993	Sulfate	46.3	mg/L	1.0	04/03/20 01:46	
2630472004	HGWA-6					
	Field pH	7.39	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	58.1	mg/L	1.0	04/02/20 14:08	
EPA 6020B	Barium	0.19	mg/L	0.010	04/03/20 13:16	
EPA 6020B	Boron	0.021J	mg/L	0.10	04/03/20 13:16	
EPA 6020B	Lithium	0.011J	mg/L	0.030	04/03/20 13:16	
EPA 6020B	Thallium	0.000057J	mg/L	0.0010	04/03/20 13:16	
SM 2540C	Total Dissolved Solids	240	mg/L	10.0	04/01/20 15:09	
EPA 300.0 Rev 2.1 1993	Chloride	1.2	mg/L	1.0	04/03/20 02:01	
EPA 300.0 Rev 2.1 1993	Sulfate	35.1	mg/L	1.0	04/03/20 02:01	
2630472005	HGWA-5					
	Field pH	6.38	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	27.8	mg/L	1.0	04/02/20 17:25	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472005	HGWA-5					
EPA 6020B	Barium	0.045	mg/L	0.010	04/02/20 22:12	
EPA 6020B	Boron	0.0072J	mg/L	0.10	04/02/20 22:12	
EPA 6020B	Cobalt	0.0013J	mg/L	0.0050	04/02/20 22:12	
EPA 6020B	Lithium	0.0029J	mg/L	0.030	04/02/20 22:12	
SM 2540C	Total Dissolved Solids	104	mg/L	10.0	04/02/20 15:00	
EPA 300.0 Rev 2.1 1993	Chloride	1.4	mg/L	1.0	04/02/20 21:49	
EPA 300.0 Rev 2.1 1993	Fluoride	0.066J	mg/L	0.30	04/02/20 21:49	
EPA 300.0 Rev 2.1 1993	Sulfate	21.6	mg/L	1.0	04/02/20 21:49	
2630472006	HGWA-4					
	Field pH	5.77	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	14.9	mg/L	1.0	04/03/20 14:51	
EPA 6020B	Barium	0.026	mg/L	0.010	04/02/20 22:18	
EPA 6020B	Beryllium	0.000076J	mg/L	0.0030	04/02/20 22:18	
EPA 6020B	Boron	0.012J	mg/L	0.10	04/02/20 22:18	
EPA 6020B	Cobalt	0.00058J	mg/L	0.0050	04/02/20 22:18	
EPA 6020B	Lead	0.000059J	mg/L	0.0050	04/02/20 22:18	
EPA 6020B	Lithium	0.00095J	mg/L	0.030	04/02/20 22:18	
SM 2540C	Total Dissolved Solids	69.0	mg/L	10.0	04/02/20 15:00	D6
EPA 300.0 Rev 2.1 1993	Chloride	3.4	mg/L	1.0	04/02/20 22:04	
2630472007	HGWC-15					
	Field pH	6.03	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	240	mg/L	1.0	04/02/20 17:56	
EPA 6020B	Barium	0.016	mg/L	0.010	04/02/20 22:24	
EPA 6020B	Boron	2.1	mg/L	0.10	04/02/20 22:24	
EPA 6020B	Cadmium	0.0016J	mg/L	0.0025	04/02/20 22:24	
EPA 6020B	Cobalt	0.022	mg/L	0.0050	04/02/20 22:24	
EPA 6020B	Lithium	0.0061J	mg/L	0.030	04/02/20 22:24	
SM 2540C	Total Dissolved Solids	1000	mg/L	10.0	04/02/20 15:00	
EPA 300.0 Rev 2.1 1993	Chloride	142	mg/L	9.0	04/03/20 09:30	
EPA 300.0 Rev 2.1 1993	Sulfate	438	mg/L	9.0	04/03/20 09:30	
2630472008	MW-22					
	Field pH	5.71	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	212	mg/L	1.0	04/03/20 22:36	
EPA 6020B	Barium	0.025	mg/L	0.010	04/03/20 16:59	
EPA 6020B	Boron	2.4	mg/L	0.10	04/03/20 16:59	
EPA 6020B	Cadmium	0.0019J	mg/L	0.0025	04/03/20 16:59	
EPA 6020B	Cobalt	0.025	mg/L	0.0050	04/03/20 16:59	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	04/03/20 16:59	
SM 2540C	Total Dissolved Solids	1100	mg/L	10.0	04/02/20 17:56	
EPA 300.0 Rev 2.1 1993	Chloride	141	mg/L	8.0	04/03/20 13:31	
EPA 300.0 Rev 2.1 1993	Sulfate	419	mg/L	8.0	04/03/20 13:31	
2630472009	HGWC-14					
	Field pH	4.57	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	600	mg/L	10.0	04/06/20 13:38	
EPA 6020B	Arsenic	0.0051	mg/L	0.0050	04/02/20 16:04	B

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472009	HGWC-14					
EPA 6020B	Barium	0.020	mg/L	0.010	04/02/20 16:04	
EPA 6020B	Beryllium	0.00043J	mg/L	0.0030	04/02/20 16:04	
EPA 6020B	Boron	11.7	mg/L	1.0	04/03/20 10:30	
EPA 6020B	Chromium	0.00066J	mg/L	0.010	04/02/20 16:04	
EPA 6020B	Cobalt	0.028	mg/L	0.0050	04/02/20 16:04	
EPA 6020B	Lead	0.0015J	mg/L	0.0050	04/02/20 16:04	
EPA 6020B	Selenium	0.0049J	mg/L	0.010	04/02/20 16:04	
EPA 6020B	Thallium	0.00028J	mg/L	0.0010	04/02/20 16:04	
SM 2540C	Total Dissolved Solids	2590	mg/L	10.0	04/06/20 18:46	
EPA 300.0 Rev 2.1 1993	Chloride	236	mg/L	22.0	04/05/20 07:37	
EPA 300.0 Rev 2.1 1993	Fluoride	0.092J	mg/L	0.30	04/04/20 17:18	
EPA 300.0 Rev 2.1 1993	Sulfate	1150	mg/L	22.0	04/05/20 07:37	
2630472010	FD-02					
EPA 6010D	Calcium	607	mg/L	10.0	04/06/20 13:41	
EPA 6020B	Arsenic	0.0048J	mg/L	0.0050	04/02/20 16:10	B
EPA 6020B	Barium	0.019	mg/L	0.010	04/02/20 16:10	
EPA 6020B	Beryllium	0.00040J	mg/L	0.0030	04/02/20 16:10	
EPA 6020B	Boron	11.5	mg/L	1.0	04/03/20 10:36	
EPA 6020B	Cadmium	0.00012J	mg/L	0.0025	04/02/20 16:10	
EPA 6020B	Chromium	0.00041J	mg/L	0.010	04/02/20 16:10	
EPA 6020B	Cobalt	0.027	mg/L	0.0050	04/02/20 16:10	
EPA 6020B	Lead	0.0014J	mg/L	0.0050	04/02/20 16:10	
EPA 6020B	Selenium	0.0054J	mg/L	0.010	04/02/20 16:10	
EPA 6020B	Thallium	0.00027J	mg/L	0.0010	04/02/20 16:10	
SM 2540C	Total Dissolved Solids	2480	mg/L	10.0	04/06/20 18:46	
EPA 300.0 Rev 2.1 1993	Chloride	233	mg/L	22.0	04/05/20 07:51	
EPA 300.0 Rev 2.1 1993	Fluoride	0.13J	mg/L	0.30	04/04/20 17:33	
EPA 300.0 Rev 2.1 1993	Sulfate	1130	mg/L	22.0	04/05/20 07:51	
2630472011	HGWC-16					
	Field pH	7.09	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	208	mg/L	1.0	04/03/20 20:33	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	04/02/20 16:15	B
EPA 6020B	Barium	0.11	mg/L	0.010	04/02/20 16:15	
EPA 6020B	Boron	2.4	mg/L	0.10	04/02/20 16:15	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	04/02/20 16:15	
EPA 6020B	Lead	0.000073J	mg/L	0.0050	04/02/20 16:15	
EPA 6020B	Lithium	0.0041J	mg/L	0.030	04/02/20 16:15	
SM 2540C	Total Dissolved Solids	787	mg/L	10.0	04/06/20 18:46	
EPA 300.0 Rev 2.1 1993	Chloride	80.2	mg/L	1.0	04/04/20 17:47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.059J	mg/L	0.30	04/04/20 17:47	
EPA 300.0 Rev 2.1 1993	Sulfate	223	mg/L	5.0	04/05/20 08:06	
2630472012	FB-02					
EPA 6020B	Boron	0.032J	mg/L	0.10	04/02/20 16:21	
EPA 6020B	Chromium	0.00059J	mg/L	0.010	04/02/20 16:21	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472013	HGWC-17					
	Field pH	6.28	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	328	mg/L	10.0	04/03/20 17:12	
EPA 6020B	Arsenic	0.00080J	mg/L	0.0050	04/08/20 18:17	B
EPA 6020B	Barium	0.029	mg/L	0.010	04/08/20 18:17	
EPA 6020B	Boron	6.9	mg/L	0.50	04/09/20 10:45	
EPA 6020B	Cobalt	0.016	mg/L	0.0050	04/08/20 18:17	
EPA 6020B	Lead	0.000077J	mg/L	0.0050	04/08/20 18:17	
EPA 6020B	Lithium	0.00090J	mg/L	0.030	04/08/20 18:17	
EPA 6020B	Thallium	0.00014J	mg/L	0.0010	04/08/20 18:17	
SM 2540C	Total Dissolved Solids	1310	mg/L	10.0	04/07/20 12:18	
EPA 300.0 Rev 2.1 1993	Chloride	161	mg/L	10.0	04/05/20 09:34	
EPA 300.0 Rev 2.1 1993	Sulfate	484	mg/L	10.0	04/05/20 09:34	
2630472014	HGWC-18					
	Field pH	4.43	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	418	mg/L	10.0	04/03/20 17:15	
EPA 6020B	Arsenic	0.0056	mg/L	0.0050	04/08/20 18:22	B
EPA 6020B	Barium	0.029	mg/L	0.010	04/08/20 18:22	
EPA 6020B	Beryllium	0.0030	mg/L	0.0030	04/08/20 18:22	
EPA 6020B	Boron	9.4	mg/L	0.50	04/09/20 10:51	
EPA 6020B	Cadmium	0.0017J	mg/L	0.0025	04/08/20 18:22	
EPA 6020B	Cobalt	0.16	mg/L	0.0050	04/08/20 18:22	
EPA 6020B	Lead	0.0014J	mg/L	0.0050	04/08/20 18:22	
EPA 6020B	Lithium	0.012J	mg/L	0.030	04/08/20 18:22	
EPA 6020B	Selenium	0.019	mg/L	0.010	04/08/20 18:22	
EPA 6020B	Thallium	0.00015J	mg/L	0.0010	04/08/20 18:22	
SM 2540C	Total Dissolved Solids	1860	mg/L	10.0	04/07/20 12:18	
EPA 300.0 Rev 2.1 1993	Chloride	126	mg/L	19.0	04/05/20 10:15	
EPA 300.0 Rev 2.1 1993	Fluoride	0.45	mg/L	0.30	04/04/20 19:32	
EPA 300.0 Rev 2.1 1993	Sulfate	934	mg/L	19.0	04/05/20 10:15	
2630472015	MW-21D					
	Field pH	6.90	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	438	mg/L	10.0	04/07/20 16:20	
EPA 6020B	Arsenic	0.0013J	mg/L	0.0050	04/08/20 19:08	B
EPA 6020B	Barium	0.066	mg/L	0.010	04/08/20 19:08	
EPA 6020B	Boron	6.3	mg/L	0.50	04/09/20 11:08	
EPA 6020B	Lead	0.000048J	mg/L	0.0050	04/08/20 19:08	
EPA 6020B	Lithium	0.026J	mg/L	0.030	04/08/20 19:08	
EPA 6020B	Molybdenum	0.024	mg/L	0.010	04/08/20 19:08	
SM 2540C	Total Dissolved Solids	1940	mg/L	10.0	04/07/20 12:20	
EPA 300.0 Rev 2.1 1993	Chloride	236	mg/L	18.0	04/05/20 07:00	
EPA 300.0 Rev 2.1 1993	Sulfate	889	mg/L	18.0	04/05/20 07:00	
2630472016	MW-33					
	Field pH	4.35	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	567	mg/L	10.0	04/07/20 16:24	
EPA 6020B	Arsenic	0.0061	mg/L	0.0050	04/08/20 19:25	B
EPA 6020B	Barium	0.027	mg/L	0.010	04/08/20 19:25	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
2630472016	MW-33					
EPA 6020B	Beryllium	0.0011J	mg/L	0.0030	04/08/20 19:25	
EPA 6020B	Boron	11.6	mg/L	1.0	04/09/20 11:14	
EPA 6020B	Cadmium	0.00022J	mg/L	0.0025	04/08/20 19:25	
EPA 6020B	Chromium	0.00069J	mg/L	0.010	04/08/20 19:25	
EPA 6020B	Cobalt	0.058	mg/L	0.0050	04/08/20 19:25	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	04/08/20 19:25	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	04/08/20 19:25	
EPA 6020B	Selenium	0.011	mg/L	0.010	04/08/20 19:25	
EPA 6020B	Thallium	0.00029J	mg/L	0.0010	04/08/20 19:25	
SM 2540C	Total Dissolved Solids	2590	mg/L	10.0	04/07/20 12:20	
EPA 300.0 Rev 2.1 1993	Chloride	242	mg/L	24.0	04/05/20 07:14	
EPA 300.0 Rev 2.1 1993	Fluoride	0.15J	mg/L	0.30	04/04/20 16:30	
EPA 300.0 Rev 2.1 1993	Sulfate	1210	mg/L	24.0	04/05/20 07:14	
2630472017	MW-23D					
	Field pH	6.80	Std. Units		04/07/20 14:41	
EPA 6010D	Calcium	342	mg/L	10.0	04/07/20 16:28	
EPA 6020B	Arsenic	0.00082J	mg/L	0.0050	04/08/20 19:31	B
EPA 6020B	Barium	0.065	mg/L	0.010	04/08/20 19:31	
EPA 6020B	Boron	3.5	mg/L	0.50	04/09/20 11:19	
EPA 6020B	Chromium	0.00086J	mg/L	0.010	04/08/20 19:31	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	04/08/20 19:31	
EPA 6020B	Lithium	0.0024J	mg/L	0.030	04/08/20 19:31	
EPA 6020B	Molybdenum	0.0032J	mg/L	0.010	04/08/20 19:31	
SM 2540C	Total Dissolved Solids	1530	mg/L	10.0	04/07/20 12:20	
EPA 300.0 Rev 2.1 1993	Chloride	166	mg/L	10.0	04/05/20 07:27	
EPA 300.0 Rev 2.1 1993	Sulfate	478	mg/L	10.0	04/05/20 07:27	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-1		Lab ID: 2630472001		Collected: 03/25/20 15:56		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.95	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	127	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 13:58	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:03	04/02/20 20:39	7440-38-2	
Barium	0.043	mg/L	0.010	0.00049	1	03/31/20 21:03	04/02/20 20:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/31/20 21:03	04/02/20 20:39	7440-41-7	
Boron	0.025J	mg/L	0.10	0.0049	1	03/31/20 21:03	04/02/20 20:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/31/20 21:03	04/02/20 20:39	7440-43-9	
Chromium	0.00072J	mg/L	0.010	0.00039	1	03/31/20 21:03	04/02/20 20:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:03	04/02/20 20:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:03	04/02/20 20:39	7439-92-1	
Lithium	0.00083J	mg/L	0.030	0.00078	1	03/31/20 21:03	04/02/20 20:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:03	04/02/20 20:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:03	04/02/20 20:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/31/20 21:03	04/02/20 20:39	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	496	mg/L	10.0	10.0	1		04/01/20 15:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	20.4	mg/L	1.0	0.60	1		04/03/20 00:17	16887-00-6	M1
Fluoride	0.098J	mg/L	0.30	0.050	1		04/03/20 00:17	16984-48-8	
Sulfate	85.9	mg/L	1.0	0.50	1		04/03/20 00:17	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-3		Lab ID: 2630472002		Collected: 03/25/20 15:17		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.4	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	89.8	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:01	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:03	04/02/20 20:56	7440-38-2	
Barium	0.13	mg/L	0.010	0.00049	1	03/31/20 21:03	04/02/20 20:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/31/20 21:03	04/02/20 20:56	7440-41-7	
Boron	0.0096J	mg/L	0.10	0.0049	1	03/31/20 21:03	04/02/20 20:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/31/20 21:03	04/02/20 20:56	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:03	04/02/20 20:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:03	04/02/20 20:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:03	04/02/20 20:56	7439-92-1	
Lithium	0.0035J	mg/L	0.030	0.00078	1	03/31/20 21:03	04/02/20 20:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:03	04/02/20 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:03	04/02/20 20:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/31/20 21:03	04/02/20 20:56	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	284	mg/L	10.0	10.0	1		04/01/20 15:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.1	mg/L	1.0	0.60	1		04/03/20 01:01	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 01:01	16984-48-8	
Sulfate	50.5	mg/L	1.0	0.50	1		04/03/20 01:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-2		Lab ID: 2630472003		Collected: 03/25/20 16:32		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.36	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	23.0	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:05	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:03	04/02/20 21:02	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	03/31/20 21:03	04/02/20 21:02	7440-39-3	
Beryllium	0.00016J	mg/L	0.0030	0.000074	1	03/31/20 21:03	04/02/20 21:02	7440-41-7	
Boron	0.039J	mg/L	0.10	0.0049	1	03/31/20 21:03	04/02/20 21:02	7440-42-8	
Cadmium	0.00014J	mg/L	0.0025	0.00011	1	03/31/20 21:03	04/02/20 21:02	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:03	04/02/20 21:02	7440-47-3	
Cobalt	0.020	mg/L	0.0050	0.00030	1	03/31/20 21:03	04/02/20 21:02	7440-48-4	
Lead	0.00011J	mg/L	0.0050	0.000046	1	03/31/20 21:03	04/02/20 21:02	7439-92-1	
Lithium	0.0017J	mg/L	0.030	0.00078	1	03/31/20 21:03	04/02/20 21:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:03	04/02/20 21:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:03	04/02/20 21:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/31/20 21:03	04/02/20 21:02	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	138	mg/L	10.0	10.0	1		04/01/20 15:06		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5.2	mg/L	1.0	0.60	1		04/03/20 01:46	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 01:46	16984-48-8	
Sulfate	46.3	mg/L	1.0	0.50	1		04/03/20 01:46	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-6		Lab ID: 2630472004		Collected: 03/25/20 17:15		Received: 03/26/20 11:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	7.39	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	58.1	mg/L	1.0	0.14	1	03/31/20 20:57	04/02/20 14:08	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	03/31/20 21:07	04/03/20 13:16	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	03/31/20 21:07	04/03/20 13:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/31/20 21:07	04/03/20 13:16	7440-41-7	
Boron	0.021J	mg/L	0.10	0.0049	1	03/31/20 21:07	04/03/20 13:16	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/31/20 21:07	04/03/20 13:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/31/20 21:07	04/03/20 13:16	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/31/20 21:07	04/03/20 13:16	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/31/20 21:07	04/03/20 13:16	7439-92-1	
Lithium	0.011J	mg/L	0.030	0.00078	1	03/31/20 21:07	04/03/20 13:16	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/31/20 21:07	04/03/20 13:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/31/20 21:07	04/03/20 13:16	7782-49-2	
Thallium	0.000057J	mg/L	0.0010	0.000052	1	03/31/20 21:07	04/03/20 13:16	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	240	mg/L	10.0	10.0	1		04/01/20 15:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.2	mg/L	1.0	0.60	1		04/03/20 02:01	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 02:01	16984-48-8	
Sulfate	35.1	mg/L	1.0	0.50	1		04/03/20 02:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-5		Lab ID: 2630472005		Collected: 03/26/20 09:20		Received: 03/27/20 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.38	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	27.8	mg/L	1.0	0.14	1	04/01/20 15:36	04/02/20 17:25	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 15:40	04/02/20 22:12	7440-38-2	
Barium	0.045	mg/L	0.010	0.00049	1	04/01/20 15:40	04/02/20 22:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 15:40	04/02/20 22:12	7440-41-7	
Boron	0.0072J	mg/L	0.10	0.0049	1	04/01/20 15:40	04/02/20 22:12	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 15:40	04/02/20 22:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 15:40	04/02/20 22:12	7440-47-3	
Cobalt	0.0013J	mg/L	0.0050	0.00030	1	04/01/20 15:40	04/02/20 22:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 15:40	04/02/20 22:12	7439-92-1	
Lithium	0.0029J	mg/L	0.030	0.00078	1	04/01/20 15:40	04/02/20 22:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 15:40	04/02/20 22:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 15:40	04/02/20 22:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 15:40	04/02/20 22:12	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	104	mg/L	10.0	10.0	1		04/02/20 15:00		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.4	mg/L	1.0	0.60	1		04/02/20 21:49	16887-00-6	
Fluoride	0.066J	mg/L	0.30	0.050	1		04/02/20 21:49	16984-48-8	
Sulfate	21.6	mg/L	1.0	0.50	1		04/02/20 21:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWA-4		Lab ID: 2630472006		Collected: 03/26/20 12:55		Received: 03/27/20 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.77	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	14.9	mg/L	1.0	0.14	1	04/01/20 15:36	04/03/20 14:51	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 15:40	04/02/20 22:18	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	04/01/20 15:40	04/02/20 22:18	7440-39-3	
Beryllium	0.000076J	mg/L	0.0030	0.000074	1	04/01/20 15:40	04/02/20 22:18	7440-41-7	
Boron	0.012J	mg/L	0.10	0.0049	1	04/01/20 15:40	04/02/20 22:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 15:40	04/02/20 22:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 15:40	04/02/20 22:18	7440-47-3	
Cobalt	0.00058J	mg/L	0.0050	0.00030	1	04/01/20 15:40	04/02/20 22:18	7440-48-4	
Lead	0.000059J	mg/L	0.0050	0.000046	1	04/01/20 15:40	04/02/20 22:18	7439-92-1	
Lithium	0.00095J	mg/L	0.030	0.00078	1	04/01/20 15:40	04/02/20 22:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 15:40	04/02/20 22:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 15:40	04/02/20 22:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 15:40	04/02/20 22:18	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	69.0	mg/L	10.0	10.0	1		04/02/20 15:00		D6
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.4	mg/L	1.0	0.60	1		04/02/20 22:04	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/02/20 22:04	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/02/20 22:04	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-15		Lab ID: 2630472007		Collected: 03/26/20 14:45		Received: 03/27/20 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.03	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	240	mg/L	1.0	0.14	1	04/01/20 15:36	04/02/20 17:56	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 15:40	04/02/20 22:24	7440-38-2	
Barium	0.016	mg/L	0.010	0.00049	1	04/01/20 15:40	04/02/20 22:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 15:40	04/02/20 22:24	7440-41-7	
Boron	2.1	mg/L	0.10	0.0049	1	04/01/20 15:40	04/02/20 22:24	7440-42-8	
Cadmium	0.0016J	mg/L	0.0025	0.00011	1	04/01/20 15:40	04/02/20 22:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 15:40	04/02/20 22:24	7440-47-3	
Cobalt	0.022	mg/L	0.0050	0.00030	1	04/01/20 15:40	04/02/20 22:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 15:40	04/02/20 22:24	7439-92-1	
Lithium	0.0061J	mg/L	0.030	0.00078	1	04/01/20 15:40	04/02/20 22:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 15:40	04/02/20 22:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 15:40	04/02/20 22:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 15:40	04/02/20 22:24	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1000	mg/L	10.0	10.0	1		04/02/20 15:00		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	142	mg/L	9.0	5.4	9		04/03/20 09:30	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/02/20 22:49	16984-48-8	
Sulfate	438	mg/L	9.0	4.5	9		04/03/20 09:30	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Sample: MW-22		Lab ID: 2630472008		Collected: 03/27/20 16:10		Received: 03/30/20 10:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	5.71	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	212	mg/L	1.0	0.14	1	04/01/20 19:37	04/03/20 22:36	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 18:37	04/03/20 16:59	7440-38-2	
Barium	0.025	mg/L	0.010	0.00049	1	04/01/20 18:37	04/03/20 16:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 18:37	04/03/20 16:59	7440-41-7	
Boron	2.4	mg/L	0.10	0.0049	1	04/01/20 18:37	04/03/20 16:59	7440-42-8	
Cadmium	0.0019J	mg/L	0.0025	0.00011	1	04/01/20 18:37	04/03/20 16:59	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/01/20 18:37	04/03/20 16:59	7440-47-3	
Cobalt	0.025	mg/L	0.0050	0.00030	1	04/01/20 18:37	04/03/20 16:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 18:37	04/03/20 16:59	7439-92-1	
Lithium	0.0013J	mg/L	0.030	0.00078	1	04/01/20 18:37	04/03/20 16:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:37	04/03/20 16:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 18:37	04/03/20 16:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 18:37	04/03/20 16:59	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1100	mg/L	10.0	10.0	1		04/02/20 17:56		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	141	mg/L	8.0	4.8	8		04/03/20 13:31	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/03/20 06:05	16984-48-8	
Sulfate	419	mg/L	8.0	4.0	8		04/03/20 13:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-14		Lab ID: 2630472009		Collected: 03/30/20 09:55		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	4.57	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	600	mg/L	10.0	1.4	10	04/01/20 18:00	04/06/20 13:38	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0051	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:04	7440-38-2	B
Barium	0.020	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:04	7440-39-3	
Beryllium	0.00043J	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:04	7440-41-7	
Boron	11.7	mg/L	1.0	0.049	10	04/01/20 18:00	04/03/20 10:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:04	7440-43-9	
Chromium	0.00066J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:04	7440-47-3	
Cobalt	0.028	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:04	7440-48-4	
Lead	0.0015J	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:04	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:04	7439-98-7	
Selenium	0.0049J	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:04	7782-49-2	
Thallium	0.00028J	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:04	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	2590	mg/L	10.0	10.0	1		04/06/20 18:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	236	mg/L	22.0	13.2	22		04/05/20 07:37	16887-00-6	
Fluoride	0.092J	mg/L	0.30	0.050	1		04/04/20 17:18	16984-48-8	
Sulfate	1150	mg/L	22.0	11.0	22		04/05/20 07:37	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: FD-02		Lab ID: 2630472010		Collected: 03/30/20 00:00		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	607	mg/L	10.0	1.4	10	04/01/20 18:00	04/06/20 13:41	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0048J	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:10	7440-38-2	B
Barium	0.019	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:10	7440-39-3	
Beryllium	0.00040J	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:10	7440-41-7	
Boron	11.5	mg/L	1.0	0.049	10	04/01/20 18:00	04/03/20 10:36	7440-42-8	
Cadmium	0.00012J	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:10	7440-43-9	
Chromium	0.00041J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:10	7440-47-3	
Cobalt	0.027	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:10	7440-48-4	
Lead	0.0014J	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:10	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:10	7439-98-7	
Selenium	0.0054J	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:10	7782-49-2	
Thallium	0.00027J	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:10	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	2480	mg/L	10.0	10.0	1		04/06/20 18:46		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	233	mg/L	22.0	13.2	22		04/05/20 07:51	16887-00-6	
Fluoride	0.13J	mg/L	0.30	0.050	1		04/04/20 17:33	16984-48-8	
Sulfate	1130	mg/L	22.0	11.0	22		04/05/20 07:51	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-16		Lab ID: 2630472011		Collected: 03/30/20 11:25		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Atlanta, GA								
Field pH	7.09	Std. Units			1		04/07/20 14:41		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA								
Calcium	208	mg/L	1.0	0.14	1	04/01/20 18:00	04/03/20 20:33	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA								
Arsenic	0.0011J	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:15	7440-38-2	B
Barium	0.11	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:15	7440-41-7	
Boron	2.4	mg/L	0.10	0.0049	1	04/01/20 18:00	04/02/20 16:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:15	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:15	7440-48-4	
Lead	0.000073J	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:15	7439-92-1	
Lithium	0.0041J	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA								
Total Dissolved Solids	787	mg/L	10.0	10.0	1		04/06/20 18:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	80.2	mg/L	1.0	0.60	1		04/04/20 17:47	16887-00-6	
Fluoride	0.059J	mg/L	0.30	0.050	1		04/04/20 17:47	16984-48-8	
Sulfate	223	mg/L	5.0	2.5	5		04/05/20 08:06	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: FB-02		Lab ID: 2630472012		Collected: 03/30/20 17:35		Received: 03/31/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	ND	mg/L	1.0	0.14	1	04/01/20 18:00	04/03/20 20:36	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	04/01/20 18:00	04/02/20 16:21	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	04/01/20 18:00	04/02/20 16:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/01/20 18:00	04/02/20 16:21	7440-41-7	
Boron	0.032J	mg/L	0.10	0.0049	1	04/01/20 18:00	04/02/20 16:21	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/01/20 18:00	04/02/20 16:21	7440-43-9	
Chromium	0.00059J	mg/L	0.010	0.00039	1	04/01/20 18:00	04/02/20 16:21	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	04/01/20 18:00	04/02/20 16:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/01/20 18:00	04/02/20 16:21	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	04/01/20 18:00	04/02/20 16:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/01/20 18:00	04/02/20 16:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/01/20 18:00	04/02/20 16:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/01/20 18:00	04/02/20 16:21	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		04/06/20 18:47		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		04/04/20 18:02	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 18:02	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/04/20 18:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-17		Lab ID: 2630472013		Collected: 03/31/20 09:00		Received: 04/01/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.28	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	328	mg/L	10.0	1.4	10	04/02/20 14:30	04/03/20 17:12	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.00080J	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 18:17	7440-38-2	B
Barium	0.029	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 18:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 18:17	7440-41-7	
Boron	6.9	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 10:45	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 18:17	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 18:17	7440-47-3	
Cobalt	0.016	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 18:17	7440-48-4	
Lead	0.000077J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 18:17	7439-92-1	
Lithium	0.00090J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 18:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 18:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 18:17	7782-49-2	
Thallium	0.00014J	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 18:17	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1310	mg/L	10.0	10.0	1		04/07/20 12:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	161	mg/L	10.0	6.0	10		04/05/20 09:34	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 18:50	16984-48-8	M1
Sulfate	484	mg/L	10.0	5.0	10		04/05/20 09:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: HGWC-18		Lab ID: 2630472014		Collected: 03/31/20 13:30		Received: 04/01/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	4.43	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	418	mg/L	10.0	1.4	10	04/02/20 14:30	04/03/20 17:15	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0056	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 18:22	7440-38-2	B
Barium	0.029	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 18:22	7440-39-3	
Beryllium	0.0030	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 18:22	7440-41-7	
Boron	9.4	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 10:51	7440-42-8	
Cadmium	0.0017J	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 18:22	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 18:22	7440-47-3	
Cobalt	0.16	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 18:22	7440-48-4	
Lead	0.0014J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 18:22	7439-92-1	
Lithium	0.012J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 18:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 18:22	7439-98-7	
Selenium	0.019	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 18:22	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 18:22	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1860	mg/L	10.0	10.0	1		04/07/20 12:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	126	mg/L	19.0	11.4	19		04/05/20 10:15	16887-00-6	
Fluoride	0.45	mg/L	0.30	0.050	1		04/04/20 19:32	16984-48-8	
Sulfate	934	mg/L	19.0	9.5	19		04/05/20 10:15	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: MW-21D		Lab ID: 2630472015		Collected: 04/01/20 12:04		Received: 04/02/20 10:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Atlanta, GA								
Field pH	6.90	Std. Units			1		04/07/20 14:41		
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA								
Calcium	438	mg/L	10.0	1.4	10	04/03/20 15:15	04/07/20 16:20	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA								
Arsenic	0.0013J	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 19:08	7440-38-2	B
Barium	0.066	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 19:08	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 19:08	7440-41-7	
Boron	6.3	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 11:08	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 19:08	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 19:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 19:08	7440-48-4	
Lead	0.000048J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 19:08	7439-92-1	
Lithium	0.026J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 19:08	7439-93-2	
Molybdenum	0.024	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 19:08	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 19:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 19:08	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA								
Total Dissolved Solids	1940	mg/L	10.0	10.0	1		04/07/20 12:20		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	236	mg/L	18.0	10.8	18		04/05/20 07:00	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 16:16	16984-48-8	
Sulfate	889	mg/L	18.0	9.0	18		04/05/20 07:00	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: MW-33		Lab ID: 2630472016		Collected: 04/01/20 10:02		Received: 04/02/20 10:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	4.35	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	567	mg/L	10.0	1.4	10	04/03/20 15:15	04/07/20 16:24	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.0061	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 19:25	7440-38-2	B
Barium	0.027	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 19:25	7440-39-3	
Beryllium	0.0011J	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 19:25	7440-41-7	
Boron	11.6	mg/L	1.0	0.049	10	04/02/20 19:04	04/09/20 11:14	7440-42-8	
Cadmium	0.00022J	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 19:25	7440-43-9	
Chromium	0.00069J	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 19:25	7440-47-3	
Cobalt	0.058	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 19:25	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 19:25	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 19:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 19:25	7439-98-7	
Selenium	0.011	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 19:25	7782-49-2	
Thallium	0.00029J	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 19:25	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	2590	mg/L	10.0	10.0	1		04/07/20 12:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	242	mg/L	24.0	14.4	24		04/05/20 07:14	16887-00-6	
Fluoride	0.15J	mg/L	0.30	0.050	1		04/04/20 16:30	16984-48-8	
Sulfate	1210	mg/L	24.0	12.0	24		04/05/20 07:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Sample: MW-23D		Lab ID: 2630472017		Collected: 04/01/20 11:37		Received: 04/02/20 10:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Atlanta, GA									
Field pH	6.80	Std. Units			1		04/07/20 14:41		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	342	mg/L	10.0	1.4	10	04/03/20 15:15	04/07/20 16:28	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.00082J	mg/L	0.0050	0.00035	1	04/02/20 19:04	04/08/20 19:31	7440-38-2	B
Barium	0.065	mg/L	0.010	0.00049	1	04/02/20 19:04	04/08/20 19:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	04/02/20 19:04	04/08/20 19:31	7440-41-7	
Boron	3.5	mg/L	0.50	0.025	5	04/02/20 19:04	04/09/20 11:19	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	04/02/20 19:04	04/08/20 19:31	7440-43-9	
Chromium	0.00086J	mg/L	0.010	0.00039	1	04/02/20 19:04	04/08/20 19:31	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00030	1	04/02/20 19:04	04/08/20 19:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	04/02/20 19:04	04/08/20 19:31	7439-92-1	
Lithium	0.0024J	mg/L	0.030	0.00078	1	04/02/20 19:04	04/08/20 19:31	7439-93-2	
Molybdenum	0.0032J	mg/L	0.010	0.00095	1	04/02/20 19:04	04/08/20 19:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	04/02/20 19:04	04/08/20 19:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	04/02/20 19:04	04/08/20 19:31	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	1530	mg/L	10.0	10.0	1		04/07/20 12:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	166	mg/L	10.0	6.0	10		04/05/20 07:27	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		04/04/20 16:44	16984-48-8	
Sulfate	478	mg/L	10.0	5.0	10		04/05/20 07:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45121 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

METHOD BLANK: 207982 Matrix: Water
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 13:05	

LABORATORY CONTROL SAMPLE: 207983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207984 207985

Parameter	Units	207984		207985		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630449007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	157	1	1	158	157	93	15	75-125	0	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45172 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472005, 2630472006, 2630472007

METHOD BLANK: 208108 Matrix: Water
Associated Lab Samples: 2630472005, 2630472006, 2630472007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 16:01	

LABORATORY CONTROL SAMPLE: 208109

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208110 208111

Parameter	Units	208110		208111		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	107	1	1	110	108	372	91	75-125	3	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45185

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

Analysis Description: 6010D MET

Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472008

METHOD BLANK: 208195

Matrix: Water

Associated Lab Samples: 2630472008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/03/20 20:54	

LABORATORY CONTROL SAMPLE: 208196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208197 208198

Parameter	Units	208197		208198		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	27.0	1	27.9	28.3	89	125	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45190 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

METHOD BLANK: 208222 Matrix: Water
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/03/20 19:19	

LABORATORY CONTROL SAMPLE: 208223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208224 208225

Parameter	Units	2630623001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	7420 ug/L	1	1	8.7	8.6	124	119	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45218 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472013, 2630472014

METHOD BLANK: 208341 Matrix: Water
Associated Lab Samples: 2630472013, 2630472014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/02/20 18:14	

LABORATORY CONTROL SAMPLE: 208342

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208343 208344

Parameter	Units	208343		208344		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	124	1	1	128	131	368	710	75-125	3	20 M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45249	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472015, 2630472016, 2630472017

METHOD BLANK: 208586 Matrix: Water

Associated Lab Samples: 2630472015, 2630472016, 2630472017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	04/06/20 16:20	

LABORATORY CONTROL SAMPLE: 208587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208588 208589

Parameter	Units	208588		208589		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	96.2	1	97.8	98.3	156	209	75-125	1	20	M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45112 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472001, 2630472002, 2630472003

METHOD BLANK: 207955 Matrix: Water

Associated Lab Samples: 2630472001, 2630472002, 2630472003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/02/20 18:39	
Barium	mg/L	ND	0.010	0.00049	04/02/20 18:39	
Beryllium	mg/L	ND	0.0030	0.000074	04/02/20 18:39	
Boron	mg/L	ND	0.10	0.0049	04/02/20 18:39	
Cadmium	mg/L	ND	0.0025	0.00011	04/02/20 18:39	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 18:39	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 18:39	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 18:39	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 18:39	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 18:39	
Selenium	mg/L	ND	0.010	0.0013	04/02/20 18:39	
Thallium	mg/L	ND	0.0010	0.000052	04/02/20 18:39	

LABORATORY CONTROL SAMPLE: 207956

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207957 207958

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2630435012	Conc.	Conc.	Result							Result
Arsenic	mg/L	0.00070J	0.1	0.1	0.10	0.10	99	101	75-125	1	20	
Barium	mg/L	0.033	0.1	0.1	0.14	0.13	102	99	75-125	2	20	
Beryllium	mg/L	0.00034J	0.1	0.1	0.096	0.099	95	99	75-125	4	20	
Boron	mg/L	2.4	1	1	3.4	3.4	97	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	207957		207958		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630435012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	107	102	75-125	4	20		
Cobalt	mg/L	0.0016J	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Lead	mg/L	0.000075J	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Lithium	mg/L	0.016J	0.1	0.1	0.12	0.12	101	103	75-125	2	20		
Molybdenum	mg/L	0.0015J	0.1	0.1	0.11	0.11	105	104	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	99	100	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	0	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45113 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472004

METHOD BLANK: 207961 Matrix: Water
Associated Lab Samples: 2630472004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/03/20 13:05	
Barium	mg/L	ND	0.010	0.00049	04/03/20 13:05	
Beryllium	mg/L	ND	0.0030	0.000074	04/03/20 13:05	
Boron	mg/L	ND	0.10	0.0049	04/03/20 13:05	
Cadmium	mg/L	ND	0.0025	0.00011	04/03/20 13:05	
Chromium	mg/L	ND	0.010	0.00039	04/03/20 13:05	
Cobalt	mg/L	ND	0.0050	0.00030	04/03/20 13:05	
Lead	mg/L	ND	0.0050	0.000046	04/03/20 13:05	
Lithium	mg/L	ND	0.030	0.00078	04/03/20 13:05	
Molybdenum	mg/L	ND	0.010	0.00095	04/03/20 13:05	
Selenium	mg/L	ND	0.010	0.0013	04/03/20 13:05	
Thallium	mg/L	ND	0.0010	0.000052	04/03/20 13:05	

LABORATORY CONTROL SAMPLE: 207962

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	100	80-120	
Beryllium	mg/L	0.1	0.10	102	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	103	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 207963 207964

Parameter	Units	2630472004		207964		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	ND	0.1	0.10	0.099	100	99	75-125	2	20	
Barium	mg/L	0.19	0.1	0.28	0.29	92	97	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.097	0.094	97	94	75-125	4	20	
Boron	mg/L	0.021J	1	1.0	0.99	102	97	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	207963		207964		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20	
Lithium	mg/L	0.011J	0.1	0.1	0.11	0.10	97	94	75-125	4	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Thallium	mg/L	0.000057J	0.1	0.1	0.099	0.098	99	98	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45171 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472005, 2630472006, 2630472007

METHOD BLANK: 208104 Matrix: Water
Associated Lab Samples: 2630472005, 2630472006, 2630472007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/02/20 20:29	
Barium	mg/L	ND	0.010	0.00049	04/02/20 20:29	
Beryllium	mg/L	ND	0.0030	0.000074	04/02/20 20:29	
Boron	mg/L	ND	0.10	0.0049	04/02/20 20:29	
Cadmium	mg/L	ND	0.0025	0.00011	04/02/20 20:29	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 20:29	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 20:29	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 20:29	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 20:29	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 20:29	
Selenium	mg/L	ND	0.010	0.0013	04/02/20 20:29	
Thallium	mg/L	ND	0.0010	0.000052	04/02/20 20:29	

LABORATORY CONTROL SAMPLE: 208105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.093	93	80-120	
Thallium	mg/L	0.1	0.094	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208106 208107

Parameter	Units	208106		208107		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Barium	mg/L	0.0072J	0.1	0.1	0.11	0.11	101	101	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	
Boron	mg/L	0.24	1	1	1.2	1.2	94	97	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208106		208107		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20	
Chromium	mg/L	0.0016J	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.10	99	101	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.094	0.094	94	93	75-125	0	20	
Lithium	mg/L	0.0031J	0.1	0.1	0.10	0.10	98	97	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.096	0.097	95	96	75-125	2	20	
Thallium	mg/L	0.000085J	0.1	0.1	0.094	0.095	94	95	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45184 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472008

METHOD BLANK: 208191 Matrix: Water
Associated Lab Samples: 2630472008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	04/03/20 15:05	
Barium	mg/L	ND	0.010	0.00049	04/03/20 15:05	
Beryllium	mg/L	ND	0.0030	0.000074	04/03/20 15:05	
Boron	mg/L	ND	0.10	0.0049	04/03/20 15:05	
Cadmium	mg/L	ND	0.0025	0.00011	04/03/20 15:05	
Chromium	mg/L	ND	0.010	0.00039	04/03/20 15:05	
Cobalt	mg/L	ND	0.0050	0.00030	04/03/20 15:05	
Lead	mg/L	ND	0.0050	0.000046	04/03/20 15:05	
Lithium	mg/L	ND	0.030	0.00078	04/03/20 15:05	
Molybdenum	mg/L	ND	0.010	0.00095	04/03/20 15:05	
Selenium	mg/L	ND	0.010	0.0013	04/03/20 15:05	
Thallium	mg/L	ND	0.0010	0.000052	04/03/20 15:05	

LABORATORY CONTROL SAMPLE: 208192

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208193 208194

Parameter	Units	2630325039		208194		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	0.00051J	0.1	0.1	0.10	0.10	99	100	75-125	1	20	
Barium	mg/L	0.046	0.1	0.1	0.15	0.14	100	98	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	
Boron	mg/L	1.9	1	1	2.9	2.9	91	92	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208193		208194		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Cadmium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Chromium	mg/L	0.00058J	0.1	0.1	0.10	0.10	101	103	75-125	2	20		
Cobalt	mg/L	0.00056J	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Lead	mg/L	0.00017J	0.1	0.1	0.092	0.092	91	92	75-125	0	20		
Lithium	mg/L	0.00079J	0.1	0.1	0.099	0.10	98	100	75-125	2	20		
Molybdenum	mg/L	0.0012J	0.1	0.1	0.10	0.10	102	102	75-125	0	20		
Selenium	mg/L	0.0039J	0.1	0.1	0.10	0.11	100	104	75-125	4	20		
Thallium	mg/L	0.00014J	0.1	0.1	0.093	0.095	93	95	75-125	2	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45189 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

METHOD BLANK: 208216 Matrix: Water
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.00071J	0.0050	0.00035	04/02/20 14:43	
Barium	mg/L	ND	0.010	0.00049	04/02/20 14:43	
Beryllium	mg/L	ND	0.0030	0.000074	04/02/20 14:43	
Boron	mg/L	ND	0.10	0.0049	04/02/20 14:43	
Cadmium	mg/L	ND	0.0025	0.00011	04/02/20 14:43	
Chromium	mg/L	ND	0.010	0.00039	04/02/20 14:43	
Cobalt	mg/L	ND	0.0050	0.00030	04/02/20 14:43	
Lead	mg/L	ND	0.0050	0.000046	04/02/20 14:43	
Lithium	mg/L	ND	0.030	0.00078	04/02/20 14:43	
Molybdenum	mg/L	ND	0.010	0.00095	04/02/20 14:43	
Selenium	mg/L	ND	0.010	0.0013	04/02/20 14:43	
Thallium	mg/L	ND	0.0010	0.000052	04/02/20 14:43	

LABORATORY CONTROL SAMPLE: 208217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.10	104	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	104	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208218 208219

Parameter	Units	208218		208219		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	ND	0.1	0.1	0.099	0.098	98	96	75-125	2	20	
Barium	mg/L	0.021	0.1	0.1	0.12	0.12	97	98	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Boron	mg/L	ND	1	1	1.0	1.0	100	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Parameter	Units	208218			208219			% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		263060001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Cadmium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20			
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	99	98	75-125	1	20			
Cobalt	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20			
Lead	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	0	20			
Lithium	mg/L	ND	0.1	0.1	0.098	0.099	97	99	75-125	1	20			
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	99	99	75-125	0	20			
Selenium	mg/L	ND	0.1	0.1	0.097	0.096	96	95	75-125	1	20			
Thallium	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	2	20			

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45226 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

METHOD BLANK: 208424 Matrix: Water
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.00095J	0.0050	0.00035	04/08/20 16:57	
Barium	mg/L	ND	0.010	0.00049	04/08/20 16:57	
Beryllium	mg/L	ND	0.0030	0.000074	04/08/20 16:57	
Boron	mg/L	ND	0.10	0.0049	04/08/20 16:57	
Cadmium	mg/L	ND	0.0025	0.00011	04/08/20 16:57	
Chromium	mg/L	ND	0.010	0.00039	04/08/20 16:57	
Cobalt	mg/L	ND	0.0050	0.00030	04/08/20 16:57	
Lead	mg/L	ND	0.0050	0.000046	04/08/20 16:57	
Lithium	mg/L	ND	0.030	0.00078	04/08/20 16:57	
Molybdenum	mg/L	ND	0.010	0.00095	04/08/20 16:57	
Selenium	mg/L	ND	0.010	0.0013	04/08/20 16:57	
Thallium	mg/L	ND	0.0010	0.000052	04/08/20 16:57	

LABORATORY CONTROL SAMPLE: 208425

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	102	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.11	105	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 208426 208427

Parameter	Units	208426		208427		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	0.0022J	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Barium	mg/L	0.026	0.1	0.1	0.13	0.13	107	108	75-125	0	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.097	0.098	97	97	75-125	0	20	
Boron	mg/L	0.17	1	1	1.2	1.2	102	106	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Parameter	Units	208426		208427		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Cadmium	mg/L	ND	0.1	0.1	0.10	0.098	100	98	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	2	20	
Cobalt	mg/L	0.0014J	0.1	0.1	0.099	0.10	97	99	75-125	1	20	
Lead	mg/L	0.00030J	0.1	0.1	0.092	0.094	92	93	75-125	2	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	100	105	75-125	5	20	
Molybdenum	mg/L	0.0074J	0.1	0.1	0.11	0.11	105	105	75-125	0	20	
Selenium	mg/L	0.019	0.1	0.1	0.12	0.12	102	99	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45160	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

LABORATORY CONTROL SAMPLE: 208030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	371	93	84-108	

SAMPLE DUPLICATE: 208031

Parameter	Units	2630449005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	278	272	2	10	

SAMPLE DUPLICATE: 208032

Parameter	Units	2630472002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	284	277	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch: 45207	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472005, 2630472006, 2630472007

LABORATORY CONTROL SAMPLE: 208287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	341	85	84-108	

SAMPLE DUPLICATE: 208288

Parameter	Units	2630482003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	79.0	57.0	32	10	D6

SAMPLE DUPLICATE: 208289

Parameter	Units	2630472006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	69.0	80.0	15	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 45209	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472008

LABORATORY CONTROL SAMPLE: 208290

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	375	94	84-108	

SAMPLE DUPLICATE: 208291

Parameter	Units	2630525003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	193	188	3	10	

SAMPLE DUPLICATE: 208292

Parameter	Units	2630471008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	413	422	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch:	45274	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

LABORATORY CONTROL SAMPLE: 208728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	385	96	84-108	

SAMPLE DUPLICATE: 208729

Parameter	Units	2630576001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	6300	6560	4	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

QC Batch:	45302	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

LABORATORY CONTROL SAMPLE: 208859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	368	92	84-108	

SAMPLE DUPLICATE: 208860

Parameter	Units	2630471018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	565	535	5	10	

SAMPLE DUPLICATE: 208861

Parameter	Units	2630525018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	267	269	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 533972 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 2630472008

METHOD BLANK: 2849817 Matrix: Water
Associated Lab Samples: 2630472008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 23:19	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 23:19	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 23:19	

LABORATORY CONTROL SAMPLE: 2849818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	47.7	95	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	47.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849819 2849820

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630435024 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	5.4	50	50	56.3	57.7	102	105	90-110	2	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	106	108	90-110	2	10		
Sulfate	mg/L	ND	50	50	51.2	52.1	102	104	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849821 2849822

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630449009 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	1.6	50	50	54.0	53.9	105	105	90-110	0	10		
Fluoride	mg/L	0.13J	2.5	2.5	2.8	2.8	107	107	90-110	0	10		
Sulfate	mg/L	39.1	50	50	89.7	89.4	101	101	90-110	0	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 533983 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630472005, 2630472006, 2630472007

METHOD BLANK: 2849870 Matrix: Water
Associated Lab Samples: 2630472005, 2630472006, 2630472007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 16:46	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 16:46	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 16:46	

LABORATORY CONTROL SAMPLE: 2849871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.8	102	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849872 2849873

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2630525010 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	1.2	50	50	56.1	56.3	110	110	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	103	105	90-110	2	10		
Sulfate	mg/L	10.8	50	50	65.8	66.0	110	110	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849874 2849875

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92471182001 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	3.2	50	50	57.8	59.5	109	113	90-110	3	10	M1	
Fluoride	mg/L	0.12	2.5	2.5	2.8	2.9	109	113	90-110	4	10	M1	
Sulfate	mg/L	ND	50	50	54.8	56.8	109	112	90-110	3	10	M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 533985 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

METHOD BLANK: 2849882 Matrix: Water
Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/02/20 23:48	
Fluoride	mg/L	ND	0.10	0.050	04/02/20 23:48	
Sulfate	mg/L	ND	1.0	0.50	04/02/20 23:48	

LABORATORY CONTROL SAMPLE: 2849883

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.8	100	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	49.7	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849884 2849885

Parameter	Units	2630472001		2849884		2849885		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Spike Conc.	MS Result	MSD Result	MS % Rec						
Chloride	mg/L	20.4	50	50	75.6	76.0	110	111	90-110	1	10	M1	
Fluoride	mg/L	0.098J	2.5	2.5	2.7	2.8	104	106	90-110	2	10		
Sulfate	mg/L	85.9	50	50	138	138	103	104	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849886 2849887

Parameter	Units	2630471007		2849886		2849887		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Spike Conc.	MS Result	MSD Result	MS % Rec						
Chloride	mg/L	0.73J	50	50	58.0	58.4	114	115	90-110	1	10	M1	
Fluoride	mg/L	0.082J	2.5	2.5	2.8	2.8	109	109	90-110	0	10		
Sulfate	mg/L	176	50	50	227	231	102	109	90-110	2	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 534237 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

METHOD BLANK: 2851088 Matrix: Water
Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/04/20 14:53	
Fluoride	mg/L	ND	0.10	0.050	04/04/20 14:53	
Sulfate	mg/L	ND	1.0	0.50	04/04/20 14:53	

LABORATORY CONTROL SAMPLE: 2851089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.6	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	50	48.6	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851147 2851148

Parameter	Units	2630471014		2851147		2851148		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Chloride	mg/L	1.5	50	50	50.2	50.4	97	98	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	104	105	90-110	0	10		
Sulfate	mg/L	46.2	50	50	93.5	93.5	95	95	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851149 2851150

Parameter	Units	92471612001		2851149		2851150		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Chloride	mg/L	391	50	50	392	404	0	25	90-110	3	10	M6	
Fluoride	mg/L	0.27	2.5	2.5	2.6	2.6	93	94	90-110	1	10		
Sulfate	mg/L	119	50	50	161	166	83	93	90-110	3	10	M6	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

QC Batch: 534425 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

METHOD BLANK: 2852105 Matrix: Water
Associated Lab Samples: 2630472013, 2630472014, 2630472015, 2630472016, 2630472017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	04/04/20 14:52	
Fluoride	mg/L	ND	0.10	0.050	04/04/20 14:52	
Sulfate	mg/L	ND	1.0	0.50	04/04/20 14:52	

LABORATORY CONTROL SAMPLE: 2852106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.2	104	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	50	51.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2852107 2852108

Parameter	Units	2630491001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	124	50	50	177	178	105	109	90-110	1	10	
Fluoride	mg/L	0.59	2.5	2.5	3.2	3.3	106	110	90-110	3	10	
Sulfate	mg/L	118	50	50	170	171	103	107	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2852109 2852110

Parameter	Units	2630472013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	161	50	50	215	216	107	109	90-110	0	10	
Fluoride	mg/L	ND	2.5	2.5	2.9	3.0	116	120	90-110	3	10	M1
Sulfate	mg/L	484	50	50	534	536	100	103	90-110	0	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 1ST SEMIANNUAL
Pace Project No.: 2630472

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2630472001	HGWA-1				
2630472002	HGWA-3				
2630472003	HGWA-2				
2630472004	HGWA-6				
2630472005	HGWA-5				
2630472006	HGWA-4				
2630472007	HGWC-15				
2630472008	MW-22				
2630472009	HGWC-14				
2630472011	HGWC-16				
2630472013	HGWC-17				
2630472014	HGWC-18				
2630472015	MW-21D				
2630472016	MW-33				
2630472017	MW-23D				
2630472001	HGWA-1	EPA 3010A	45121	EPA 6010D	45135
2630472002	HGWA-3	EPA 3010A	45121	EPA 6010D	45135
2630472003	HGWA-2	EPA 3010A	45121	EPA 6010D	45135
2630472004	HGWA-6	EPA 3010A	45121	EPA 6010D	45135
2630472005	HGWA-5	EPA 3010A	45172	EPA 6010D	45193
2630472006	HGWA-4	EPA 3010A	45172	EPA 6010D	45193
2630472007	HGWC-15	EPA 3010A	45172	EPA 6010D	45193
2630472008	MW-22	EPA 3010A	45185	EPA 6010D	45196
2630472009	HGWC-14	EPA 3010A	45190	EPA 6010D	45194
2630472010	FD-02	EPA 3010A	45190	EPA 6010D	45194
2630472011	HGWC-16	EPA 3010A	45190	EPA 6010D	45194
2630472012	FB-02	EPA 3010A	45190	EPA 6010D	45194
2630472013	HGWC-17	EPA 3010A	45218	EPA 6010D	45223
2630472014	HGWC-18	EPA 3010A	45218	EPA 6010D	45223
2630472015	MW-21D	EPA 3010A	45249	EPA 6010D	45263
2630472016	MW-33	EPA 3010A	45249	EPA 6010D	45263
2630472017	MW-23D	EPA 3010A	45249	EPA 6010D	45263
2630472001	HGWA-1	EPA 3005A	45112	EPA 6020B	45137
2630472002	HGWA-3	EPA 3005A	45112	EPA 6020B	45137
2630472003	HGWA-2	EPA 3005A	45112	EPA 6020B	45137
2630472004	HGWA-6	EPA 3005A	45113	EPA 6020B	45136
2630472005	HGWA-5	EPA 3005A	45171	EPA 6020B	45192
2630472006	HGWA-4	EPA 3005A	45171	EPA 6020B	45192
2630472007	HGWC-15	EPA 3005A	45171	EPA 6020B	45192
2630472008	MW-22	EPA 3005A	45184	EPA 6020B	45197
2630472009	HGWC-14	EPA 3005A	45189	EPA 6020B	45195
2630472010	FD-02	EPA 3005A	45189	EPA 6020B	45195
2630472011	HGWC-16	EPA 3005A	45189	EPA 6020B	45195

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

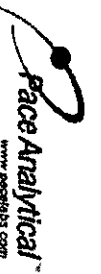
Project: HAMMOND AP-2 1ST SEMIANNUAL

Pace Project No.: 2630472

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2630472012	FB-02	EPA 3005A	45189	EPA 6020B	45195
2630472013	HGWC-17	EPA 3005A	45226	EPA 6020B	45233
2630472014	HGWC-18	EPA 3005A	45226	EPA 6020B	45233
2630472015	MW-21D	EPA 3005A	45226	EPA 6020B	45233
2630472016	MW-33	EPA 3005A	45226	EPA 6020B	45233
2630472017	MW-23D	EPA 3005A	45226	EPA 6020B	45233
2630472001	HGWA-1	SM 2540C	45160		
2630472002	HGWA-3	SM 2540C	45160		
2630472003	HGWA-2	SM 2540C	45160		
2630472004	HGWA-6	SM 2540C	45160		
2630472005	HGWA-5	SM 2540C	45207		
2630472006	HGWA-4	SM 2540C	45207		
2630472007	HGWC-15	SM 2540C	45207		
2630472008	MW-22	SM 2540C	45209		
2630472009	HGWC-14	SM 2540C	45274		
2630472010	FD-02	SM 2540C	45274		
2630472011	HGWC-16	SM 2540C	45274		
2630472012	FB-02	SM 2540C	45274		
2630472013	HGWC-17	SM 2540C	45302		
2630472014	HGWC-18	SM 2540C	45302		
2630472015	MW-21D	SM 2540C	45302		
2630472016	MW-33	SM 2540C	45302		
2630472017	MW-23D	SM 2540C	45302		
2630472001	HGWA-1	EPA 300.0 Rev 2.1 1993	533985		
2630472002	HGWA-3	EPA 300.0 Rev 2.1 1993	533985		
2630472003	HGWA-2	EPA 300.0 Rev 2.1 1993	533985		
2630472004	HGWA-6	EPA 300.0 Rev 2.1 1993	533985		
2630472005	HGWA-5	EPA 300.0 Rev 2.1 1993	533983		
2630472006	HGWA-4	EPA 300.0 Rev 2.1 1993	533983		
2630472007	HGWC-15	EPA 300.0 Rev 2.1 1993	533983		
2630472008	MW-22	EPA 300.0 Rev 2.1 1993	533972		
2630472009	HGWC-14	EPA 300.0 Rev 2.1 1993	534237		
2630472010	FD-02	EPA 300.0 Rev 2.1 1993	534237		
2630472011	HGWC-16	EPA 300.0 Rev 2.1 1993	534237		
2630472012	FB-02	EPA 300.0 Rev 2.1 1993	534237		
2630472013	HGWC-17	EPA 300.0 Rev 2.1 1993	534425		
2630472014	HGWC-18	EPA 300.0 Rev 2.1 1993	534425		
2630472015	MW-21D	EPA 300.0 Rev 2.1 1993	534425		
2630472016	MW-33	EPA 300.0 Rev 2.1 1993	534425		
2630472017	MW-23D	EPA 300.0 Rev 2.1 1993	534425		

REPORT OF LABORATORY ANALYSIS

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

Section A
 Required Client Information:

Company: GA Power
 Address: Atlanta, GA

Section B
 Required Project Information:

Report to: SCS Contacts
 Copy To: Geosynthetic Contacts

Section C
 Invoice Information:

Attention: Southern Co.

Page: **3** of **3**

Email To: SCS Contacts
 Phone: _____
 Requested Due Date/TAT: 10 Day

Purchase Order No.: **547**
 Project Name: **Plant Hammond AP-2 Semiannual Compliance Monitoring**
 Project Number: **GW65518**

Company Name: _____
 Address: _____
 State: _____
 Zip Code: _____
 Reference: **Kevin Herring**
 Project Manager: _____
 Price Profile #: **2912.5**

REGULATORY AGENCY: _____
 NPDES: _____ GROUND WATER: _____
 UST: _____ RORA: _____ DRINKING WATER: _____
 OTHER CWR: _____
 Site Location: _____ STATE: **GA**

ITEM #	Section D Required Client Information	Valid Matrix Codes ORIGIN WATER WATER WASTE WATER PRODUCT SEWAGE/SOLID OK WPE AIR OTHER TISSUE	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)		
						DATE	TIME	DATE														
1	HCWA-6	(A-Z, 0-9, /)				3/25/20	1715			5	2	3		X	X	X	X	X	X	X	X	X
2										5	2	3		X	X	X	X	X	X	X	X	X
3										5	2	3		X	X	X	X	X	X	X	X	X
4										5	2	3		X	X	X	X	X	X	X	X	X
5										5	2	3		X	X	X	X	X	X	X	X	X
6										5	2	3		X	X	X	X	X	X	X	X	X
7										5	2	3		X	X	X	X	X	X	X	X	X
8										5	2	3		X	X	X	X	X	X	X	X	X
9										5	2	3		X	X	X	X	X	X	X	X	X
10										5	2	3		X	X	X	X	X	X	X	X	X
11										5	2	3		X	X	X	X	X	X	X	X	X
12										5	2	3		X	X	X	X	X	X	X	X	X

2630472
 Pace Project No./ Lab LD.

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to site charges of 1.25% per month for any invoices not paid within 30 days.
 F-FALL-0-020rev.07 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Required Client Information:
 Company: GA Power
 Address: Atlanta, GA

Section B
 Required Project Information:
 Report for: SCS Contacts
 Copy To: Geosyntec Contacts

Section C
 Invoice Information:
 Atlanta: Southern Co.
 Company Name:
 Address:
 Pace Quote Reference: Kevin Henry
 Pace Project Manager:
 Pace Profile #: 2912-5

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER CEM

Site Location STATE: GA

Page: 1 of 2

Section D
 Required Client Information
 Valid Matrix Codes
 MATRIX CODE (see valid codes to left)
 SAMPLE TYPE (G=GRAB C=COMP)
 DATE TIME DATE TIME
 SAMPLE TEMP AT COLLECTION
 # OF CONTAINERS
 Unpreserved
 H₂SO₄
 HNO₃
 HCl
 NaOH
 Na₂S₂O₃
 Methanol
 Other
 Analysis Test
 Chloride, Fluoride, Sulfate
 TDS
 Metals 6010/6020*
 RAD 228/228
 Requested Analysis Filtered (Y/N)
 Residual Chlorine (Y/N)
 Pace Project No./ Lab ID: 2630472

ITEM #	MATRIX CODE	SAMPLE TYPE	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
			DATE	TIME								Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
1	MV-210	G	4/1/20	1204	4/1/20	1648	4/1/20	1648	4/1/20	1648	1025	Y	N	Y
2		G												
3		G												
4		G												
5		G												
6		G												
7		G												
8		G												
9		G												
10		G												
11		G												
12		G												

ADDITIONAL COMMENTS
 REINSUBMITTED BY / AFFILIATION
 DATE
 TIME
 ACCEPTED BY / AFFILIATION
 DATE
 TIME
 SAMPLE NAME AND SIGNATURE
 PRINT Name of SAMPLER: Aaron Reeder
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 04/01/2020

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days

FALL-Q-020rev.07, 15-Feb-2007

April 24, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2630472
Pace Project No.: 30356789

Dear Mr. Abraham:

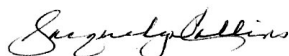
Enclosed are the analytical results for sample(s) received by the laboratory between March 27, 2020 and April 03, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,



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

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 2630472
Pace Project No.: 30356789

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 2630472
Pace Project No.: 30356789

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2630472001	HGWA-1	Water	03/25/20 15:56	03/27/20 10:35
2630472002	HGWA-3	Water	03/25/20 15:17	03/27/20 10:35
2630472003	HGWA-2	Water	03/25/20 16:32	03/27/20 10:35
2630472004	HGWA-6	Water	03/25/20 17:15	03/27/20 10:35
2630472005	HGWA-5	Water	03/26/20 09:20	03/31/20 09:00
2630472006	HGWA-4	Water	03/26/20 12:55	03/31/20 09:00
2630472007	HGWC-15	Water	03/26/20 14:45	03/31/20 09:00
2630472008	MW-22	Water	03/27/20 16:10	03/31/20 09:00
2630472013	HGWC-17	Water	03/31/20 09:00	04/02/20 09:20
2630472014	HGWC-18	Water	03/31/20 13:30	04/02/20 09:20
2630472015	MW-21D	Water	04/01/20 12:04	04/03/20 09:20
2630472016	MW-33	Water	04/01/20 10:02	04/03/20 09:20
2630472017	MW-23D	Water	04/01/20 11:37	04/03/20 09:20
2630472009	HGWC-14	Water	03/30/20 09:55	04/03/20 09:20
2630472010	FD-02	Water	03/30/20 00:01	04/03/20 09:20
2630472011	HGWC-16	Water	03/30/20 11:25	04/03/20 09:20
2630472012	FB-02	Water	03/30/20 17:35	04/03/20 09:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2630472
Pace Project No.: 30356789

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472001	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472002	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472003	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472004	HGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472005	HGWA-5	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472006	HGWA-4	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472007	HGWC-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472008	MW-22	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472013	HGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472014	HGWC-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472015	MW-21D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472016	MW-33	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472017	MW-23D	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2630472
Pace Project No.: 30356789

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2630472009	HGWC-14	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2630472010	FD-02	Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2630472011	HGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
2630472012	FB-02	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWA-1		Lab ID: 2630472001	Collected: 03/25/20 15:56	Received: 03/27/20 10:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.221 ± 0.110 (0.164)		pCi/L	04/07/20 19:26	13982-63-3	
		C:93% T:NA					
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	4.14 ± 0.967 (0.705)		pCi/L	04/15/20 14:46	15262-20-1	
		C:78% T:84%					
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	4.36 ± 1.08 (0.869)		pCi/L	04/21/20 12:17	7440-14-4	

Sample: HGWA-3		Lab ID: 2630472002	Collected: 03/25/20 15:17	Received: 03/27/20 10:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.377 ± 0.123 (0.132)		pCi/L	04/07/20 19:26	13982-63-3	
		C:95% T:NA					
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.456 ± 0.433 (0.892)		pCi/L	04/16/20 14:15	15262-20-1	
		C:80% T:80%					
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.833 ± 0.556 (1.02)		pCi/L	04/21/20 12:17	7440-14-4	

Sample: HGWA-2		Lab ID: 2630472003	Collected: 03/25/20 16:32	Received: 03/27/20 10:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.621 ± 0.163 (0.126)		pCi/L	04/07/20 19:13	13982-63-3	
		C:95% T:NA					
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	-0.0793 ± 0.309 (0.742)		pCi/L	04/16/20 14:15	15262-20-1	
		C:82% T:81%					
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.621 ± 0.472 (0.868)		pCi/L	04/21/20 12:17	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWA-6		Lab ID: 2630472004	Collected: 03/25/20 17:15	Received: 03/27/20 10:35	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.495 ± 0.147 (0.152) C:94% T:NA	pCi/L	04/07/20 19:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.0139 ± 0.356 (0.817) C:81% T:94%	pCi/L	04/16/20 14:15	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.509 ± 0.503 (0.969)	pCi/L	04/21/20 12:22	7440-14-4	

Sample: HGWA-5		Lab ID: 2630472005	Collected: 03/26/20 09:20	Received: 03/31/20 09:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.416 ± 0.283 (0.440) C:85% T:NA	pCi/L	04/09/20 08:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.491 ± 0.585 (1.23) C:74% T:82%	pCi/L	04/20/20 19:21	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.907 ± 0.868 (1.67)	pCi/L	04/21/20 12:22	7440-14-4	

Sample: HGWA-4		Lab ID: 2630472006	Collected: 03/26/20 12:55	Received: 03/31/20 09:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.293 ± 0.227 (0.348) C:88% T:NA	pCi/L	04/09/20 08:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.285 ± 0.564 (1.24) C:75% T:83%	pCi/L	04/20/20 19:23	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.578 ± 0.791 (1.59)	pCi/L	04/21/20 12:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWC-15		Lab ID: 2630472007	Collected: 03/26/20 14:45	Received: 03/31/20 09:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.132 ± 0.166 (0.328) C:85% T:NA		pCi/L	04/09/20 08:30	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.723 ± 0.589 (1.18) C:75% T:85%		pCi/L	04/20/20 19:24	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.855 ± 0.755 (1.51)		pCi/L	04/21/20 12:22	7440-14-4	

Sample: MW-22		Lab ID: 2630472008	Collected: 03/27/20 16:10	Received: 03/31/20 09:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.183 ± 0.209 (0.414) C:88% T:NA		pCi/L	04/09/20 08:30	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.777 ± 0.567 (1.10) C:75% T:89%		pCi/L	04/20/20 19:25	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.960 ± 0.776 (1.51)		pCi/L	04/21/20 12:22	7440-14-4	

Sample: HGWC-17		Lab ID: 2630472013	Collected: 03/31/20 09:00	Received: 04/02/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.404 ± 0.322 (0.602) C:95% T:NA		pCi/L	04/09/20 07:51	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.187 ± 0.368 (0.810) C:75% T:86%		pCi/L	04/21/20 14:05	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.591 ± 0.690 (1.41)		pCi/L	04/22/20 10:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWC-18		Lab ID: 2630472014	Collected: 03/31/20 13:30	Received: 04/02/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	1.99 ± 0.587 (0.361) C:91% T:NA		pCi/L	04/09/20 07:51	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.706 ± 0.457 (0.878) C:78% T:85%		pCi/L	04/21/20 14:05	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	2.70 ± 1.04 (1.24)		pCi/L	04/22/20 10:22	7440-14-4	

Sample: MW-21D		Lab ID: 2630472015	Collected: 04/01/20 12:04	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.462 ± 0.298 (0.402) C:88% T:NA		pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.296 ± 0.341 (0.716) C:82% T:82%		pCi/L	04/22/20 11:02	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.758 ± 0.639 (1.12)		pCi/L	04/23/20 09:27	7440-14-4	

Sample: MW-33		Lab ID: 2630472016	Collected: 04/01/20 10:02	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	1.11 ± 0.442 (0.446) C:96% T:NA		pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	1.46 ± 0.479 (0.639) C:82% T:87%		pCi/L	04/22/20 11:02	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	2.57 ± 0.921 (1.09)		pCi/L	04/23/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: MW-23D		Lab ID: 2630472017	Collected: 04/01/20 11:37	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.213 ± 0.244 (0.486) C:93% T:NA		pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.701 ± 0.385 (0.687) C:79% T:81%		pCi/L	04/22/20 11:02	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.914 ± 0.629 (1.17)		pCi/L	04/23/20 09:27	7440-14-4	

Sample: HGWC-14		Lab ID: 2630472009	Collected: 03/30/20 09:55	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.908 ± 0.400 (0.417) C:96% T:NA		pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.172 ± 0.345 (0.761) C:77% T:88%		pCi/L	04/22/20 14:09	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	1.08 ± 0.745 (1.18)		pCi/L	04/23/20 09:27	7440-14-4	

Sample: FD-02		Lab ID: 2630472010	Collected: 03/30/20 00:01	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.954 ± 0.416 (0.471) C:97% T:NA		pCi/L	04/09/20 20:09	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.601 ± 0.437 (0.857) C:78% T:83%		pCi/L	04/22/20 14:09	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	1.56 ± 0.853 (1.33)		pCi/L	04/23/20 09:27	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

Sample: HGWC-16		Lab ID: 2630472011	Collected: 03/30/20 11:25	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.212 ± 0.200 (0.348)		pCi/L	04/10/20 07:38	13982-63-3	
		C:95% T:NA					
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.0764 ± 0.374 (0.855)		pCi/L	04/22/20 14:09	15262-20-1	
		C:80% T:78%					
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.288 ± 0.574 (1.20)		pCi/L	04/23/20 09:27	7440-14-4	

Sample: FB-02		Lab ID: 2630472012	Collected: 03/30/20 17:35	Received: 04/03/20 09:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 9315	0.0356 ± 0.262 (0.666)		pCi/L	04/10/20 07:38	13982-63-3	
		C:85% T:NA					
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.238 ± 0.371 (0.804)		pCi/L	04/22/20 14:09	15262-20-1	
		C:76% T:88%					
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.274 ± 0.633 (1.47)		pCi/L	04/23/20 09:27	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 390462	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472001

METHOD BLANK: 1890903 Matrix: Water

Associated Lab Samples: 2630472001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.720 ± 0.398 (0.719) C:76% T:93%	pCi/L	04/15/20 14:44	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391022	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472013, 2630472014

METHOD BLANK: 1893294 Matrix: Water

Associated Lab Samples: 2630472013, 2630472014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0953 ± 0.154 (0.334) C:90% T:NA	pCi/L	04/09/20 08:10	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 390592	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

METHOD BLANK: 1891464 Matrix: Water

Associated Lab Samples: 2630472001, 2630472002, 2630472003, 2630472004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.444 ± 0.130 (0.104) C:98% T:NA	pCi/L	04/07/20 18:26	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 390595	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472002, 2630472003, 2630472004

METHOD BLANK: 1891467 Matrix: Water

Associated Lab Samples: 2630472002, 2630472003, 2630472004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.544 ± 0.340 (0.632) C:84% T:88%	pCi/L	04/16/20 14:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391017	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

METHOD BLANK: 1893284 Matrix: Water

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.237 ± 0.214 (0.384) C:97% T:NA	pCi/L	04/09/20 07:54	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch:	391019	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

METHOD BLANK: 1893286 Matrix: Water

Associated Lab Samples: 2630472005, 2630472006, 2630472007, 2630472008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.771 ± 0.384 (0.663) C:74% T:88%	pCi/L	04/20/20 12:18	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch: 391023	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472013, 2630472014

METHOD BLANK: 1893295 Matrix: Water

Associated Lab Samples: 2630472013, 2630472014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.258 ± 0.334 (0.711) C:83% T:83%	pCi/L	04/21/20 11:02	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2630472
Pace Project No.: 30356789

QC Batch:	391343	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012, 2630472015, 2630472016, 2630472017

METHOD BLANK: 1894734 Matrix: Water

Associated Lab Samples: 2630472009, 2630472010, 2630472011, 2630472012, 2630472015, 2630472016, 2630472017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.103 ± 0.0985 (0.172) C:82% T:NA	pCi/L	04/09/20 15:48	

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QUALIFIERS

Project: 2630472
Pace Project No.: 30356789

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

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Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA

Cert. Needed: Yes No

Workorder: 2630472 Workorder Name: AP-2 1ST SEMI ANNUAL COMPLIANCE Owner Received Date: 3/26/2020 Results Requested By: *RL dugs* 4/9/2020

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Greensburg, PA 15601
Phone (724)850-5600

WO#: 30356789



Item	Sample ID	Sample Type	Sample Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY	
						HNO3	Other		
1	HGWA-1	PS	3/25/2020 15:56	2630472001	Water	X	2	CC1	
2	HGWA-3	PS	3/25/2020 15:17	2630472002	Water	X	2	CC2	
3	HGWA-2	PS	3/25/2020 16:32	2630472003	Water	X	2	CC3	
4	HGWA-6	PS	3/25/2020 17:15	2630472004	Water	X	2	CC4	
						RAD 9315			
						RAD 9320			

Transfers	Released By	Date/Time	Received By	Date/Time
1			<i>[Signature]</i>	3/26/20 10:15
2				
3				

Cooler Temperature on Receipt *11.1* °C Custody Seal Y or N Y N Received on ice Y or N Y N Samples Intact Y N

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

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State of Origin: GA
 Cert. Needed: Yes No

Workorder: 2630472
 Kevin Herring
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Workorder Name: AP-2 1ST SEMIANNUAL COMPLIANCE
 Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

Results Requested By: *W djs*
 4/9/2020



Report to: *Subcontract to* Requested Analyte: *Radon*

WO#: **30356789**
 PM: JAC Due Date: 04/17/20
 CLIENT: PACE_26_ATGA

Item	Sample ID	Sample Type	Collection Date/Time	Lab ID	Matrix	HNOS	Received By	Date/Time	Released By	Received By	Date/Time	LAB USE ONLY
1	HGWA-1	PS	3/25/2020 15:58	2630472001	Water	1	<i>[Signature]</i>	3-25-20 15:58	<i>[Signature]</i>	<i>[Signature]</i>	3-25-20 15:58	
2	HGWA-3	PS	3/25/2020 15:45	2630472002	Water	1	<i>[Signature]</i>	3-25-20 15:45	<i>[Signature]</i>	<i>[Signature]</i>	3-25-20 15:45	
3	HGWA-2	PS	3/25/2020 16:55	2630472003	Water	1	<i>[Signature]</i>	3-25-20 16:55	<i>[Signature]</i>	<i>[Signature]</i>	3-25-20 16:55	
4	HGWA-4	PS	3/25/2020 17:15	2630472004	Water	1	<i>[Signature]</i>	3-25-20 17:15	<i>[Signature]</i>	<i>[Signature]</i>	3-25-20 17:15	
5	HGWA-5	PS	3/26/2020 09:20	2630472005	Water	1	<i>[Signature]</i>	3-26-20 09:20	<i>[Signature]</i>	<i>[Signature]</i>	3-26-20 09:20	
6	HGWA-4	PS	3/26/2020 12:55	2630472006	Water	1	<i>[Signature]</i>	3-26-20 12:55	<i>[Signature]</i>	<i>[Signature]</i>	3-26-20 12:55	
7	HGWA-15	PS	3/26/2020 14:45	2630472007	Water	1	<i>[Signature]</i>	3-26-20 14:45	<i>[Signature]</i>	<i>[Signature]</i>	3-26-20 14:45	

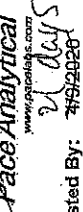
Transfers Released By: *[Signature]* Date/Time: *3-26-20 17:00*
 Received By: *[Signature]* Date/Time: *3-26-20 17:00*
 Cooler Temperature on Receipt: *NA* °C
 Custody Seal: *NA* or *N*
 Received on Ice: *Y* or *N*
 Samples Intact: *Y* or *N*

Comments: *Add on project*

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

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.



State of Origin: GA
 Cert. Needed: Yes No
 Owner Received Date: 3/26/2020 Results Requested By: *U. Kelly*

Workorder: 2630472 Workorder Name: AP-2 1ST SEMIANNUAL COMPLIANCE
 Kevin Herring
 Pace Analytical Charlotte
 9800 Kinsey Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

WO# : 30356789
 PM: JAC Due Date: 04/17/20
 CLIENT: PACE_26_ATGA

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1								
2								
3								

Sample ID	Sample Type	Sample Date/Time	Temperature °C	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N
1	HGWA-1	3/25/2020 15:56		2630472001		X	X		
2	HGWA-3	3/25/2020 16:17		2630472002		X	X		
3	HGWA-2	3/25/2020 16:23		2630472003		X	X		
4	HGWA-6	3/26/2020 17:15		2630472004		X	X		
5	HGWA-5	3/26/2020 08:20		2630472005		X	X		
6	HGWA-4	3/26/2020 12:55		2630472006		X	X		
7	HGWA-7	3/26/2020 14:45		2630472007		X	X		
8	MM-22	3/27/2020 16:10		2630472008		X	X		

LAB USE ONLY

COOLERS
 Add on project

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

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Y or N	Samples Intact	Y or N
1	[Signature]	4/12/2017	[Signature]	4/12/2017					
2									
3									

Cooler Temperature on Receipt 11.7°C

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

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: GA

Cert. Needed: Yes No

Workorder: 2630472
 Report to: Kevin Herring
 Pace Analytical Charlotte
 9800 Kinney Ave.
 Suite 100
 Huntersville, NC 28078
 Phone (704)875-9092

Workorder Name: AP-2 1ST SEMIANNUAL COMPLIANCE
 Subcontract to: Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

Requested Analysis: **WO#: 30356789**
 PM: JAC Due Date: 04/23/20
 CLIENT: PACE_26_ATGA

Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	SONH	Received	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	HGWA-1	3/25/2020 15:56	2630472001	Water	1	X						
2	HGWA-3	3/25/2020 15:17	2630472002	Water	1	X						
3	HGWA-2	3/25/2020 16:32	2630472003	Water	1	X						
4	HGWA-6	3/25/2020 17:15	2630472004	Water	1	X						
5	HGWA-5	3/26/2020 09:20	2630472005	Water	1	X						
6	HGWA-4	3/26/2020 12:55	2630472006	Water	1	X						
7	HGWA-15	3/26/2020 14:45	2630472007	Water	1	X						
8	MWA-1	3/27/2020 16:10	2630472008	Water	1	X						
9	HGWC-14	3/30/2020 09:55	2630472009	Water	2	X						
10	FD-02	3/30/2020 00:00	2630472010	Water	2	X						
11	HGWC-16	3/30/2020 11:25	2630472011	Water	2	X						
12	FB-02	3/30/2020 17:35	2630472012	Water	2	X						

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

Cooler Temperature on Receipt: AA°C Custody Seal: Y or N Received on Ice: Y or N Samples Intact: Y or N

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

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace CA

Project # 30356789

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1657 9507 1789

Label <u>OK</u>
LIMS Login <u>OK</u>

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

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

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and initials of person examining contents: <u>OK 3-30-20</u>
	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. <u>PT102</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>OK</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>OK</u> Date: <u>3-30-20</u>

Client Notification/ Resolution:

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

Comments/ Resolution: _____

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

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

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

WO#: 30356789

Pittsburgh Lab Sample Condition Upon Receipt

PM: JAC

Due Date: 04/17/20

CLIENT: PACE_26_ATGA



Client Name: Pace GA

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1657 9507 2167

Label	<u>AK</u>
LIMS Login	<u>AK</u>

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

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

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents: <u>DIC 3-31-20</u>
				<u>10DZ191</u>	
Chain of Custody Present:				1.	
Chain of Custody Filled Out:				2.	
Chain of Custody Relinquished:				3.	
Sampler Name & Signature on COC:				4.	
Sample Labels match COC:				5.	
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.	
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>			7.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>			8.	
Sufficient Volume:	<input checked="" type="checkbox"/>			9.	
Correct Containers Used:	<input checked="" type="checkbox"/>			10.	
-Pace Containers Used:	<input checked="" type="checkbox"/>				
Containers Intact:	<input checked="" type="checkbox"/>			11.	
Orthophosphate field filtered	<input checked="" type="checkbox"/>			12.	
Hex Cr Aqueous sample field filtered	<input checked="" type="checkbox"/>			13.	
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>			14.	
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>			15.	
All containers have been checked for preservation.	<input checked="" type="checkbox"/>			16.	
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					<u>PHCZ</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>			Initial when completed	<u>DIC</u> Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/>			17.	
Trip Blank Present:	<input checked="" type="checkbox"/>			18.	
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>				
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>			Initial when completed:	<u>DIC</u> Date: <u>3-31-20</u>

Client Notification/ Resolution:

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

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in e-reports.

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

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

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace-Indy

Project # #30356789

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1057 9507 2936 / 1057 9507 2974

Label [Signature]
LIMS Login [Signature]

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

Thermometer Used NA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot# <u>1002191</u>			Date and Initials of person examining contents: <u>NA 4/2/2020</u>
	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	/			5.
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used: -Pace Containers Used:	/			10.
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	/			16.
All containers meet method preservation requirements.	/			Initial when completed: <u>NA</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):		/		17.
Trip Blank Present:		/		18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: <u>NA</u> Date: <u>4/2/2020</u>

Client Notification/ Resolution:

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

Comments/ Resolution: _____

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

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

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

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: WAL-NC

Project # #30356789

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1057 9507 2985

Label <u>[Signature]</u>
LIMS Login <u>[Signature]</u>

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

Thermometer Used NA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C
Temp should be above freezing to 6°C

pH paper lot# <u>1052191</u>	Date and initials of person examining contents: <u>NG 4/3/2020</u>
------------------------------	--

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>NA</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered	/		/	12.
Hex Cr Aqueous sample field filtered	/		/	13.
Organic Samples checked for dechlorination:	/		/	14.
Filtered volume received for Dissolved tests	/		/	15.
All containers have been checked for preservation.	/			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>DN12</u>
All containers meet method preservation requirements.	/			Initial when completed: <u>NG</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	/			17.
Trip Blank Present:	/			18.
Trip Blank Custody Seals Present	/			
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: <u>NG</u> Date: <u>4/3/2020</u>

Client Notification/ Resolution:

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

Comments/ Resolution: _____

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

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

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/7/2020
Worklist: 53223
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1891464
MB concentration:	0.444
M/B Counting Uncertainty:	0.113
MB MDC:	0.104
MB Numerical Performance Indicator:	7.66
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	
Count Date:	4/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.509
Target Conc. (pCi/L, g, F):	4.761
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.967
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.343
Numerical Performance Indicator:	1.16
Percent Recovery:	104.32%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS53223
Duplicate Sample I.D.:	LCS53223
Sample Result (pCi/L, g, F):	4.967
Sample Duplicate Result (pCi/L, g, F):	0.343
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	4.483
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.323
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.012
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	9.51%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

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

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:</p> <p>M/S/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):</p> <p>Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:</p>

WAMY 18/20

Cue 4/8/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/7/2020
Worklist: 53223
Matrix: DW

Method Blank Assessment	
MB Sample ID	1891464
MB concentration:	0.444
M/B Counting Uncertainty:	0.113
MB MDC:	0.104
MB Numerical Performance Indicator:	7.66
MB Status vs Numerical Indicator:	N/A
MB Status vs MDC:	See Comment*

Laboratory Control Sample Assessment	
LCSID (Y or N)?	N
LCS53223	LCS53223
Count Date:	4/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.505
Target Conc. (pCi/L, g, F):	4.761
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.967
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.343
Numerical Performance Indicator:	1.16
Percent Recovery:	104.32%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2630417003
Duplicate Sample I.D.:	2630417003DUP
Sample Result (pCi/L, g, F):	0.696
Sample Result Counting Uncertainty (pCi/L, g, F):	0.140
Sample Duplicate Result (pCi/L, g, F):	0.776
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.142
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-0.786
Duplicate RPD:	10.88%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

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

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

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

WAM 4/8/20

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Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53275
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1893284
MB concentration:	0.237
MB Counting Uncertainty:	0.211
MB MDC:	0.384
MB Numerical Performance Indicator:	2.20
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCSD53275	LCSD53275
Count Date:		4/9/2020	
Spike I.D.:		19-033	
Decay Corrected Spike Concentration (pCi/mL):		24.049	
Volume Used (mL):		0.10	
Aliquot Volume (L, g, F):		0.516	
Target Conc. (pCi/L, g, F):		4.665	
Uncertainty (Calculated):		0.056	
Result (pCi/L, g, F):		4.878	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.791	
Numerical Performance Indicator:		0.53	
Percent Recovery:		104.56%	
Status vs Numerical Indicator:		N/A	
Status vs Recovery:		Pass	
Upper % Recovery Limits:		125%	
Lower % Recovery Limits:		75%	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92471690009	92471690009
Duplicate Sample I.D.:	92471690009DUP	92471690009DUP
Sample Result (pCi/L, g, F):	5.860	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.912	
Sample Duplicate Result (pCi/L, g, F):	5.701	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.866	
Are sample and/or duplicate results below RL?	See Below #	
Duplicate Numerical Performance Indicator:	0.248	
Duplicate RPD:	2.76%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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

Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D.</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</p> <p>MS Aliquot (L, g, F):</p> <p>MSD Aliquot (L, g, F):</p> <p>MS Target Conc. (pCi/L, g, F):</p> <p>MSD Target Conc. (pCi/L, g, F):</p> <p>MS Spike Uncertainty (calculated):</p> <p>MSD Spike Uncertainty (calculated):</p> <p>Sample Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):</p> <p>MS Numerical Performance Indicator:</p> <p>MSD Numerical Performance Indicator:</p> <p>MS Percent Recovery:</p> <p>MSD Percent Recovery:</p> <p>MS Status vs Numerical Indicator:</p> <p>MSD Status vs Numerical Indicator:</p> <p>MS Status vs Recovery:</p> <p>MSD Status vs Recovery:</p> <p>MS/MSD Upper % Recovery Limits:</p> <p>MS/MSD Lower % Recovery Limits:</p>		

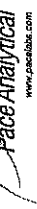
Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D. Sample MS I.D. Sample MSD I.D.</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):</p> <p>Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the Percent Recoveries) MS/MSD Duplicate RPD:</p> <p>MS/MSD Duplicate Status vs Numerical Indicator:</p> <p>MS/MSD Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>

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TAR 53275_W
Total Alpha Radium (R104-3 11Feb2019).xls

Signature

Quality Control Sample Performance Assessment



Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53275
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1893284
MB concentration:	0.237
M/B Counting Uncertainty:	0.211
MB MDC:	0.384
MB Numerical Performance Indicator:	2.20
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS53275	YCS53275
Count Date:	4/9/2020	4/9/2020
Spike ID:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049	24.049
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.516	0.509
Target Conc. (pCi/L, g, F):	4.665	4.723
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.878	4.715
LCSD Counting Uncertainty (pCi/L, g, F):	0.791	0.783
Numerical Performance Indicator:	0.53	-0.02
Percent Recovery:	104.58%	99.84%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:	Sample I.D.
Duplicate Sample I.D.:	Sample MS I.D.
Sample Result (pCi/L, g, F):	Sample MSD I.D.
Sample Duplicate Result (pCi/L, g, F):	Sample Matrix Spike Result:
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:	MS/MSD Duplicate Status vs RPD:
% RPD Limit:	% RPD Limit:

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

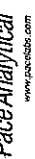
Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

Handwritten signature and date: *Car 4/9/20*

Quality Control Sample Performance Assessment



Analyst. Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53277
Matrix: DW

Method Blank Assessment	
MB Sample ID	1893294
MB concentration:	0.095
MB Counting Uncertainty:	0.153
MB MDC:	0.334
MB Numerical Performance Indicator:	1.22
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS (Y or N)?	N
LCS53277	LCS53277
Count Date:	4/9/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.523
Target Conc. (pCi/L, g, F):	4.599
Uncertainty (Calculated):	0.055
Result (pCi/L, g, F):	4.126
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.715
Numerical Performance Indicator:	-1.29
Percent Recovery:	89.70%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	2630471009
Duplicate Sample I.D.:	2630471009DUP
Sample Result (pCi/L, g, F):	0.669
Sample Result Counting Uncertainty (pCi/L, g, F):	0.341
Sample Duplicate Result (pCi/L, g, F):	0.303
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.268
Are sample and/or duplicate results below RL?	See Below##
Duplicate Numerical Performance Indicator:	1.654
Duplicate RPD:	15.28%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	Sample I.D.:
Sample MS I.D.:	Sample MS I.D.:
Sample MSD I.D.:	Sample MSD I.D.:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
Duplicate Numerical Performance Indicator:	Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:	MS/MSD Duplicate Status vs Numerical Indicator:
% RPD Limit:	MS/MSD Duplicate Status vs RPD:
% RPD Limit:	% RPD Limit:

***Batch must be reprocessed due to unacceptable precision. N/A 4/11/20

4/11/20

KUB
4/9/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/8/2020
Worklist: 53277
Matrix: DW

Method Blank Assessment	
MB Sample ID	1893294
MB concentration:	0.095
M/B Counting Uncertainty:	0.153
MB MDC:	0.334
MB Numerical Performance Indicator:	1.22
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
Count Date:		4/9/2020	LCS/D53277
Spike I.D.:		19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):		24.049	24.049
Volume Used (mL):		0.10	0.10
Aliquot Volume (L, g, F):		0.509	0.509
Target Conc. (pCi/L, g, F):		4.599	4.729
Uncertainty (Calculated):		0.055	0.057
Result (pCi/L, g, F):		4.126	4.884
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.715	0.752
Numerical Performance Indicator:		-1.29	0.40
Percent Recovery:		89.70%	103.29%
Status vs Numerical Indicator:		N/A	N/A
Status vs Recovery:		Pass	Pass
Upper % Recovery Limits:		125%	125%
Lower % Recovery Limits:		75%	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS53277
Duplicate Sample I.D.:	LCS/D53277
Sample Result (pCi/L, g, F):	4.126
Sample Duplicate Result (pCi/L, g, F):	0.715
Sample Result Counting Uncertainty (pCi/L, g, F):	4.884
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.752
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.433
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	14.06%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

LAB
4-9-2020

AM 4/9/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/9/2020
Worklist: 53324
Matrix: DW

Method Blank Assessment	
MB Sample ID	1894734
MB concentration:	0.103
M/R Counting Uncertainty:	0.097
MB MDC:	0.172
MB Numerical Performance Indicator:	2.07
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	Y
Count Date:	4/10/2020	LCS53324	4/10/2020
Spike I.D.:	19-033		19-033
Decay Corrected Spike Concentration (pCi/mL):	24.049		24.049
Volume Used (mL):	0.10		0.10
Aliquot Volume (L, g, F):	0.506		0.509
Target Conc. (pCi/L, g, F):	4.752		4.723
Uncertainty (Calculated):	0.057		0.057
Result (pCi/L, g, F):	5.519		4.383
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.820		0.711
Numerical Performance Indicator:	1.83		-0.93
Percent Recovery:	116.14%		92.81%
Status vs Numerical Indicator:	N/A		N/A
Status vs Recovery:	Pass		Pass
Upper % Recovery Limits:	125%		125%
Lower % Recovery Limits:	75%		75%

Duplicate Sample Assessment	
Sample I.D.:	LCS53324
Duplicate Sample I.D.:	LCS53324
Sample Result (pCi/L, g, F):	5.519
Sample Duplicate Result (pCi/L, g, F):	0.820
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	4.383
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	2.051
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	22.34%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

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

Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

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

LAL 4/10/20

K.B
4-10-2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 4/9/2020
Worklist: 53324
Matrix: DW

Method Blank Assessment	
MB Sample ID	1894734
MB Concentration:	0.103
M/B Counting Uncertainty:	0.097
MB MDC:	0.172
MB Numerical Performance Indicator:	2.07
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		
LCS#	Y or N?	N
LCS53324		LCS53324
Count Date:	4/10/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.049	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	4.752	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	5.519	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.820	
Numerical Performance Indicator:	1.83	
Percent Recovery:	116.14%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	
Sample I.D.:	2630472015
Duplicate Sample I.D.:	2630472015DUP
Sample Result (pCi/L, g, F):	0.462
Sample Result Counting Uncertainty (pCi/L, g, F):	0.290
Sample Duplicate Result (pCi/L, g, F):	0.345
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	0.594
Duplicate RPD:	29.15%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

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

Comments:

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

N/A 4/10/20

KLB
4-10-2020

UAM4/10/20

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

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/7/2020
Worklist: 53226
Matrix: WT



Method Blank Assessment	
MB Sample ID	1891487
MB concentration:	0.544
M/B 2 Sigma CSU:	0.340
MB MDC:	0.632
MB Numerical Performance Indicator:	3.14
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD53226	Y
Count Date:	4/16/2020	LCSD53226
Spike I.D.:	19-057	4/16/2020
Decay Corrected Spike Concentration (pCi/mL):	34.469	19-057
Volume Used (mL):	0.10	34.469
Aliquot Volume (L, g, F):	0.804	0.10
Target Conc. (pCi/L, g, F):	4.276	0.804
Uncertainty (Calculated):	0.309	4.276
Result (pCi/L, g, F):	3.287	0.309
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	2.644	3.287
Numerical Performance Indicator:	0.706	2.644
Percent Recovery:	-4.15	0.706
Status vs Numerical Indicator:	61.83%	-4.15
Status vs Recovery:	N/A	61.83%
Upper % Recovery Limits:	Pass	N/A
Lower % Recovery Limits:	135%	Pass
	60%	135%
		60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Sample I.D.:	LCSD53226
Duplicate Sample I.D.:	LCSD53226
Sample Result (pCi/L, g, F):	2.644
Sample Duplicate Result (pCi/L, g, F):	0.706
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	3.287
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.811
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.171
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	21.37%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

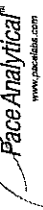
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

Handwritten signature and date: VAL 4-17-20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/9/2020
Worklist: 53276
Matrix: WT

Method Blank Assessment	
MB Sample ID	1893286
MB concentration:	0.771
M/B 2 Sigma CSU:	0.384
MB MDC:	0.663
MB Numerical Performance Indicator:	3.94
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS53276	LCS53276
Count Date:	4/20/2020	4/20/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.425	34.424
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.802	0.807
Target Conc. (pCi/L, g, F):	4.291	4.286
Uncertainty (Calculated):	0.309	0.307
Result (pCi/L, g, F):	5.271	4.166
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.142	1.024
Numerical Performance Indicator:	1.62	-0.18
Percent Recovery:	122.84%	97.66%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	
Duplicate Sample I.D.:	
Sample Result (pCi/L, g, F):	
Sample Result 2 Sigma CSU (pCi/L, g, F):	
Sample Duplicate Result (pCi/L, g, F):	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	
Are sample and/or duplicate results below RL?	
Duplicate Numerical Performance Indicator:	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	
Duplicate Status vs Numerical Indicator:	
Duplicate Status vs RPD:	
% RPD Limit:	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

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

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

Handwritten signature and date: 4/21/2020

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 4/9/2020
Worklist: 53278
Matrix: WT



Method Blank Assessment	
MB Sample ID	1893295
MB concentration:	0.258
MB 2 Sigma CSU:	0.334
MB MDC:	0.711
MB Numerical Performance Indicator:	1.51
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS53278	Y
Count Date:	4/21/2020	LCS53278
Spike I.D.:	19-057	4/21/2020
Decay Corrected Spike Concentration (pCi/mL):	34.414	19-057
Volume Used (mL):	0.10	34.414
Aliquot Volume (L, g, F):	0.803	0.10
Target Conc. (pCi/L, g, F):	4.284	0.809
Uncertainty (Calculated):	0.308	4.255
Result (pCi/L, g, F):	3.658	0.306
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.896	3.387
Numerical Performance Indicator:	-1.30	-1.88
Percent Recovery:	85.36%	79.61%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	Pass	Pass
Lower % Recovery Limits:	135%	135%
	60%	60%

Duplicate Sample Assessment	
Sample I.D.:	LCS53278
Duplicate Sample I.D.:	LCS53278
Sample Result (pCi/L, g, F):	3.658
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.896
Sample Duplicate Result (pCi/L, g, F):	3.387
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.852
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.429
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.99%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	35%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result: Sample Result 2 Sigma CSU (pCi/L, g, F): Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

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

Comments:

Handwritten signature and date: VAL 4/22/20

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-228
Analyst: VAL
Date: 4/3/2020
Worklist: 53205
Matrix: WT

Method Blank Assessment	
MB Sample ID	1890903
MB concentration:	0.720
MB 2 Sigma CSU:	0.398
MB MDC:	0.719
MB Numerical Performance Indicator:	3.54
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD53205	LCSD53205
Count Date:	4/15/2020	4/15/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.481	34.481
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.810
Target Conc. (pCi/L, g, F):	4.303	4.258
Uncertainty (Calculated):	0.310	0.307
Result (pCi/L, g, F):	3.571	3.944
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.873	0.923
Numerical Performance Indicator:	-1.55	-0.63
Percent Recovery:	83.00%	92.64%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD53205
Duplicate Sample I.D.:	LCSD53205
Sample Result (pCi/L, g, F):	3.571
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.873
Sample Duplicate Result (pCi/L, g, F):	3.944
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.923
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.575
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	10.98%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

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

Handwritten signature/initials

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result: Sample Result 2 Sigma CSU (pCi/L, g, F): Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator:		
MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-228
Analyst: VAL
Date: 4/13/2020
Worklist: 53325
Matrix: WT

Method Blank Assessment	
MB Sample ID	1894737
MB concentration:	0.423
MB 2 Sigma CSU:	0.298
MB MDC:	0.570
MB Numerical Performance Indicator:	2.78
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	Y
Count Date:	4/22/2020	LCSD53325	4/22/2020
Spike I.D.:	19-057		19-057
Decay Corrected Spike Concentration (pCi/mL):	34.403		34.403
Volume Used (mL):	0.10		0.10
Aliquot Volume (L, g, F):	0.816		0.816
Target Conc. (pCi/L, g, F):	4.213		4.213
Uncertainty (Calculated):	0.304		0.303
Result (pCi/L, g, F):	3.669		3.033
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	0.896		0.760
Numerical Performance Indicator:	-1.13		-2.83
Percent Recovery:	87.03%		71.99%
Status vs Numerical Indicator:	N/A		N/A
Status vs Recovery:	Pass		Pass
Upper % Recovery Limits:	135%		135%
Lower % Recovery Limits:	60%		60%

Duplicate Sample Assessment	
Sample I.D.:	LCSD53325
Duplicate Sample I.D.:	LCSD53325
Sample Result (pCi/L, g, F):	3.669
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.896
Sample Duplicate Result (pCi/L, g, F):	3.033
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.760
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	1.061
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	18.92%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

Comments:

Handwritten notes:
4/23-2020
4-23-2020

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date:</p> <p>Sample I.D.</p> <p>Sample MS I.D.</p> <p>Sample MSD I.D.</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</p> <p>MS Aliquot (L, g, F):</p> <p>MS Target Conc. (pCi/L, g, F):</p> <p>MSD Aliquot (L, g, F):</p> <p>MSD Target Conc. (pCi/L, g, F):</p> <p>MS Spike Uncertainty (calculated):</p> <p>MSD Spike Uncertainty (calculated):</p> <p>Sample Result:</p> <p>Sample Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Matrix Spike Result:</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>MS Numerical Performance Indicator:</p> <p>MS Numerical Performance Indicator:</p> <p>MS Percent Recovery:</p> <p>MSD Percent Recovery:</p> <p>MS Status vs Numerical Indicator:</p> <p>MSD Status vs Numerical Indicator:</p> <p>MS Status vs Recovery:</p> <p>MSD Status vs Recovery:</p> <p>MS/MSD Upper % Recovery Limits:</p> <p>MS/MSD Lower % Recovery Limits:</p>		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D.</p> <p>Sample MS I.D.</p> <p>Sample MSD I.D.</p> <p>Sample Matrix Spike Result:</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the Percent Recoveries) MS/MSD Duplicate RPD:</p> <p>MS/MSD Duplicate Status vs Numerical Indicator:</p> <p>MS/MSD Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-228
Analyst: VAL
Date: 4/3/2020
Worklist: 53205
Matrix: WT

Method Blank Assessment	
MB Sample ID	1890903
MB concentration:	0.720
MB 2 Sigma CSU:	0.398
MB MDC:	0.719
MB Numerical Performance Indicator:	3.54
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS53205	Y
Count Date:	4/15/2020	LCSD53205
Spike I.D.:	19-057	4/15/2020
Decay Corrected Spike Concentration (pCi/mL):	34.481	19-057
Volume Used (mL):	0.10	34.481
Aliquot Volume (L, g, F):	0.810	0.10
Target Conc. (pCi/L, g, F):	4.303	0.810
Uncertainty (Calculated):	0.310	4.258
Result (pCi/L, g, F):	3.571	0.307
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.873	3.944
Numerical Performance Indicator:	-1.55	0.923
Percent Recovery:	83.00%	92.64%
Status vs Numerical Indicator:	N/A	N/A
Upper % Recovery Limits:	135%	Pass
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS53205
Duplicate Sample I.D.:	LCSD53205
Sample Result (pCi/L, g, F):	3.571
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.873
Sample Duplicate Result (pCi/L, g, F):	3.944
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.923
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.575
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	10.98%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

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

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

Handwritten signature/initials

July 14, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 18, 2020 and June 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 NON ROUTINE RADs
Pace Project No.: 92482645

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
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482645001	MW-21D	Water	06/17/20 09:30	06/18/20 10:37
92482645002	MW-33	Water	06/17/20 16:34	06/18/20 10:37
92482645003	MW-35	Water	06/18/20 11:52	06/19/20 13:10
92482645004	FB-02	Water	06/18/20 17:50	06/19/20 13:10
92482645005	MW-34D	Water	06/18/20 18:05	06/19/20 13:10
92482645006	MW-36D	Water	06/18/20 10:05	06/19/20 13:10
92482645007	MW-37D	Water	06/18/20 13:15	06/19/20 13:10
92482645008	MW-37D, FILTERED	Water	06/18/20 13:30	06/19/20 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92482645001	MW-21D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645002	MW-33	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645003	MW-35	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645004	FB-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645005	MW-34D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645006	MW-36D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645007	MW-37D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92482645008	MW-37D, FILTERED	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE RADS
 Pace Project No.: 92482645

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482645001	MW-21D					
EPA 9315	Radium-226	0.157 ± 0.303 (0.697) C:91% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	0.534 ± 0.534 (1.11) C:57% T:81%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	0.691 ± 0.837 (1.81)	pCi/L		07/09/20 09:57	
92482645002	MW-33					
EPA 9315	Radium-226	0.881 ± 0.385 (0.425) C:96% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	0.544 ± 0.590 (1.23) C:58% T:74%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.43 ± 0.975 (1.66)	pCi/L		07/09/20 09:57	
92482645003	MW-35					
EPA 9315	Radium-226	0.386 ± 0.283 (0.478) C:96% T:NA	pCi/L		07/08/20 08:42	
EPA 9320	Radium-228	1.63 ± 0.621 (0.957) C:69% T:75%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	2.02 ± 0.904 (1.44)	pCi/L		07/09/20 09:57	
92482645004	FB-02					
EPA 9315	Radium-226	0.221 ± 0.237 (0.462) C:89% T:NA	pCi/L		07/08/20 07:10	
EPA 9320	Radium-228	0.250 ± 0.450 (0.984) C:65% T:76%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	0.471 ± 0.687 (1.45)	pCi/L		07/09/20 09:57	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482645005	MW-34D					
EPA 9315	Radium-226	0.401 ± 0.261 (0.367) C:98% T:NA	pCi/L		07/08/20 07:11	
EPA 9320	Radium-228	0.963 ± 0.538 (0.984) C:65% T:78%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.36 ± 0.799 (1.35)	pCi/L		07/09/20 09:57	
92482645006	MW-36D					
EPA 9315	Radium-226	0.177 ± 0.258 (0.565) C:93% T:NA	pCi/L		07/08/20 07:12	
EPA 9320	Radium-228	1.67 ± 0.647 (1.02) C:64% T:81%	pCi/L		07/06/20 16:02	
Total Radium Calculation	Total Radium	1.85 ± 0.905 (1.59)	pCi/L		07/09/20 09:57	
92482645007	MW-37D					
EPA 9315	Radium-226	0.709 ± 0.350 (0.425) C:84% T:NA	pCi/L		07/08/20 07:13	
EPA 9320	Radium-228	1.08 ± 0.548 (0.962) C:63% T:79%	pCi/L		07/06/20 16:03	
Total Radium Calculation	Total Radium	1.79 ± 0.898 (1.39)	pCi/L		07/09/20 09:57	
92482645008	MW-37D, FILTERED					
EPA 9315	Radium-226	0.246 ± 0.244 (0.467) C:90% T:NA	pCi/L		07/08/20 07:12	
EPA 9320	Radium-228	0.437 ± 0.448 (0.929) C:64% T:79%	pCi/L		07/06/20 16:03	
Total Radium Calculation	Total Radium	0.683 ± 0.692 (1.40)	pCi/L		07/09/20 09:57	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-21D **Lab ID: 92482645001** Collected: 06/17/20 09:30 Received: 06/18/20 10:37 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.157 ± 0.303 (0.697) C:91% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.534 ± 0.534 (1.11) C:57% T:81%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.691 ± 0.837 (1.81)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-33 **Lab ID: 92482645002** Collected: 06/17/20 16:34 Received: 06/18/20 10:37 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.881 ± 0.385 (0.425) C:96% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.544 ± 0.590 (1.23) C:58% T:74%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.43 ± 0.975 (1.66)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-35 **Lab ID: 92482645003** Collected: 06/18/20 11:52 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.386 ± 0.283 (0.478) C:96% T:NA	pCi/L	07/08/20 08:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.63 ± 0.621 (0.957) C:69% T:75%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.02 ± 0.904 (1.44)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: FB-02 **Lab ID: 92482645004** Collected: 06/18/20 17:50 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.221 ± 0.237 (0.462) C:89% T:NA	pCi/L	07/08/20 07:10	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.250 ± 0.450 (0.984) C:65% T:76%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.471 ± 0.687 (1.45)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-34D **Lab ID: 92482645005** Collected: 06/18/20 18:05 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.401 ± 0.261 (0.367) C:98% T:NA	pCi/L	07/08/20 07:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.963 ± 0.538 (0.984) C:65% T:78%	pCi/L	07/06/20 16:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.36 ± 0.799 (1.35)	pCi/L	07/09/20 09:57	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-36D **Lab ID: 92482645006** Collected: 06/18/20 10:05 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.177 ± 0.258 (0.565) C:93% T:NA	pCi/L	07/08/20 07:12	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.67 ± 0.647 (1.02) C:64% T:81%	pCi/L	07/06/20 16:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.85 ± 0.905 (1.59)	pCi/L	07/09/20 09:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-37D **Lab ID: 92482645007** Collected: 06/18/20 13:15 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.709 ± 0.350 (0.425) C:84% T:NA	pCi/L	07/08/20 07:13	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.08 ± 0.548 (0.962) C:63% T:79%	pCi/L	07/06/20 16:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.79 ± 0.898 (1.39)	pCi/L	07/09/20 09:57	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

Sample: MW-37D, FILTERED **Lab ID: 92482645008** Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.246 ± 0.244 (0.467) C:90% T:NA	pCi/L	07/08/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.437 ± 0.448 (0.929) C:64% T:79%	pCi/L	07/06/20 16:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.683 ± 0.692 (1.40)	pCi/L	07/09/20 09:57	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

QC Batch: 403006

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

METHOD BLANK: 1950655

Matrix: Water

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0758 ± 0.123 (0.256) C:97% T:NA	pCi/L	07/07/20 19:54	

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.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-2 NON ROUTINE RADS

Pace Project No.: 92482645

QC Batch: 402596

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

METHOD BLANK: 1948602

Matrix: Water

Associated Lab Samples: 92482645001, 92482645002, 92482645003, 92482645004, 92482645005, 92482645006, 92482645007, 92482645008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.856 ± 0.506 (0.940) C:63% T:80%	pCi/L	07/06/20 16:00	

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

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QUALIFIERS

Project: HAMMOND AP-2 NON ROUTINE RADS
Pace Project No.: 92482645

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE RAD5
Pace Project No.: 92482645

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482645001	MW-21D	EPA 9315	403006		
92482645002	MW-33	EPA 9315	403006		
92482645003	MW-35	EPA 9315	403006		
92482645004	FB-02	EPA 9315	403006		
92482645005	MW-34D	EPA 9315	403006		
92482645006	MW-36D	EPA 9315	403006		
92482645007	MW-37D	EPA 9315	403006		
92482645008	MW-37D, FILTERED	EPA 9315	403006		
92482645001	MW-21D	EPA 9320	402596		
92482645002	MW-33	EPA 9320	402596		
92482645003	MW-35	EPA 9320	402596		
92482645004	FB-02	EPA 9320	402596		
92482645005	MW-34D	EPA 9320	402596		
92482645006	MW-36D	EPA 9320	402596		
92482645007	MW-37D	EPA 9320	402596		
92482645008	MW-37D, FILTERED	EPA 9320	402596		
92482645001	MW-21D	Total Radium Calculation	404343		
92482645002	MW-33	Total Radium Calculation	404343		
92482645003	MW-35	Total Radium Calculation	404343		
92482645004	FB-02	Total Radium Calculation	404343		
92482645005	MW-34D	Total Radium Calculation	404343		
92482645006	MW-36D	Total Radium Calculation	404343		
92482645007	MW-37D	Total Radium Calculation	404343		
92482645008	MW-37D, FILTERED	Total Radium Calculation	404343		

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

W0# : 92482645

PM: KLH1 Due Date: 07/10/20
 CLIENT : GA-GA Power

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	GA Power	Report To	SCS Contacts	Attention	Southern Co.
Address	Atlanta, GA	Copy To	Geosynthetic Contacts	Company Name	
Address		Purchase Order No.		Address	
Email To	SCS Contacts	Project Name	Plant Hammond AP-2 Non-Routine	Rate Quote	
Phone	Fax	Project Number	GW6581B	Reference	
Requested Due Date/TAT:	5 Day			Project Manager	Kevin Herring
				Pace Profile #	
REGULATORY AGENCY			Requested Analysis Filtered (Y/N)		
NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/>			Chloride Fluoride Sulfate <input type="checkbox"/>		
UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>			TDS <input type="checkbox"/>		
Site Location <input type="checkbox"/> STATE: GA <input type="checkbox"/>			Metals* <input type="checkbox"/>		
			RAD 226/228 <input type="checkbox"/>		
			Alkalinity Bicarbonate <input type="checkbox"/>		
			Sulfide <input type="checkbox"/>		
			Residual Chlorine (Y/N) <input type="checkbox"/>		
			pH <input type="checkbox"/>		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH	Pace Project No./ Lab I.D.
					DATE	TIME			H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol					
1	MW-21B	WT G	WT G	G	6/17/20	10:34	21	3											
2	MW-33	WT G	WT G	G	6/17/20	10:34	21	3											
3	MW-34D	WT G	WT G	G	6/17/20	10:34	21	3											
4	MW-35	WT G	WT G	G	6/17/20	10:34	21	3											
5	MW-36B	WT G	WT G	G	6/17/20	10:34	21	3											
6	MW-37D	WT G	WT G	G	6/17/20	10:34	21	3											
7	FB-02	WT G	WT G	G	6/17/20	10:34	21	3											
8																			
9																			
10																			
11																			
12																			

ADDITIONAL COMMENTS

Please note dry wells strike through any wells not sampled and note when the last sample for the event has been taken.

AP-2 Detected App. IV Metals-Ax, Ba, Be, B, Cd, Ca, Cr, Co, Fe, Pb, Li, Mg, Mn, Mo, K, Se, Na, Ti

RELINQUISHED BY / AFFILIATION: Chad Russo, 6/17/20, 1845, Mobile Analytics Geosynthetic

ACCEPTED BY / AFFILIATION: K. Williams/Pace, 6/18/20, 10:37, 1845, Mobile Analytics Geosynthetic

SAMPLER NAME AND SIGNATURE: Chad Russo, 6/17/20

PRINT Name of SAMPLER: Chad Russo

SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YYYY): 6/17/20

Temp in °C: 32.2

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): N

Samples Intact (Y/N): Y

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev07, 15-Feb-2007

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 7/7/2020
Worklist: 54859
Matrix: DW

Method Blank Assessment	
MB Sample ID	1950655
MB Concentration:	0.076
MB Counting Uncertainty:	0.122
MB MDC:	0.256
MB Numerical Performance Indicator:	1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS54859	Y
Count Date:	7/8/2020	7/8/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.046	24.046
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.503	0.501
Target Conc. (pCi/L, g, F):	4.784	4.804
Uncertainty (Calculated):	0.057	0.058
Result (pCi/L, g, F):	4.691	3.943
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.717	0.694
Numerical Performance Indicator:	-0.25	-2.42
Percent Recovery:	98.05%	82.08%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	LCS54859	Y
Sample I.D.:	LCS54859	7/8/2020
Duplicate Sample I.D.:	LCS54859	7/8/2020
Sample Result (pCi/L, g, F):	4.691	4.804
Sample Duplicate Result (pCi/L, g, F):	0.717	0.501
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	3.943	0.058
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.694	0.694
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.468	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	17.74%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

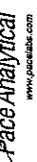
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

57880

[Handwritten Signature]

Quality Control Sample Performance Assessment



Test: Ra-228
Analyst: LAL
Date: 7/7/2020
Worklist: 54859
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):</p> <p>Sample Result: Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>		

Method Blank Assessment
<p>MB Sample ID: 1950655 MB concentration: 0.076 MB Counting Uncertainty: 0.122 MB MDC: 0.256 MB Numerical Performance Indicator: 1.21 MB Status vs Numerical Indicator: N/A MB Status vs. MDC: Pass</p>

Laboratory Control Sample Assessment	LCSD (Y or N)?	N/A
Count Date: 7/8/2020	LCS54859	N/A
Spike I.D.: 19-033	LCSD54859	7/8/2020
Decay Corrected Spike Concentration (pCi/mL): 24.046	0.10	24.046
Volume Used (mL): 0.503	0.501	0.501
Aliquot Volume (L, g, F): 4.784	0.000	0.000
Target Conc. (pCi/L, g, F): 0.057	0.000	0.000
Uncertainty (Calculated): 4.691	3.943	3.943
Result (pCi/L, g, F): 0.717	#VAL UE!	#VAL UE!
LCSD Counting Uncertainty (pCi/L, g, F): -0.25	#DIV/0!	#DIV/0!
Numerical Performance Indicator: 98.05%	N/A	N/A
Status vs Numerical Indicator: Pass	Pass	Pass
Upper % Recovery Limits: 125%	125%	125%
Lower % Recovery Limits: 75%	75%	75%

Duplicate Sample Assessment	Duplicate Matrix Spike Assessment
<p>Sample I.D.: 92482796001</p>	Sample I.D.:
Duplicate Sample I.D.: 92482796001DUP	Sample MS I.D.:
Sample Result (pCi/L, g, F): 0.470	Sample MSD I.D.:
Sample Duplicate Result (pCi/L, g, F): 0.287	Sample Matrix Spike Result:
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.046	Sample Matrix Spike Duplicate Result:
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.126	Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Are sample and/or duplicate results below RL? 2.650	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator: 154.40%	Duplicate RPD:
Duplicate RPD: N/A	Duplicate Status vs Numerical Indicator:
Duplicate Status vs Numerical Indicator: Pass	Duplicate Status vs RPD:
Duplicate Status vs RPD: 25%	% RPD Limit:

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

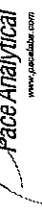
Comments: *Added to SA WOC for 7/8/2020*

Batch must be re-prepped due to unacceptable precision

TAR DW QC
Printed: 7/8/2020 2:31 PM

Total Alpha Radium (R104-3 11Feb2019).xls
DW 7.8.20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 7/1/2020
Worklist: 54819
Matrix: WT

Method Blank Assessment	
MB Sample ID	1948602
MB concentration:	0.856
M/B 2 Sigma CSU:	0.506
MB MDC:	0.940
MB Numerical Performance Indicator:	3.31
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS54819	LCS54819
Count Date:	7/6/2020	7/6/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	33.559	33.559
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.820
Target Conc. (pCi/L, g, F):	4.142	4.093
Uncertainty (Calculated):	0.298	0.295
Result (pCi/L, g, F):	4.306	4.401
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.098	1.097
Numerical Performance Indicator:	0.28	0.53
Percent Recovery:	103.98%	107.53%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS54819
Duplicate Sample I.D.:	LCS54819
Sample Result (pCi/L, g, F):	4.306
Sample Duplicate Result (pCi/L, g, F):	1.098
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	4.401
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.097
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.119
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	3.36%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MS Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

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

Comments:

*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

[Handwritten signature]

July 01, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between June 18, 2020 and June 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Kristen Jurinko
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092
Florida DOH Certification #: E87315
Georgia DW Inorganics Certification #: 812
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381
South Carolina Certification #: 98011001
Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92482649001	MW-21D	Water	06/17/20 09:30	06/18/20 10:37
92482649002	MW-33	Water	06/17/20 16:34	06/18/20 10:37
92482649003	MW-35	Water	06/18/20 11:52	06/19/20 13:10
92482649004	FB-02	Water	06/18/20 17:50	06/19/20 13:10
92482649005	MW-34D	Water	06/18/20 18:05	06/19/20 13:10
92482649006	MW-36D	Water	06/18/20 10:05	06/19/20 13:10
92482649007	MW-37D	Water	06/18/20 13:15	06/19/20 13:10
92482649008	MW-37D, FILTERED	Water	06/18/20 13:30	06/19/20 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92482649001	MW-21D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649002	MW-33	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649003	MW-35	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649004	FB-02	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649005	MW-34D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649006	MW-36D	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649007	MW-37D	EPA 6010D	DRB	6

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92482649008	MW-37D, FILTERED	EPA 6010D	DRB	6
		EPA 6020B	CW1	12
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	LMS1	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649001	MW-21D					
	pH	6.47	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	434	mg/L	10.0	06/23/20 12:37	
EPA 6010D	Iron	22.3	mg/L	0.040	06/22/20 16:02	
EPA 6010D	Magnesium	71.7	mg/L	0.050	06/22/20 16:02	
EPA 6010D	Manganese	1.3	mg/L	0.040	06/22/20 16:02	
EPA 6010D	Potassium	1.1	mg/L	0.20	06/22/20 16:02	
EPA 6010D	Sodium	15.8	mg/L	1.0	06/22/20 16:02	
EPA 6020B	Barium	0.054	mg/L	0.010	06/19/20 20:18	
EPA 6020B	Boron	5.8	mg/L	0.10	06/19/20 20:18	
EPA 6020B	Chromium	0.00057J	mg/L	0.010	06/19/20 20:18	
EPA 6020B	Lithium	0.023J	mg/L	0.030	06/19/20 20:18	
EPA 6020B	Molybdenum	0.019	mg/L	0.010	06/19/20 20:18	
SM 2450C-2011	Total Dissolved Solids	2100	mg/L	10.0	06/19/20 18:08	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	41.2	mg/L	5.0	06/29/20 18:41	
SM 2320B-2011	Alkalinity, Total as CaCO3	41.2	mg/L	5.0	06/29/20 18:41	
EPA 300.0 Rev 2.1 1993	Chloride	223	mg/L	18.0	06/25/20 10:16	
EPA 300.0 Rev 2.1 1993	Sulfate	901	mg/L	18.0	06/25/20 10:16	
92482649002	MW-33					
	pH	4.36	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	561	mg/L	10.0	06/23/20 12:41	
EPA 6010D	Iron	1.2	mg/L	0.040	06/22/20 16:06	
EPA 6010D	Magnesium	55.9	mg/L	0.050	06/22/20 16:06	
EPA 6010D	Manganese	4.5	mg/L	0.040	06/22/20 16:06	
EPA 6010D	Potassium	11.1	mg/L	0.20	06/22/20 16:06	
EPA 6010D	Sodium	10.8	mg/L	1.0	06/22/20 16:06	
EPA 6020B	Arsenic	0.0031J	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Barium	0.024	mg/L	0.010	06/19/20 20:24	
EPA 6020B	Beryllium	0.00099J	mg/L	0.0030	06/19/20 20:24	
EPA 6020B	Boron	10.3	mg/L	1.0	06/23/20 12:44	
EPA 6020B	Cadmium	0.00021J	mg/L	0.0025	06/19/20 20:24	
EPA 6020B	Cobalt	0.053	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	06/19/20 20:24	
EPA 6020B	Lithium	0.00097J	mg/L	0.030	06/19/20 20:24	
EPA 6020B	Selenium	0.014	mg/L	0.010	06/19/20 20:24	
EPA 6020B	Thallium	0.00028J	mg/L	0.0010	06/19/20 20:24	
SM 2450C-2011	Total Dissolved Solids	2540	mg/L	10.0	06/19/20 18:09	
EPA 300.0 Rev 2.1 1993	Chloride	250	mg/L	24.0	06/25/20 10:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.25	mg/L	0.10	06/25/20 06:25	
EPA 300.0 Rev 2.1 1993	Sulfate	1210	mg/L	24.0	06/25/20 10:31	
92482649003	MW-35					
	pH	5.46	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	517	mg/L	10.0	06/23/20 12:46	M6
EPA 6010D	Iron	2.4	mg/L	0.040	06/22/20 17:10	
EPA 6010D	Magnesium	71.5	mg/L	0.050	06/22/20 17:10	M1
EPA 6010D	Manganese	10.6	mg/L	0.040	06/22/20 17:10	M1
EPA 6010D	Potassium	8.3	mg/L	0.20	06/22/20 17:10	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649003	MW-35					
EPA 6010D	Sodium	11.5	mg/L	1.0	06/22/20 17:10	
EPA 6020B	Arsenic	0.0050J	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Barium	0.029	mg/L	0.010	06/23/20 13:50	
EPA 6020B	Beryllium	0.00032J	mg/L	0.0030	06/23/20 13:50	
EPA 6020B	Boron	11.9	mg/L	1.0	06/23/20 16:53	
EPA 6020B	Cadmium	0.00053J	mg/L	0.0025	06/23/20 13:50	
EPA 6020B	Cobalt	0.091	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Lead	0.00016J	mg/L	0.0050	06/23/20 13:50	
EPA 6020B	Lithium	0.0046J	mg/L	0.030	06/23/20 13:50	
EPA 6020B	Selenium	0.014	mg/L	0.010	06/23/20 13:50	
EPA 6020B	Thallium	0.00013J	mg/L	0.0010	06/23/20 13:50	
SM 2450C-2011	Total Dissolved Solids	2310	mg/L	10.0	06/22/20 17:35	
EPA 300.0 Rev 2.1 1993	Chloride	229	mg/L	23.0	06/25/20 10:45	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	06/25/20 06:39	
EPA 300.0 Rev 2.1 1993	Sulfate	1160	mg/L	23.0	06/25/20 10:45	
92482649004	FB-02					
EPA 6010D	Calcium	0.16J	mg/L	1.0	06/22/20 17:26	
EPA 6010D	Magnesium	0.026J	mg/L	0.050	06/22/20 17:26	B
EPA 6020B	Boron	0.041J	mg/L	0.10	06/23/20 13:55	
92482649005	MW-34D					
	pH	7.35	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	584	mg/L	10.0	06/23/20 12:58	
EPA 6010D	Iron	1.8	mg/L	0.040	06/22/20 17:31	
EPA 6010D	Magnesium	59.3	mg/L	0.050	06/22/20 17:31	
EPA 6010D	Manganese	4.7	mg/L	0.040	06/22/20 17:31	
EPA 6010D	Potassium	10.8	mg/L	0.20	06/22/20 17:31	
EPA 6010D	Sodium	16.0	mg/L	1.0	06/22/20 17:31	
EPA 6020B	Arsenic	0.0032J	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Barium	0.044	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	06/23/20 14:22	
EPA 6020B	Boron	9.4	mg/L	0.10	06/23/20 14:22	
EPA 6020B	Chromium	0.0059J	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Cobalt	0.011	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Lead	0.00087J	mg/L	0.0050	06/23/20 14:22	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	06/23/20 14:22	
EPA 6020B	Selenium	0.0025J	mg/L	0.010	06/23/20 14:22	
EPA 6020B	Thallium	0.00015J	mg/L	0.0010	06/23/20 14:22	
SM 2450C-2011	Total Dissolved Solids	2320	mg/L	10.0	06/22/20 17:36	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	96.5	mg/L	5.0	06/30/20 15:52	
SM 2320B-2011	Alkalinity, Total as CaCO3	96.5	mg/L	5.0	06/30/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	259	mg/L	22.0	06/26/20 08:16	
EPA 300.0 Rev 2.1 1993	Fluoride	0.082J	mg/L	0.10	06/25/20 22:36	
EPA 300.0 Rev 2.1 1993	Sulfate	1100	mg/L	22.0	06/26/20 08:16	
92482649006	MW-36D					
	pH	6.45	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	65.2	mg/L	1.0	06/22/20 17:43	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92482649006	MW-36D					
EPA 6010D	Iron	0.58	mg/L	0.040	06/22/20 17:43	
EPA 6010D	Magnesium	7.7	mg/L	0.050	06/22/20 17:43	
EPA 6010D	Manganese	0.055	mg/L	0.040	06/22/20 17:43	
EPA 6010D	Potassium	0.47	mg/L	0.20	06/22/20 17:43	
EPA 6010D	Sodium	7.2	mg/L	1.0	06/22/20 17:43	
EPA 6020B	Arsenic	0.00046J	mg/L	0.0050	06/23/20 14:28	
EPA 6020B	Barium	0.15	mg/L	0.010	06/23/20 14:28	
EPA 6020B	Boron	0.067J	mg/L	0.10	06/23/20 14:28	
EPA 6020B	Chromium	0.00045J	mg/L	0.010	06/23/20 14:28	
EPA 6020B	Lithium	0.0087J	mg/L	0.030	06/23/20 14:28	
SM 2450C-2011	Total Dissolved Solids	237	mg/L	10.0	06/22/20 17:37	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	06/30/20 16:02	
SM 2320B-2011	Alkalinity, Total as CaCO3	164	mg/L	5.0	06/30/20 16:02	
EPA 300.0 Rev 2.1 1993	Chloride	2.3	mg/L	1.0	06/25/20 22:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.053J	mg/L	0.10	06/25/20 22:50	
EPA 300.0 Rev 2.1 1993	Sulfate	50.5	mg/L	1.0	06/25/20 22:50	
92482649007	MW-37D					
	pH	7.78	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	165	mg/L	1.0	06/22/20 17:48	
EPA 6010D	Iron	3.4	mg/L	0.040	06/22/20 17:48	
EPA 6010D	Magnesium	30.5	mg/L	0.050	06/22/20 17:48	
EPA 6010D	Manganese	0.15	mg/L	0.040	06/22/20 17:48	
EPA 6010D	Potassium	2.9	mg/L	0.20	06/22/20 17:48	
EPA 6010D	Sodium	59.6	mg/L	1.0	06/22/20 17:48	
EPA 6020B	Arsenic	0.0021J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Barium	0.19	mg/L	0.010	06/23/20 14:33	
EPA 6020B	Beryllium	0.00012J	mg/L	0.0030	06/23/20 14:33	
EPA 6020B	Boron	0.14	mg/L	0.10	06/23/20 14:33	
EPA 6020B	Chromium	0.0048J	mg/L	0.010	06/23/20 14:33	
EPA 6020B	Cobalt	0.0015J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Lead	0.0017J	mg/L	0.0050	06/23/20 14:33	
EPA 6020B	Lithium	0.038J	mg/L	0.030	06/23/20 14:33	
EPA 6020B	Molybdenum	0.023	mg/L	0.010	06/23/20 14:33	
SM 2450C-2011	Total Dissolved Solids	888	mg/L	10.0	06/22/20 17:37	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	06/30/20 16:22	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	06/30/20 16:22	
EPA 300.0 Rev 2.1 1993	Chloride	151	mg/L	6.0	06/26/20 08:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	06/25/20 23:05	
EPA 300.0 Rev 2.1 1993	Sulfate	286	mg/L	6.0	06/26/20 08:31	
92482649008	MW-37D, FILTERED					
	pH	7.78	Std. Units		06/30/20 17:11	
EPA 6010D	Calcium	168	mg/L	1.0	06/22/20 17:52	
EPA 6010D	Iron	0.087	mg/L	0.040	06/22/20 17:52	
EPA 6010D	Magnesium	30.6	mg/L	0.050	06/22/20 17:52	
EPA 6010D	Manganese	0.12	mg/L	0.040	06/22/20 17:52	
EPA 6010D	Potassium	2.0	mg/L	0.20	06/22/20 17:52	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92482649008	MW-37D, FILTERED					
EPA 6010D	Sodium	60.9	mg/L	1.0	06/22/20 17:52	
EPA 6020B	Arsenic	0.0016J	mg/L	0.0050	06/23/20 14:39	
EPA 6020B	Barium	0.17	mg/L	0.010	06/23/20 14:39	
EPA 6020B	Boron	0.14	mg/L	0.10	06/23/20 14:39	
EPA 6020B	Chromium	0.00040J	mg/L	0.010	06/23/20 14:39	
EPA 6020B	Lead	0.000051J	mg/L	0.0050	06/23/20 14:39	
EPA 6020B	Lithium	0.036J	mg/L	0.030	06/23/20 14:39	
EPA 6020B	Molybdenum	0.022	mg/L	0.010	06/23/20 14:39	
SM 2450C-2011	Total Dissolved Solids	879	mg/L	10.0	06/22/20 17:38	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	06/30/20 16:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	06/30/20 16:32	
EPA 300.0 Rev 2.1 1993	Chloride	160	mg/L	6.0	06/29/20 12:12	
EPA 300.0 Rev 2.1 1993	Fluoride	0.10	mg/L	0.10	06/27/20 15:38	
EPA 300.0 Rev 2.1 1993	Sulfate	292	mg/L	6.0	06/29/20 12:12	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-21D **Lab ID: 92482649001** Collected: 06/17/20 09:30 Received: 06/18/20 10:37 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.47	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	434	mg/L	10.0	1.4	10	06/19/20 14:00	06/23/20 12:37	7440-70-2	
Iron	22.3	mg/L	0.040	0.015	1	06/19/20 14:00	06/22/20 16:02	7439-89-6	
Magnesium	71.7	mg/L	0.050	0.011	1	06/19/20 14:00	06/22/20 16:02	7439-95-4	
Manganese	1.3	mg/L	0.040	0.0061	1	06/19/20 14:00	06/22/20 16:02	7439-96-5	
Potassium	1.1	mg/L	0.20	0.026	1	06/19/20 14:00	06/22/20 16:02	7440-09-7	
Sodium	15.8	mg/L	1.0	0.19	1	06/19/20 14:00	06/22/20 16:02	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	ND	mg/L	0.0050	0.00035	1	06/19/20 12:30	06/19/20 20:18	7440-38-2	
Barium	0.054	mg/L	0.010	0.00049	1	06/19/20 12:30	06/19/20 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/19/20 12:30	06/19/20 20:18	7440-41-7	
Boron	5.8	mg/L	0.10	0.0049	1	06/19/20 12:30	06/19/20 20:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/19/20 12:30	06/19/20 20:18	7440-43-9	
Chromium	0.00057J	mg/L	0.010	0.00039	1	06/19/20 12:30	06/19/20 20:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/19/20 12:30	06/19/20 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/19/20 12:30	06/19/20 20:18	7439-92-1	
Lithium	0.023J	mg/L	0.030	0.00078	1	06/19/20 12:30	06/19/20 20:18	7439-93-2	
Molybdenum	0.019	mg/L	0.010	0.00095	1	06/19/20 12:30	06/19/20 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/19/20 12:30	06/19/20 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/19/20 12:30	06/19/20 20:18	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2100	mg/L	10.0	10.0	1		06/19/20 18:08		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	41.2	mg/L	5.0	5.0	1		06/29/20 18:41		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:41		
Alkalinity, Total as CaCO ₃	41.2	mg/L	5.0	5.0	1		06/29/20 18:41		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:54	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	223	mg/L	18.0	10.8	18		06/25/20 10:16	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/25/20 05:41	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-21D		Lab ID: 92482649001		Collected: 06/17/20 09:30	Received: 06/18/20 10:37	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	901	mg/L	18.0	9.0	18		06/25/20 10:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-33	Lab ID: 92482649002	Collected: 06/17/20 16:34		Received: 06/18/20 10:37		Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.36	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	561	mg/L	10.0	1.4	10	06/19/20 14:00	06/23/20 12:41	7440-70-2	
Iron	1.2	mg/L	0.040	0.015	1	06/19/20 14:00	06/22/20 16:06	7439-89-6	
Magnesium	55.9	mg/L	0.050	0.011	1	06/19/20 14:00	06/22/20 16:06	7439-95-4	
Manganese	4.5	mg/L	0.040	0.0061	1	06/19/20 14:00	06/22/20 16:06	7439-96-5	
Potassium	11.1	mg/L	0.20	0.026	1	06/19/20 14:00	06/22/20 16:06	7440-09-7	
Sodium	10.8	mg/L	1.0	0.19	1	06/19/20 14:00	06/22/20 16:06	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0031J	mg/L	0.0050	0.00035	1	06/19/20 12:30	06/19/20 20:24	7440-38-2	
Barium	0.024	mg/L	0.010	0.00049	1	06/19/20 12:30	06/19/20 20:24	7440-39-3	
Beryllium	0.00099J	mg/L	0.0030	0.000074	1	06/19/20 12:30	06/19/20 20:24	7440-41-7	
Boron	10.3	mg/L	1.0	0.049	10	06/19/20 12:30	06/23/20 12:44	7440-42-8	
Cadmium	0.00021J	mg/L	0.0025	0.00011	1	06/19/20 12:30	06/19/20 20:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/19/20 12:30	06/19/20 20:24	7440-47-3	
Cobalt	0.053	mg/L	0.0050	0.00030	1	06/19/20 12:30	06/19/20 20:24	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	06/19/20 12:30	06/19/20 20:24	7439-92-1	
Lithium	0.00097J	mg/L	0.030	0.00078	1	06/19/20 12:30	06/19/20 20:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/19/20 12:30	06/19/20 20:24	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	06/19/20 12:30	06/19/20 20:24	7782-49-2	
Thallium	0.00028J	mg/L	0.0010	0.000052	1	06/19/20 12:30	06/19/20 20:24	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2540	mg/L	10.0	10.0	1		06/19/20 18:09		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		06/29/20 18:47		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:57	18496-25-8	M1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	250	mg/L	24.0	14.4	24		06/25/20 10:31	16887-00-6	
Fluoride	0.25	mg/L	0.10	0.050	1		06/25/20 06:25	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-33		Lab ID: 92482649002		Collected: 06/17/20 16:34		Received: 06/18/20 10:37		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	1210	mg/L	24.0	12.0	24		06/25/20 10:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-35		Lab ID: 92482649003		Collected: 06/18/20 11:52		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.46	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	517	mg/L	10.0	1.4	10	06/22/20 14:08	06/23/20 12:46	7440-70-2	M6
Iron	2.4	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:10	7439-89-6	
Magnesium	71.5	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:10	7439-95-4	M1
Manganese	10.6	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:10	7439-96-5	M1
Potassium	8.3	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:10	7440-09-7	
Sodium	11.5	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:10	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0050J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 13:50	7440-38-2	
Barium	0.029	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 13:50	7440-39-3	
Beryllium	0.00032J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 13:50	7440-41-7	
Boron	11.9	mg/L	1.0	0.049	10	06/22/20 17:17	06/23/20 16:53	7440-42-8	
Cadmium	0.00053J	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 13:50	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 13:50	7440-47-3	
Cobalt	0.091	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 13:50	7440-48-4	
Lead	0.00016J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 13:50	7439-92-1	
Lithium	0.0046J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 13:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 13:50	7439-98-7	
Selenium	0.014	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 13:50	7782-49-2	
Thallium	0.00013J	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 13:50	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2310	mg/L	10.0	10.0	1		06/22/20 17:35		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		06/30/20 15:33		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:58	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	229	mg/L	23.0	13.8	23		06/25/20 10:45	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		06/25/20 06:39	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-35		Lab ID: 92482649003		Collected: 06/18/20 11:52		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	1160	mg/L	23.0	11.5	23		06/25/20 10:45	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: FB-02		Lab ID: 92482649004		Collected: 06/18/20 17:50		Received: 06/19/20 13:10		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	0.16J	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:26	7440-70-2		
Iron	ND	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:26	7439-89-6		
Magnesium	0.026J	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:26	7439-95-4	B	
Manganese	ND	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:26	7439-96-5		
Potassium	ND	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:26	7440-09-7		
Sodium	ND	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:26	7440-23-5		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Arsenic	ND	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 13:55	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 13:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 13:55	7440-41-7		
Boron	0.041J	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 13:55	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 13:55	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 13:55	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 13:55	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 13:55	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 13:55	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 13:55	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 13:55	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 13:55	7440-28-0		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/22/20 17:35			
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		06/30/20 15:48			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:59	18496-25-8		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		06/25/20 22:21	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		06/25/20 22:21	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		06/25/20 22:21	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-34D		Lab ID: 92482649005		Collected: 06/18/20 18:05		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.35	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	584	mg/L	10.0	1.4	10	06/22/20 14:08	06/23/20 12:58	7440-70-2	
Iron	1.8	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:31	7439-89-6	
Magnesium	59.3	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:31	7439-95-4	
Manganese	4.7	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:31	7439-96-5	
Potassium	10.8	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:31	7440-09-7	
Sodium	16.0	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:31	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0032J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:22	7440-38-2	
Barium	0.044	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:22	7440-39-3	
Beryllium	0.00015J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:22	7440-41-7	
Boron	9.4	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:22	7440-43-9	
Chromium	0.0059J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:22	7440-47-3	
Cobalt	0.011	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:22	7440-48-4	
Lead	0.00087J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:22	7439-92-1	
Lithium	0.0021J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:22	7439-98-7	
Selenium	0.0025J	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:22	7782-49-2	
Thallium	0.00015J	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:22	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	2320	mg/L	10.0	10.0	1		06/22/20 17:36		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	96.5	mg/L	5.0	5.0	1		06/30/20 15:52		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 15:52		
Alkalinity, Total as CaCO ₃	96.5	mg/L	5.0	5.0	1		06/30/20 15:52		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 18:59	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	259	mg/L	22.0	13.2	22		06/26/20 08:16	16887-00-6	
Fluoride	0.082J	mg/L	0.10	0.050	1		06/25/20 22:36	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-34D		Lab ID: 92482649005		Collected: 06/18/20 18:05	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	1100	mg/L	22.0	11.0	22		06/26/20 08:16	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-36D		Lab ID: 92482649006		Collected: 06/18/20 10:05		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.45	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	65.2	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:43	7440-70-2	
Iron	0.58	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:43	7439-89-6	
Magnesium	7.7	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:43	7439-95-4	
Manganese	0.055	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:43	7439-96-5	
Potassium	0.47	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:43	7440-09-7	
Sodium	7.2	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:43	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.00046J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:28	7440-38-2	
Barium	0.15	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:28	7440-41-7	
Boron	0.067J	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:28	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:28	7440-43-9	
Chromium	0.00045J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:28	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:28	7439-92-1	
Lithium	0.0087J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:28	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:28	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:28	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	237	mg/L	10.0	10.0	1		06/22/20 17:37		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	5.0	1		06/30/20 16:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/30/20 16:02		
Alkalinity, Total as CaCO3	164	mg/L	5.0	5.0	1		06/30/20 16:02		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	2.3	mg/L	1.0	0.60	1		06/25/20 22:50	16887-00-6	
Fluoride	0.053J	mg/L	0.10	0.050	1		06/25/20 22:50	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-36D		Lab ID: 92482649006		Collected: 06/18/20 10:05	Received: 06/19/20 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Sulfate	50.5	mg/L	1.0	0.50	1		06/25/20 22:50	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Sample: MW-37D		Lab ID: 92482649007		Collected: 06/18/20 13:15		Received: 06/19/20 13:10		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.78	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	165	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:48	7440-70-2	
Iron	3.4	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:48	7439-89-6	
Magnesium	30.5	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:48	7439-95-4	
Manganese	0.15	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:48	7439-96-5	
Potassium	2.9	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:48	7440-09-7	
Sodium	59.6	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:48	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0021J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:33	7440-38-2	
Barium	0.19	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:33	7440-39-3	
Beryllium	0.00012J	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:33	7440-41-7	
Boron	0.14	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:33	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:33	7440-43-9	
Chromium	0.0048J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:33	7440-47-3	
Cobalt	0.0015J	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:33	7440-48-4	
Lead	0.0017J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:33	7439-92-1	
Lithium	0.038J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:33	7439-93-2	
Molybdenum	0.023	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:33	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:33	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	888	mg/L	10.0	10.0	1		06/22/20 17:37		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		06/30/20 16:22		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:22		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		06/30/20 16:22		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	151	mg/L	6.0	3.6	6		06/26/20 08:31	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		06/25/20 23:05	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-37D **Lab ID: 92482649007** Collected: 06/18/20 13:15 Received: 06/19/20 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Sulfate	286	mg/L	6.0	3.0	6		06/26/20 08:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE
 Pace Project No.: 92482649

Sample: MW-37D, FILTERED **Lab ID: 92482649008** Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.78	Std. Units			1		06/30/20 17:11		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	168	mg/L	1.0	0.14	1	06/22/20 14:08	06/22/20 17:52	7440-70-2	
Iron	0.087	mg/L	0.040	0.015	1	06/22/20 14:08	06/22/20 17:52	7439-89-6	
Magnesium	30.6	mg/L	0.050	0.011	1	06/22/20 14:08	06/22/20 17:52	7439-95-4	
Manganese	0.12	mg/L	0.040	0.0061	1	06/22/20 14:08	06/22/20 17:52	7439-96-5	
Potassium	2.0	mg/L	0.20	0.026	1	06/22/20 14:08	06/22/20 17:52	7440-09-7	
Sodium	60.9	mg/L	1.0	0.19	1	06/22/20 14:08	06/22/20 17:52	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Arsenic	0.0016J	mg/L	0.0050	0.00035	1	06/22/20 17:17	06/23/20 14:39	7440-38-2	
Barium	0.17	mg/L	0.010	0.00049	1	06/22/20 17:17	06/23/20 14:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/22/20 17:17	06/23/20 14:39	7440-41-7	
Boron	0.14	mg/L	0.10	0.0049	1	06/22/20 17:17	06/23/20 14:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/22/20 17:17	06/23/20 14:39	7440-43-9	
Chromium	0.00040J	mg/L	0.010	0.00039	1	06/22/20 17:17	06/23/20 14:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/22/20 17:17	06/23/20 14:39	7440-48-4	
Lead	0.000051J	mg/L	0.0050	0.000046	1	06/22/20 17:17	06/23/20 14:39	7439-92-1	
Lithium	0.036J	mg/L	0.030	0.00078	1	06/22/20 17:17	06/23/20 14:39	7439-93-2	
Molybdenum	0.022	mg/L	0.010	0.00095	1	06/22/20 17:17	06/23/20 14:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/22/20 17:17	06/23/20 14:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/22/20 17:17	06/23/20 14:39	7440-28-0	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	879	mg/L	10.0	10.0	1		06/22/20 17:38		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		06/30/20 16:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		06/30/20 16:32		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		06/30/20 16:32		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		06/24/20 19:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	160	mg/L	6.0	3.6	6		06/29/20 12:12	16887-00-6	
Fluoride	0.10	mg/L	0.10	0.050	1		06/27/20 15:38	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Sample: MW-37D, FILTERED **Lab ID: 92482649008** Collected: 06/18/20 13:30 Received: 06/19/20 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Sulfate	292	mg/L	6.0	3.0	6		06/29/20 12:12	14808-79-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548539 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918225 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/22/20 14:53	
Iron	mg/L	ND	0.040	0.015	06/22/20 14:53	
Magnesium	mg/L	ND	0.050	0.011	06/22/20 14:53	
Manganese	mg/L	ND	0.040	0.0061	06/22/20 14:53	
Potassium	mg/L	ND	0.20	0.026	06/22/20 14:53	
Sodium	mg/L	ND	1.0	0.19	06/22/20 14:53	

LABORATORY CONTROL SAMPLE: 2918226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99J	99	80-120	
Iron	mg/L	1	1.0	102	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	0.99	99	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	1.1	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918227 2918228

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482346005 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	112	1	1	110	114	-256	180	75-125	4	20 M1
Iron	mg/L	0.56	1	1	1.6	1.6	103	108	75-125	3	20
Magnesium	mg/L	10.3	1	1	11.0	11.4	74	117	75-125	4	20 M1
Manganese	mg/L	0.22	1	1	1.2	1.2	96	100	75-125	3	20
Potassium	mg/L	2.7	1	1	3.7	3.8	95	107	75-125	3	20
Sodium	mg/L	10.3	1	1	11.0	11.4	68	109	75-125	4	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548844 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919468 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/22/20 16:52	
Iron	mg/L	ND	0.040	0.015	06/22/20 16:52	
Magnesium	mg/L	0.011J	0.050	0.011	06/22/20 16:52	
Manganese	mg/L	ND	0.040	0.0061	06/22/20 16:52	
Potassium	mg/L	ND	0.20	0.026	06/22/20 16:52	
Sodium	mg/L	ND	1.0	0.19	06/22/20 16:52	

LABORATORY CONTROL SAMPLE: 2919473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.97J	97	80-120	
Iron	mg/L	1	1.0	100	80-120	
Magnesium	mg/L	1	1.0	102	80-120	
Manganese	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.86	86	80-120	
Sodium	mg/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919474 2919475

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result	% Rec	% Rec						
Calcium	mg/L	517	1	1	511	511	-681	-642	75-125	0	20	M6	
Iron	mg/L	2.4	1	1	3.3	3.3	92	93	75-125	0	20		
Magnesium	mg/L	71.5	1	1	71.4	71.6	-16	5	75-125	0	20	M1	
Manganese	mg/L	10.6	1	1	11.3	11.2	67	58	75-125	1	20	M1	
Potassium	mg/L	8.3	1	1	9.2	9.2	89	91	75-125	0	20		
Sodium	mg/L	11.5	1	1	12.3	12.3	79	81	75-125	0	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548509 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918043 Matrix: Water

Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	06/19/20 17:32	
Barium	mg/L	ND	0.010	0.00049	06/19/20 17:32	
Beryllium	mg/L	ND	0.0030	0.000074	06/19/20 17:32	
Boron	mg/L	ND	0.10	0.0049	06/19/20 17:32	
Cadmium	mg/L	ND	0.0025	0.00011	06/19/20 17:32	
Chromium	mg/L	ND	0.010	0.00039	06/19/20 17:32	
Cobalt	mg/L	ND	0.0050	0.00030	06/19/20 17:32	
Lead	mg/L	ND	0.0050	0.000046	06/19/20 17:32	
Lithium	mg/L	ND	0.030	0.00078	06/19/20 17:32	
Molybdenum	mg/L	ND	0.010	0.00095	06/19/20 17:32	
Selenium	mg/L	ND	0.010	0.0013	06/19/20 17:32	
Thallium	mg/L	ND	0.0010	0.000052	06/19/20 17:32	

LABORATORY CONTROL SAMPLE: 2918044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.095	95	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918045 2918046

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92482427001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	ND	0.1	0.1	0.094	0.094	93	93	75-125	0	20	
Barium	mg/L	9.3 ug/L	0.1	0.1	0.10	0.10	95	95	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Boron	mg/L	54.3 ug/L	1	1	1.0	1.0	96	96	75-125	0	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Parameter	Units	2918045		2918046		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482427001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.097	0.098	96	97	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20		
Lithium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.092	97	92	75-125	5	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548895 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919709 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	06/23/20 13:04	
Barium	mg/L	ND	0.010	0.00049	06/23/20 13:04	
Beryllium	mg/L	ND	0.0030	0.000074	06/23/20 13:04	
Boron	mg/L	ND	0.10	0.0049	06/23/20 13:04	
Cadmium	mg/L	ND	0.0025	0.00011	06/23/20 13:04	
Chromium	mg/L	ND	0.010	0.00039	06/23/20 13:04	
Cobalt	mg/L	ND	0.0050	0.00030	06/23/20 13:04	
Lead	mg/L	ND	0.0050	0.000046	06/23/20 13:04	
Lithium	mg/L	ND	0.030	0.00078	06/23/20 13:04	
Molybdenum	mg/L	ND	0.010	0.00095	06/23/20 13:04	
Selenium	mg/L	ND	0.010	0.0013	06/23/20 13:04	
Thallium	mg/L	ND	0.0010	0.000052	06/23/20 13:04	

LABORATORY CONTROL SAMPLE: 2919710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.096	96	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919711 2919712

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92482800001 Result	Spike Conc.	Spike Conc.	Result							Result
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	99	102	75-125	3	20	
Barium	mg/L	0.17	0.1	0.1	0.26	0.28	92	109	75-125	6	20	
Beryllium	mg/L	ND	0.1	0.1	0.095	0.095	95	95	75-125	0	20	
Boron	mg/L	0.045J	1	1	1.0	0.98	95	94	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Parameter	Units	2919711		2919712		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		9248280001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.096	0.10	96	101	75-125	5	20		
Lead	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	1	20		
Lithium	mg/L	0.019J	0.1	0.1	0.12	0.12	99	98	75-125	0	20		
Molybdenum	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 548606 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2918729 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/19/20 17:58	

LABORATORY CONTROL SAMPLE: 2918730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	419	105	84-108	

SAMPLE DUPLICATE: 2918731

Parameter	Units	92482647001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	18.0	15.0	18	10	D6

SAMPLE DUPLICATE: 2918732

Parameter	Units	92482647005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	28.0	43.0	42	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

QC Batch:	548907	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2919762 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/22/20 17:30	

LABORATORY CONTROL SAMPLE: 2919763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	84-108	

SAMPLE DUPLICATE: 2919764

Parameter	Units	92482662002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	163	182	11	10	D6

SAMPLE DUPLICATE: 2919765

Parameter	Units	92482737002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	97.0	86.0	12	10	D6

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549851 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482649001, 92482649002

METHOD BLANK: 2923886 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	06/29/20 15:57	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	06/29/20 15:57	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	06/29/20 15:57	

LABORATORY CONTROL SAMPLE: 2923887

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	52.7	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923888 2923889

Parameter	Units	92482268001		2923889		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO ₃	mg/L	ND	50	50	54.3	54.2	109	108	80-120	0	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2923890 2923891

Parameter	Units	92482880003		2923891		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO ₃	mg/L	8.3	50	50	63.0	63.9	109	111	80-120	2	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 550396 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2926273 Matrix: Water
Associated Lab Samples: 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/30/20 13:53	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/30/20 13:53	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/30/20 13:53	

LABORATORY CONTROL SAMPLE: 2926274

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926275 2926276

Parameter	Units	92483174015		2926276		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO3	mg/L	ND	50	50	50.7	50.1	101	100	80-120	1	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2926277 2926278

Parameter	Units	92482649003		2926278		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO3	mg/L	ND	50	50	57.1	57.5	104	105	80-120	1	25

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

QC Batch: 549382 Analysis Method: SM 4500-S2D-2011
 QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92482649001, 92482649002, 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

METHOD BLANK: 2921743 Matrix: Water
 Associated Lab Samples: 92482649001, 92482649002, 92482649003, 92482649004, 92482649005, 92482649006, 92482649007, 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	06/24/20 18:53	

LABORATORY CONTROL SAMPLE: 2921744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921745 2921746

Parameter	Units	92482649001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.55	0.54	110	109	80-120	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2921747 2921748

Parameter	Units	92482649002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	ND	0.5	0.5	0.34	0.34	67	67	80-120	1	10 M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549186 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649001, 92482649002, 92482649003

METHOD BLANK: 2920985 Matrix: Water
Associated Lab Samples: 92482649001, 92482649002, 92482649003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/24/20 23:11	
Fluoride	mg/L	ND	0.10	0.050	06/24/20 23:11	
Sulfate	mg/L	ND	1.0	0.50	06/24/20 23:11	

LABORATORY CONTROL SAMPLE: 2920986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.2	102	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	51.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2920987 2920988

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482762001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	1.2	50	50	49.9	49.9	97	97	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.5	97	97	90-110	1	10		
Sulfate	mg/L	ND	50	50	48.9	48.9	97	97	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2920989 2920990

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92483147008	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	2.7	50	50	55.2	57.4	105	110	90-110	4	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	97	102	90-110	5	10		
Sulfate	mg/L	0.74J	50	50	53.3	55.4	105	109	90-110	4	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 549584 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92482649004, 92482649005, 92482649006, 92482649007

METHOD BLANK: 2922593 Matrix: Water
Associated Lab Samples: 92482649004, 92482649005, 92482649006, 92482649007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/25/20 15:50	
Fluoride	mg/L	ND	0.10	0.050	06/25/20 15:50	
Sulfate	mg/L	ND	1.0	0.50	06/25/20 15:50	

LABORATORY CONTROL SAMPLE: 2922594

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.9	102	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Sulfate	mg/L	50	51.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922595 2922596

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92483318001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	6.6	6.6	50	50	55.6	55.0	98	97	90-110	1	10	
Fluoride	mg/L	0.090J	0.090J	2.5	2.5	2.7	2.6	103	102	90-110	1	10	
Sulfate	mg/L	5.5	5.5	50	50	55.0	54.4	99	98	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2922597 2922598

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92482981002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	21.7	21.7	50	50	70.6	71.0	98	99	90-110	1	10	
Fluoride	mg/L	ND	ND	2.5	2.5	2.5	2.5	99	98	90-110	0	10	
Sulfate	mg/L	8.0	8.0	50	50	58.0	58.1	100	100	90-110	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

QC Batch: 550052 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92482649008

METHOD BLANK: 2925000 Matrix: Water
Associated Lab Samples: 92482649008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/27/20 15:08	
Fluoride	mg/L	ND	0.10	0.050	06/27/20 15:08	
Sulfate	mg/L	ND	1.0	0.50	06/27/20 15:08	

LABORATORY CONTROL SAMPLE: 2925001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.5	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	50.9	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2925002 2925003

Parameter	Units	92482649008		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	160	50	50	206	206	91	92	90-110	0	10		
Fluoride	mg/L	0.10	2.5	2.5	2.5	2.5	95	97	90-110	2	10		
Sulfate	mg/L	292	50	50	337	339	91	94	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2925004 2925005

Parameter	Units	92483686007		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	33.3	50	50	84.9	86.5	103	106	90-110	2	10		
Fluoride	mg/L	0.28	2.5	2.5	2.7	2.9	97	103	90-110	5	10		
Sulfate	mg/L	1960	50	50	2020	2020	119	118	90-110	0	10 M6		

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QUALIFIERS

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE

Pace Project No.: 92482649

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482649001	MW-21D				
92482649002	MW-33				
92482649003	MW-35				
92482649005	MW-34D				
92482649006	MW-36D				
92482649007	MW-37D				
92482649008	MW-37D, FILTERED				
92482649001	MW-21D	EPA 3010A	548539	EPA 6010D	548601
92482649002	MW-33	EPA 3010A	548539	EPA 6010D	548601
92482649003	MW-35	EPA 3010A	548844	EPA 6010D	548861
92482649004	FB-02	EPA 3010A	548844	EPA 6010D	548861
92482649005	MW-34D	EPA 3010A	548844	EPA 6010D	548861
92482649006	MW-36D	EPA 3010A	548844	EPA 6010D	548861
92482649007	MW-37D	EPA 3010A	548844	EPA 6010D	548861
92482649008	MW-37D, FILTERED	EPA 3010A	548844	EPA 6010D	548861
92482649001	MW-21D	EPA 3005A	548509	EPA 6020B	548546
92482649002	MW-33	EPA 3005A	548509	EPA 6020B	548546
92482649003	MW-35	EPA 3005A	548895	EPA 6020B	548915
92482649004	FB-02	EPA 3005A	548895	EPA 6020B	548915
92482649005	MW-34D	EPA 3005A	548895	EPA 6020B	548915
92482649006	MW-36D	EPA 3005A	548895	EPA 6020B	548915
92482649007	MW-37D	EPA 3005A	548895	EPA 6020B	548915
92482649008	MW-37D, FILTERED	EPA 3005A	548895	EPA 6020B	548915
92482649001	MW-21D	SM 2450C-2011	548606		
92482649002	MW-33	SM 2450C-2011	548606		
92482649003	MW-35	SM 2450C-2011	548907		
92482649004	FB-02	SM 2450C-2011	548907		
92482649005	MW-34D	SM 2450C-2011	548907		
92482649006	MW-36D	SM 2450C-2011	548907		
92482649007	MW-37D	SM 2450C-2011	548907		
92482649008	MW-37D, FILTERED	SM 2450C-2011	548907		
92482649001	MW-21D	SM 2320B-2011	549851		
92482649002	MW-33	SM 2320B-2011	549851		
92482649003	MW-35	SM 2320B-2011	550396		
92482649004	FB-02	SM 2320B-2011	550396		
92482649005	MW-34D	SM 2320B-2011	550396		
92482649006	MW-36D	SM 2320B-2011	550396		
92482649007	MW-37D	SM 2320B-2011	550396		
92482649008	MW-37D, FILTERED	SM 2320B-2011	550396		
92482649001	MW-21D	SM 4500-S2D-2011	549382		
92482649002	MW-33	SM 4500-S2D-2011	549382		
92482649003	MW-35	SM 4500-S2D-2011	549382		
92482649004	FB-02	SM 4500-S2D-2011	549382		
92482649005	MW-34D	SM 4500-S2D-2011	549382		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-2 NON ROUTINE
Pace Project No.: 92482649

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92482649006	MW-36D	SM 4500-S2D-2011	549382		
92482649007	MW-37D	SM 4500-S2D-2011	549382		
92482649008	MW-37D, FILTERED	SM 4500-S2D-2011	549382		
92482649001	MW-21D	EPA 300.0 Rev 2.1 1993	549186		
92482649002	MW-33	EPA 300.0 Rev 2.1 1993	549186		
92482649003	MW-35	EPA 300.0 Rev 2.1 1993	549186		
92482649004	FB-02	EPA 300.0 Rev 2.1 1993	549584		
92482649005	MW-34D	EPA 300.0 Rev 2.1 1993	549584		
92482649006	MW-36D	EPA 300.0 Rev 2.1 1993	549584		
92482649007	MW-37D	EPA 300.0 Rev 2.1 1993	549584		
92482649008	MW-37D, FILTERED	EPA 300.0 Rev 2.1 1993	550052		

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Data Validation Reports

Memorandum

Date: August 4, 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2628190**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, one equipment blank and one field blank collected 22 January 2020, as part of the Plant Hammond AP on-site sampling event.

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

- Calcium by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D
- Boron and Cobalt by USEPA Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services Asheville, North Carolina, for the following analytical test:

- Anions (Chloride and Sulfate) by USEPA Method 300.0

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 limitation of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001); and
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012).

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

Laboratory ID	Client ID
2628190001	MW-33
2628190002	EB-01

Laboratory ID	Client ID
2628190003	FB-01

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

The year was not documented on the chain of custody (COC) for the collection times. The samples were logged in with the collection year 2020. There was a time discrepancy for the second sample transfer. The relinquished by time was documented as 01/23/20 1212 and the received by time was documented as 01/23/20 1215.

The field pH data was not validated.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and boron and cobalt by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in this data package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 42376 and 42642). Metals were not detected in the method blanks above the method detection limits (MDLs).

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

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

1.6 Equipment Blank

One equipment blank was collected with the sample set, EB-01. The metals were not detected in the equipment blank above the MDL, with the following exception.

Boron was detected in EB-01 at an estimated concentration greater than the MDL and less than the RL. Since the boron concentration in EB-01 was U qualified due to field blank contamination, no qualifications were applied to the data.

1.7 Field Blank

One field blank was collected with the sample set, FB-01. The metals were not detected in the equipment blank above the MDL, with the following exception.

Boron was detected in FB-01 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated boron concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
EB-01	Boron	0.045	J	0.10	U	3

mg/L-milligrams 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

1.8 Field Duplicate

A field duplicate was not collected with the sample set.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method and anions by USEPA method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank

- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The wet chemistry data reported in this data package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

2.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the anions (batch 521472). The anions were not detected in the method blank above the MDLs.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two batch MS/MSD pairs were reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

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

2.6 Laboratory Duplicate

Two batch laboratory duplicates were reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.7 Equipment Blank

One equipment blank was collected with the sample set, EB-01. The wet chemistry parameters were not detected in the equipment blank above the MDL, with the following exception.

2.8 Field Blank

One field blank was collected with the sample set, FB-01. The wet chemistry parameters were not detected in the field blank above the MDL, with the following exception.

TDS (17.0 mg/L) was detected in FB-01 at a concentration greater than the RL. Since TDS was either not detected or detected at a concentration greater than ten times the field blank concentration, no qualifications were applied to the data.

2.9 Field Duplicate

A field duplicate was not collected with the sample set.

2.10 Sensitivity

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

2.11 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure 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

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: August 11, 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2629701 and 30353288**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of fourteen aqueous samples, one field duplicate sample and one field blank, collected 2-3 March 2020, as part of the Plant Hammond AP on-site sampling event.

The samples were analyzed at Pace Analytical Services Atlanta, 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

The samples were analyzed at Pace Analytical Services Asheville, North Carolina, for the following analytical test:

- Fluoride 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. 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).

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

Laboratory ID	Client ID
2629701001	HGWA-4
2629701002	HGWA-5
2629701003	HGWA-6
2629701004	MW-23D
2629701005	MW-22
2629701006	HGWA-1
2629701007	HGWA-2
2629701008	HGWA-3

Laboratory ID	Client ID
2629701009	HGWC-16
2629701010	HGWC-17
2629701011	FB-02
2629701012	HGWC-14
2629701013	HGWC-15
2629701014	HGWC-18
2629701015	MW-21D
2629701016	FD-01

The samples in laboratory report 2629701 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:

- 2629701: Incorrect error corrections were observed on the COC, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.
- 2629701: The relinquished by signatures, dates and times were not documented for the third sample transfers on the pages 1-4 of the COC.
- 2629701: The received by signature, date and time were not documented for the third sample transfer on page 5 of the COC.
- 2629701: The received by signature, date and time were not documented for the fourth sample transfer on page 6 of the COC.

- 30353288: The relinquished by signature, date and time were not documented on page 1 of the COC.
- 30353288: The signatures, dates and times for the sample transfers for pages 3-4 of the COC were documented on separate pages.

The field pH data included with laboratory report 2629701 were not validated.

1.0 METALS

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

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ⊗ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 44279 and 44398). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

Antimony was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 44279. Since antimony was not detected in the associated samples, no qualifications were applied to the data.

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two 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). 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 set, FB-02. Metals were not detected in the field blank above the MDLs.

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, 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-18, with the following exception.

The difference between the chromium concentrations in the field duplicate pair was greater than the RL. Therefore, the chromium concentrations in the field duplicate pair were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Reporting Limit	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
HGWC-18	Chromium	0.00040	J	0.010	0.00040	J	7
FD-01	Chromium	0.037	NA		0.037	J	7

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

2.0 **MERCURY**

The samples were analyzed for mercury by USEPA method 7470A.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of

the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 44210, 44366 and 44498). Mercury was not detected in the method blanks above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample HGWC-18. The recovery and RPD results were within the laboratory specified acceptance criteria.

Two batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were 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 set, FB-02. Mercury was not detected in the field blank above the MDL.

2.8 Field Duplicate

One field duplicate sample was collected with the sample set, 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-18.

2.9 Sensitivity

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

2.10 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

3.0 FLUORIDE

The samples were analyzed for fluoride by USEPA method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The fluoride data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

3.2 Holding Times

The holding time for the fluoride analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 528851, 529130, 529175 and 529391). 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). Eight 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.

3.5 Laboratory Control Sample

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

3.6 Equipment Blank

An equipment blank was not collected with the sample set.

3.7 Field Blank

One field blank was collected with the sample set, FB-02. Fluoride was not detected in the field blank above the MDL.

3.8 Field Duplicate

One field duplicate sample was collected with the sample set, 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-18.

3.9 Sensitivity

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

3.10 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by USEPA method 9315, radium-228 by USEPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ⊗ Laboratory Control Sample
- ⊗ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

4.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

4.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the radium-228 data (batches 387209 and 387208). Two method blanks were reported for the radium-226 data (batches 387206 and 387205). Radium-228 was not detected in the method blanks above the minimum detectable concentrations (MDCs).

Radium-226 was detected above the MDCs in the method blanks in batches 387206 (0.672 pCi/L) and 387205 (605 pCi/L). Therefore, the radium-226 concentrations in the associated samples less than the method blank concentrations were U qualified as not detected at the reported concentrations and the radium-226 concentrations in the associated samples greater than the method blank concentrations were J+ qualified as estimated with high bias.

In addition, the combined radium-226 + 228 concentrations in samples HGWA-2, HGWC-17 and HGWC-14 were J+ qualified as estimated with high bias, based on professional and technical judgment.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-4	Radium-226	0.493	NA	0.493	U	3
HGWA-5	Radium-226	0.547	NA	0.547	U	3
HGWA-6	Radium-226	0.676	NA	0.676	J+	3
MW-23D	Radium-226	0.582	NA	0.582	U	3
MW-22	Radium-226	0.688	NA	0.688	J+	3
HGWA-1	Radium-226	0.577	NA	0.577	U	3
HGWA-2	Radium-226	0.903	NA	0.903	J+	3
HGWA-2	Combined Radium 226 + 228	1.58	NA	1.58	J+	3
HGWC-16	Radium-226	0.707	NA	0.707	J+	3
HGWC-17	Radium-226	0.384	NA	0.384	U	3
HGWC-17	Combined Radium 226 + 228	1.33	NA	1.33	J+	3
FB-02	Radium-226	0.526	NA	0.526	U	3
HGWC-14	Radium-226	1.29	NA	1.29	J+	3
HGWC-14	Combined Radium 226 + 228	1.84	NA	1.84	J+	3
HGWC-18	Radium-226	1.38	NA	1.38	J+	3
HGWC-18	Combined Radium 226 + 228	2.35	NA	2.35	J+	3
MW-21D	Radium-226	0.965	NA	0.965	J+	3
MW-21D	Combined Radium 226 + 228	1.94	NA	1.94	J+	3

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
FD-01	Radium-226	2.05	NA	2.05	J+	3

pCi/L- picocuries per liter

NA-not applicable

4.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

4.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two 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 (2σ)] results were within the laboratory specified acceptance criteria, with the following exception.

The recovery of radium-228 in the LCS in the batch 387208 was low and outside the laboratory specified acceptance criteria. Therefore, the non-detect radium-228 results in the associated samples were UJ qualified as estimated less than the MDCs. Also, the non-detect combined radium 226 + 228 results in the associated samples were UJ qualified as estimated less than the MDCs and combined radium 226 + 228 concentrations in the associated samples were J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-4	Radium-228	0.444	U	0.444	UJ	5
HGWA-4	Combined Radium 226 + 228	0.937	U	0.937	UJ	5
HGWA-5	Radium-228	-0.123	U	-0.123	UJ	5
HGWA-5	Combined Radium 226 + 228	0.547	U	0.547	UJ	5
HGWA-6	Radium-228	-0.000374	U	-0.000374	UJ	5
HGWA-6	Combined Radium 226 + 228	0.676	U	0.676	UJ	5
MW-23D	Radium-228	0.382	U	0.382	UJ	5
MW-23D	Combined Radium 226 + 228	0.964	U	0.964	UJ	5
MW-22	Radium-228	0.184	U	0.184	UJ	5
MW-22	Combined Radium 226 + 228	0.872	U	0.872	UJ	5
HGWA-1	Radium-228	0.0334	U	0.0334	UJ	5
HGWA-1	Combined Radium 226 + 228	0.610	U	0.610	UJ	5
HGWA-2	Radium-228	0.680	U	0.680	UJ	5
HGWA-2	Combined Radium 226 + 228	1.58	NA	1.58	J	5
HGWA-3	Radium-228	0.0192	U	0.0192	UJ	5

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-3	Combined Radium 226 + 228	0.249	U	0.249	UJ	5
HGWC-16	Radium-228	0.613	U	0.613	UJ	5
HGWC-16	Combined Radium 226 + 228	1.32	U	1.32	UJ	5
HGWC-17	Radium-228	0.950	U	0.950	UJ	5
HGWC-17	Combined Radium 226 + 228	1.33	NA	1.33	J	5
FB-02	Radium-228	0.368	U	0.368	UJ	5
FB-02	Combined Radium 226 + 228	0.894	U	0.894	UJ	5
HGWC-14	Radium-228	0.548	U	0.548	UJ	5
HGWC-14	Combined Radium 226 + 228	1.84	NA	1.84	J	3

pCi/L- picocuries per liter

U-not detected at or above the MDC

NA-not applicable

4.6 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for radium-226 using sample FD-01. The RER (2σ) result was within the laboratory specified acceptance criteria.

The RER of radium-226 in the laboratory duplicate was high and outside the laboratory specified acceptance criteria. Therefore, the radium-226 and combined radium 226 + 228 concentrations in sample FD-01 were J qualified as estimated.

One batch laboratory duplicate was also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
FD-01	Radium-226	2.05	NA	2.05	J	12
FD-01	Combined Radium 226 + 228	2.55	NA	2.55	J	12

pCi/L- picocuries per liter

NA-not applicable

4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory 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 set, FB-02. Radium-228 was not detected in the field blank above the MDC.

Radium-226 (0.526 pCi/L) was detected in FB-02 at a concentration greater than the MDC. Since the radium-226 concentration in FB-02 was U qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

4.10 Field Duplicate

One field duplicate sample was collected with the sample set, FD-01. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-18.

4.11 Sensitivity

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

4.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure 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

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: August 5, 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2630472 and 30356789**

SITE: Plant Hammond AP-2

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 25 March - 1 April 2020, as part of the Plant Hammond AP on-site sampling event.

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

- Calcium by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D
- Metals by USEPA Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services Asheville, North Carolina, for the following analytical test:

- Anions (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. 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).

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

Laboratory ID	Client ID
2630472001	HGWA-1
2630472002	HGWA-3
2630472003	HGWA-2
2630472004	HGWA-6
2630472005	HGWA-5
2630472006	HGWA-4
2630472007	HGWC-15
2630472008	MW-22
2630472009	HGWC-14

Laboratory ID	Client ID
2630472010	FD-02
2630472011	HGWC-16
2630472012	FB-02
2630472013	HGWC-17
2630472014	HGWC-18
2630472015	MW-21D
2630472016	MW-33
2630472017	MW-23D

The samples in laboratory report 2630472 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:

- 2630472: Incorrect error corrections were observed on the COC, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.
- 2630472: The year was not documented for the collection times for the samples listed on pages 2, 7 and 10 of the COC. The samples were logged in with the collection year 2020.
- 2630472: There was a time discrepancy for the first sample transfer on page 3 of the COC. The relinquished by time was documented as 3/25/20 1817 and the received by time was documented as 3/25/20 1812.

- 2630472: A collection time was not listed on the COC for the field duplicate. The field duplicate was logged in with the collection time of 00:00.
- 2630472: There were time discrepancies for the second sample transfers on pages 6-7 of the COC. The relinquished by time was documented as 3/30/20 1903 and the received by time was documented as 3/30/20 1902.
- 2630472: The year was not documented for the relinquished by date for the fourth sample transfer on page 6 of the COC.
- 30356789: A collection time was not listed on the COC for the field duplicate. The field duplicate was logged in with the collection time of 00:01.
- 30356789: The relinquished by signature, date and time were not documented on page 1 of the COC.
- 30356789: The signatures, dates and times were not documented on page 3 of the COC.
- 30356789: The signatures, dates and times for the sample transfers for pages 4 of the COC were documented on separate pages.

The field pH data included with laboratory report 2630472 were not validated.

1.0 METALS

The samples were analyzed for calcium by USEPA methods 3010A/6010D and metals by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number

of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Thirteen method blanks were reported (batches 45121, 45172, 45185, 45190, 45218, 45249, 45281, 45112, 45113, 45171, 45184, 45189 and 45226). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

Arsenic was detected in the method blanks in batches 45189 and 45226 at estimated concentrations greater than the MDL and less than the RL. Therefore, the estimated arsenic concentrations in the associated samples were U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
FD-02	Arsenic	0.0048	J B	0.0050	U	3
HGWC-16	Arsenic	0.0011	J B	0.0050	U	3
HGWC-17	Arsenic	0.00080	J B	0.0050	U	3
MW-21D	Arsenic	0.0013	J B	0.0050	U	3
MW-23D	Arsenic	0.00082	J B	0.0050	U	3

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 both the method blank and sample

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported for metals using sample HGWA-6. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

Twelve batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Thirteen 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 set, FB-02. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Boron and chromium were detected in FB-02 at estimated concentrations greater than the MDLs and less than the RLs. Therefore, the estimated boron and chromium concentrations in the associated samples were U qualified as not detected at the RLs.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
HGWA-1	Boron	0.025	J	0.10	U	3
HGWA-1	Chromium	0.00072	J	0.010	U	3
HGWA-3	Boron	0.0096	J	0.10	U	3
HGWA-2	Boron	0.039	J	0.10	U	3
HGWA-6	Boron	0.021	J	0.10	U	3
HGWA-5	Boron	0.0072	J	0.10	U	3
HGWA-4	Boron	0.012	J	0.10	U	3
HGWC-14	Chromium	0.00066	J	0.010	U	3
FD-02	Chromium	0.00041	J	0.010	U	3
HGWC-16	Chromium	0.00040	J	0.010	U	3
MW-33	Chromium	0.00069	J	0.010	U	3
MW-23D	Chromium	0.00086	J	0.010	U	3

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-14.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flag B used in the level II report was not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard method 2540C and anions by USEPA method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

2.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions (chloride, fluoride, sulfate) analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported for the anions (batches 533972, 533983, 533985, 534237 and 534425). The anions were not detected in the method blanks above the MDLs.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported for the anions, using samples HGWA-1 and HGWC-17. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The recovery of chloride in the MSD using sample HGWA-1 was high and outside the laboratory specified acceptance criteria. Therefore, the chloride concentration in sample HGWA-1 was J+ qualified as estimated with high bias.

The recoveries of fluoride in the MS/MSD using sample HGWA-17 were high and outside the laboratory specified acceptance criteria. Since fluoride was not detected in sample HGWA-17, no qualifications were applied to the data.

Eight batch 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
HGWA-1	Chloride	20.4	NA	20.4	J+	4

mg/L-milligrams per liter

NA-not applicable

2.5 Laboratory Control Sample

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

2.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for TDS using samples HGWA-3 and HGWA-4. The RPD results were within the laboratory specified acceptance criteria.

Seven batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.7 Equipment Blank

An equipment blank was not collected with the sample set.

2.8 Field Blank

One field blank was collected with the sample set, FB-02. The wet chemistry parameters were not detected in the field blank above the MDL.

2.9 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision (RPD \leq 20% or the difference between the concentrations $<$ RL) was demonstrated between the field duplicate and the original sample, HGWC-14.

2.10 Sensitivity

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

2.11 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flags M1 and D6 used in the level II report were not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

3.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by USEPA method 9315, radium-228 by USEPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

3.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported for the radium-228 data (batches 390462, 390595, 391344, 391019 and 391023). Four method blanks were reported for the radium-226 data (batches 391022, 390592, 391017 and 391343). Radium-226 and

radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

Radium-226 was detected above the MDC in the method blank in batch 390592 (0.444 pCi/L). Therefore, the radium-226 concentrations in the associated samples less than the method blank concentration were U qualified as not detected at the reported concentrations and the radium-226 concentration in the associated sample greater than the method blank concentration was J+ qualified as estimated with high bias. In addition, based on professional and technical judgment the combined radium 226 + 228 concentration in sample HGWA-1 was J+ qualified as estimated with high bias.

Radium-228 was detected above the MDCs in the method blanks in batches 390462 (0.720 pCi/L) and 391019 (0.771 pCi/L). Therefore, the radium-228 concentration in the associated sample greater than the method blank concentration was J+ qualified as estimated with high bias. In addition, based on professional and technical judgment the combined radium 226 + 228 concentration in sample HGWA-1 was J+ qualified as estimated with high bias.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
HGWA-1	Radium-226	0.221	NA	0.221	U	3
HGWA-1	Radium-228	4.14	NA	4.14	J+	3
HGWA-1	Combined Radium 226 + 228	4.36	NA	4.36	J+	3
HGWA-3	Radium-226	0.377	NA	0.377	U	3
HGWA-2	Radium-226	0.621	NA	0.621	J+	3
HGWA-6	Radium-226	0.495	NA	0.495	J+	3

pCi/L- picocuries per liter

NA-not applicable

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

3.5 Laboratory Control Sample

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

3.6 Laboratory Duplicate

One sample set laboratory duplicate was reported for radium-226 using sample MW-21D. The RER (2σ) result was within the laboratory specified acceptance criteria.

Three batch laboratory duplicates were also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

3.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

3.8 Equipment Blank

An equipment blank was not collected with the sample set.

3.9 Field Blank

One field blank was collected with the sample set, FB-02. Radium-226 and Radium-228 were not detected in the field blank above the MDCs.

3.10 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision (RER (2σ) < 3) was demonstrated between the field duplicate and the original sample, HGWC-14.

3.11 Sensitivity

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

3.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure 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

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

Memorandum

Date: August 5, 2020
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 92482645 and 92482649**

SITE: Plant Hammond AP-2

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of six aqueous samples, one field filtered aqueous sample and one field blank, collected 17-18 June 2020, as part of the Plant Hammond AP on-site sampling event.

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

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3010A/6010D and 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services Asheville, North Carolina, for the following analytical test:

- Alkalinity by Standard Method 2320B
- Sulfide by Standard Method 4500 S2D
- Anions (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. 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).

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

Laboratory ID	Client ID
92482645001	MW-21D
92482645002	MW-33
92482645003	MW-35
92482645004	FB-02
92482645005	MW-34D
92482645006	MW-36D
92482645007	MW-37D
92482645008	MW-37D, FILTERED

Laboratory ID	Client ID
92482649001	MW-21D
92482649002	MW-33
92482649003	MW-35
92482649004	FB-02
92482649005	MW-34D
92482649006	MW-36D
92482649007	MW-37D
92482649008	MW-37D, FILTERED

The samples in laboratory report 92482649 were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

Incorrect error corrections were observed on the COCs, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

The field pH data included with laboratory report 92482649 were not validated.

1.0 METALS

The samples were analyzed for metals by USEPA methods 3010A/6010D and 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues

were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Total vs Dissolved Metals Assessment
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 548539, 548844, 548509 and 548895). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

Magnesium was detected in the method blank in batch 2919468 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated magnesium concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
FB-02	Magnesium	0.026	J B	0.050	U	3

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 both the method blank and sample

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported for metals by USEPA method 6010D using sample MW-35. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of calcium, magnesium and manganese in the MS/MSD pair were low and outside the laboratory specified acceptance criteria. Since the calcium, magnesium and manganese concentrations in sample MW-35 were greater than four times the spiked concentrations, no qualifications were applied to the data.

Three batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

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). Four 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 set, FB-02. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Boron, calcium and magnesium were detected in FB-02 at estimated concentrations greater than the MDLs and less than the RLs. Since calcium and magnesium was detected above the RLs in the associated samples, no qualifications were applied to the calcium and magnesium data. However, the estimated boron concentration in the associated sample was U qualified as not detected at the RL.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
MW-36D	Boron	0.067	J	0.10	U	3

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

1.8 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision (RPD $\leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicate and the original sample, HGWC-14.

1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.10 Total vs Dissolved Metals Assessment

Sample MW-37D was collected as both an unfiltered and filtered sample to report total and dissolved metals, respectively. The total metal concentrations were greater than the dissolved metal concentrations, with the following exceptions.

The dissolved calcium, magnesium and sodium concentrations were greater than the total calcium, magnesium and sodium concentrations. Since the RPDs between the total and dissolved concentrations were less than 30%, no qualifications were applied to the data, based on professional and technical judgment.

1.11 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flags B, M1 and M6 used in the level II report was not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard method 2540C, alkalinity by Standard Method 2320B, sulfide by Standard Method 4500-S2D and anions by USEPA method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Total vs Dissolved Wet Chemistry Assessment
- ✓ Electronic Data Deliverables Review

2.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

2.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding time for the alkalinity analysis of a water sample is 14 days from sample collection to analysis. The holding time for the sulfide analysis of a water sample is 7 days from sample collection to analysis. The holding time for the anions (chloride, fluoride and sulfate) analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for TDS (batches 548606 and 548907), two method blanks were reported for alkalinity (batches 549851 and 550396), one method blank was reported for sulfide (batch 549382) and three method blanks were reported for the anions (batches 549186, 549584 and 550052). The wet chemistry parameters were not detected in the method blanks above the MDLs.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported for the

alkalinity using sample MW-35, two sample set specific MS/MSD pairs were reported for sulfide using samples MW-21D and MW-33 and one sample set specific MS/MSD pair was reported for the anions using sample MW-37D, FILTERED. The recovery and RPD results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of sulfide in the MS/MSD pair using sample MW-33 were low and outside the laboratory specified acceptance criteria. Therefore, the non-detect sulfide result in sample MW-33 was UJ qualified as estimated less than the MDL.

Three batch MS/MSD pairs were also reported for alkalinity and five batch MS/MSD pairs were 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
MW-33	Sulfide	0.050	U	0.050	UJ	4

mg/L- milligram per liter

U-not detected at or above the MDL

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported for TDS, two LCSs were reported for alkalinity, one LCS was reported for sulfide and three LCSs were reported for the anions. The recovery results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Four batch laboratory duplicates were reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.7 Equipment Blank

An equipment blank was not collected with the sample set.

2.8 Field Blank

One field blank was collected with the sample set, FB-02. The wet chemistry parameters were not detected in the field blank above the MDL.

2.9 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision (RPD $\leq 20\%$ or the difference between the concentrations $< RL$) was demonstrated between the field duplicate and the original sample, HGWC-14.

2.10 Sensitivity

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

2.11 Total vs Dissolved Wet Chemistry Assessment

Sample MW-37D was collected as both an unfiltered and filtered sample to report total and dissolved wet chemistry parameters, respectively. The wet chemistry concentrations in the unfiltered sample (total) were greater than the concentrations in the filtered sample (dissolved), with the following exceptions.

The dissolved chloride and sulfate concentrations were greater than the total chloride and sulfate concentrations. Since the RPDs between the total and dissolved concentrations were less than 30%, no qualifications were applied to the data, based on professional and technical judgment.

2.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II report were not included in the EDD. No other discrepancies were identified between the level II report and the EDD.

3.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by USEPA method 9315, radium-228 by USEPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample

- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

3.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

3.2 Holding Times

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the radium-228 data (batch 402596). One method blank was reported for the radium-226 data (batch 403006). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

3.5 Laboratory Control Sample

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

3.6 Laboratory Duplicate

One batch laboratory duplicate was 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.

3.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory specified acceptance criteria.

3.8 Equipment Blank

An equipment blank was not collected with the sample set.

3.9 Field Blank

One field blank was collected with the sample set, FB-02. Radium-226 and Radium-228 were not detected in the field blank above the MDCs.

3.10 Field Duplicate

One field duplicate sample was collected with the sample set, FD-02. Acceptable precision ($RER(2\sigma) < 3$) was demonstrated between the field duplicate and the original sample, HGWC-14.

3.11 Sensitivity

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

3.12 Total vs Dissolved Radiochemistry Assessment

Sample MW-37D was collected as both an unfiltered and filtered sample to report total and dissolved radium-226 and radium-228, respectively. The total radium-226 and radium-228 concentrations were greater than the dissolved radium-226 and radium-228 concentrations.

3.13 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.

- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure 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

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

July 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-Ash Pond #2
Pace Project No.: 92486807

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on July 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Peachtree Corners, GA

Client provided updated COC on 7/20/20.

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Jean Brown, Georgia Power
David Duncan, Southern Company
Warren Johnson, ARCADIS - Atlanta
Christine Ridley, Southern Company
Erika Yeager, Southern Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92486807001	AP-2 UP	Water	07/17/20 13:50	07/17/20 17:34
92486807002	AP-2 MID	Water	07/17/20 13:40	07/17/20 17:34
92486807003	AP-2 DOWN	Water	07/17/20 11:50	07/17/20 17:34

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-Ash Pond #2
Pace Project No.: 92486807

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92486807001	AP-2 UP	EPA 6020B	CW1	2	PASI-GA
92486807002	AP-2 MID	EPA 6020B	CW1	2	PASI-GA
92486807003	AP-2 DOWN	EPA 6020B	CW1	2	PASI-GA

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Sample: AP-2 UP		Lab ID: 92486807001		Collected: 07/17/20 13:50	Received: 07/17/20 17:34	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 15:51	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 15:51	7440-48-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Sample: AP-2 MID	Lab ID: 92486807002	Collected: 07/17/20 13:40	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	0.12	mg/L	0.040	1	07/20/20 17:34	07/21/20 15:56	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 15:56	7440-48-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

Sample: AP-2 DOWN		Lab ID: 92486807003		Collected: 07/17/20 11:50	Received: 07/17/20 17:34	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:17	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:17	7440-48-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

QC Batch: 554508

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92486807001, 92486807002, 92486807003

METHOD BLANK: 2945842

Matrix: Water

Associated Lab Samples: 92486807001, 92486807002, 92486807003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	07/21/20 15:05	
Cobalt	mg/L	ND	0.0050	07/21/20 15:05	

LABORATORY CONTROL SAMPLE: 2945843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945844 2945845

Parameter	Units	92486806001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	ND	1	1	1.0	0.97	98	94	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond-Ash Pond #2

Pace Project No.: 92486807

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-Ash Pond #2
Pace Project No.: 92486807

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92486807001	AP-2 UP	EPA 3005A	554508	EPA 6020B	554522
92486807002	AP-2 MID	EPA 3005A	554508	EPA 6020B	554522
92486807003	AP-2 DOWN	EPA 3005A	554508	EPA 6020B	554522

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: ARCADIS - Atlanta Address: 2899 Paces Ferry Rd Atlanta, GA 30339 Email: walter.johnson@arcadis.com Phone: 678.485.5298 Fax: Requested Due Date: 7 Day TAT

Section B Required Project Information: Report To: Ben Hodges, GPC Copy To: Purchase Order #: SCS10382775 Project Name: Plant Hammond AP-2 Project #:

Section C Invoice Information: Attention: Ben Hodges Company Name: GPC Address: Pace Queue: Pace Project Manager: Mayla Pariss@pecalabs.com, Pace Profile #: 239

Regulatory Agency: State / Location: GA

Page: 1 of 1

ITEM #	MATRIX One Character per box. (A-Z, 0-9 / -) Sample IDs must be unique	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analytes Test	Requested Analyte Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
					START DATE TIME	END DATE TIME											
1	AP-2 UP	WT			7-17	13:50				X							
2	AP-2 MID	WT			7-17	13:50				X							
3	AP-2 DOWN	WT			7-17	11:50				X							
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

REIMBURSED BY / APPLICATION: *Plant Hammond* DATE: *7-17-20* TIME: *9:17 AM*

ACCEPTED BY / APPLICATION: *R. Williams* DATE: *7/17/20* TIME: *1:34 PM*

SAMPLER NAME AND SIGNATURE: *Walter Johnson*

PRINT Name of SAMPLER: *Walter Johnson*

SIGNATURE of SAMPLER: *Walter Johnson*

DATE Signed: *7-17-20*

WO#: 92486807

92486807



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: ARCADIS - Atlanta Address: 2839 Paces Ferry Rd Atlanta, GA 30339 Email: walter.johnson@arcadis.com Phone: 678.485.5298 Fax: Project Name: Plant Hammond AP-2 Requested Due Date: 7 Day TAT

Section B Required Project Information: Report To: Ben Hodges, GPC Copy To: Purchase Order #: SCS10382775 Project Name: Plant Hammond AP-2 Project #:

Section C Invoice Information: Attention: Ben Hodges Company Name: GPC Address: Pace Queue: Pace Project Manager: Mayla Parris@pecalabs.com, Pace Profile #: 239

Regulatory Agency: State / Location: GA

Page: 1 of 1

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analyte Filtered (Y/N)	Residual Chlorine (Y/N)
					START DATE	END DATE						
1	AP-2 UP	WT			7-17	13:50		Unpreserved				
2	AP-2 MID	WT			7-17	13:50		H2SO4				
3	AP-2 DOWN	WT			7-17	11:50		HNO3				
4								HCl				
5								NaOH				
6								Na2S2O3				
7								Methanol				
8								Other				
9												
10												
11												
12												

ADDITIONAL COMMENTS

REIMBURSED BY / APPLICATION: *Red Seal* DATE: *7-17-20* TIME:

ACCEPTED BY / APPLICATION: *R. Williams* DATE: *7-17-20* TIME: *2:47 PM*

SAMPLE CONDITIONS: Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE: *Walter Johnson* DATE Signed: *7-17-20*

WO#: 92486807

92486807



Sample Condition Upon Receipt

Client Name: Arcadis ATL

WO#: 92486807

PM: NP Due Date: 07/22/20
CLIENT: GA-ArcadAtI

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #:

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 233 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/18/2004

Table with 16 rows and 3 columns. Rows include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: Field Data Required? Y / N
Person Contacted: Date/Time:
Comments/ Resolution:

Project Manager Review: Date:

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

July 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on July 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Peachtree Corners, GA

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Jean Brown, Georgia Power
David Duncan, Southern Company
Warren Johnson, ARCADIS - Atlanta
Christine Ridley, Southern Company
Erika Yeager, Southern Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92486808001	H+0.75	Water	07/17/20 11:40	07/17/20 17:34
92486808002	H+0.25	Water	07/17/20 11:55	07/17/20 17:34
92486808003	H-0.5	Water	07/17/20 12:00	07/17/20 17:34
92486808004	H-2	Water	07/17/20 13:00	07/17/20 17:34

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92486808001	H+0.75	EPA 6020B	CW1	3	PASI-GA
92486808002	H+0.25	EPA 6020B	CW1	3	PASI-GA
92486808003	H-0.5	EPA 6020B	CW1	3	PASI-GA
92486808004	H-2	EPA 6020B	CW1	3	PASI-GA

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H+0.75	Lab ID: 92486808001	Collected: 07/17/20 11:40	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:23	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:23	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:23	7439-98-7	

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H+0.25	Lab ID: 92486808002	Collected: 07/17/20 11:55	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:29	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:29	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:29	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H-0.5	Lab ID: 92486808003	Collected: 07/17/20 12:00	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:34	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:34	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:34	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

Sample: H-2	Lab ID: 92486808004	Collected: 07/17/20 13:00	Received: 07/17/20 17:34	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Pace Analytical Services - Peachtree Corners, GA

Boron	ND	mg/L	0.040	1	07/20/20 17:34	07/21/20 16:40	7440-42-8	
Cobalt	ND	mg/L	0.0050	1	07/20/20 17:34	07/21/20 16:40	7440-48-4	
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 16:40	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

QC Batch: 554508 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92486808001, 92486808002, 92486808003, 92486808004

METHOD BLANK: 2945842 Matrix: Water
Associated Lab Samples: 92486808001, 92486808002, 92486808003, 92486808004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	07/21/20 15:05	
Cobalt	mg/L	ND	0.0050	07/21/20 15:05	
Molybdenum	mg/L	ND	0.010	07/21/20 15:05	

LABORATORY CONTROL SAMPLE: 2945843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945844 2945845

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92486806001 Result	Spike Conc.	Spike Conc.	Result								
Boron	mg/L	ND	1	1	1.0	0.97	98	94	75-125	4	20		
Cobalt	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond-Coosa River

Pace Project No.: 92486808

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - 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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-Coosa River
Pace Project No.: 92486808

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92486808001	H+0.75	EPA 3005A	554508	EPA 6020B	554522
92486808002	H+0.25	EPA 3005A	554508	EPA 6020B	554522
92486808003	H-0.5	EPA 3005A	554508	EPA 6020B	554522
92486808004	H-2	EPA 3005A	554508	EPA 6020B	554522

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 92486808

Client Name: Arcadis ATL

PH: NP Due Date: 07/22/20

CLIENT: GA-ArcadAt1

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [x] Pace Other

Tracking #: _____

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

Proj. Due Date: _____
Proj. Name: _____

Packing Material: [] Bubble Wrap [] Bubble Bags [x] None [] Other

Thermometer Used 233 Type of Ice: [x] Wet Blue None [] Samples on ice, cooling process has begun

Cooler Temperature 1.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/18/2004

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

APPENDIX D2
Field Data Sheets

Product Name: Low-Flow System

Date: 2020-01-22 13:59:40

Project Information:

Operator Name Grant Walter
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 642531
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-33
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 22.27 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:42:51	300.02	18.39	4.44	2839.89	2.96	22.38	1.60	99.52
Last 5	13:47:51	600.02	18.40	4.48	2838.59	2.76	22.39	1.31	97.45
Last 5	13:52:51	900.02	18.48	4.46	2834.81	2.23	22.38	1.38	96.17
Last 5	13:57:51	1200.03	18.43	4.51	2837.06	1.40	22.38	1.46	95.62
Last 5									
Variance 0			0.01	0.04	-1.30			-0.29	-2.06
Variance 1			0.09	-0.02	-3.78			0.07	-1.29
Variance 2			-0.05	0.05	2.25			0.08	-0.55

Notes

Two bottles: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B) and one 500-mL plastic bottle for TDS and SO4 (EPA 300.0). Total depth = 38.28 ft.

Grab Samples

MW-33
Grab

Product Name: Low-Flow System

Date: 2020-03-02 11:42:55

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 339797
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 27 ft

Pump placement from TOC 1 ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth 32.50 ft
Screen Length 10 ft
Depth to Water 7.40 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6055124 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:19:03	600.02	15.93	7.11	666.53	7.60	8.00	0.41	51.90
Last 5	11:24:03	900.02	15.93	7.10	661.30	1.47	7.90	0.65	48.56
Last 5	11:29:03	1200.02	15.93	7.10	658.39	1.47	8.00	0.44	45.57
Last 5	11:34:03	1500.02	15.93	7.10	655.91	0.97	7.90	0.42	47.31
Last 5	11:39:03	1800.02	15.95	7.10	653.55	1.11	7.90	0.41	45.43
Variance 0			0.00	-0.00	-2.91			-0.20	-2.98
Variance 1			0.00	-0.00	-2.47			-0.02	1.74
Variance 2			0.02	0.00	-2.36			-0.01	-1.88

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).

Grab Samples

HGWA-1
Grab

Product Name: Low-Flow System

Date: 2020-03-02 10:43:51

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 22 ft

Pump placement from TOC 22 ft

Well Information:

Well ID HGWA-2
Well diameter 2 in
Well Total Depth 27.95 ft
Screen Length 10 ft
Depth to Water 4.91 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5831953 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:22:31	900.03	15.33	5.53	174.25	20.70	4.97	0.35	173.35
Last 5	10:27:31	1200.02	15.23	5.49	173.83	7.23	4.97	0.33	176.62
Last 5	10:32:31	1500.02	15.29	5.46	172.25	7.37	4.97	0.30	180.37
Last 5	10:37:31	1800.02	15.35	5.44	173.27	5.01	4.97	0.31	182.67
Last 5	10:42:31	2100.02	15.54	5.43	172.56	4.96	4.97	0.33	181.74
Variance 0			0.06	-0.03	-1.59			-0.03	3.76
Variance 1			0.06	-0.02	1.02			0.01	2.30
Variance 2			0.19	-0.01	-0.71			0.02	-0.93

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).

Grab Samples

HGWA-2
Grab

Product Name: Low-Flow System

Date: 2020-03-02 12:31:45

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 39 ft

Pump placement from TOC 39 ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth 44.87 ft
Screen Length 10 ft
Depth to Water 4.47 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6590735 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:10:12	300.03	15.84	6.55	402.51	8.72	4.48	0.87	-43.77
Last 5	12:15:12	600.02	16.03	6.67	404.12	3.34	4.48	0.40	-63.37
Last 5	12:20:13	900.80	16.09	6.78	403.85	2.17	4.78	0.33	-71.73
Last 5	12:25:13	1200.80	16.13	6.86	403.76	1.76	4.78	0.31	-76.43
Last 5	12:30:13	1500.80	16.17	6.94	403.39	0.86	4.78	0.33	-79.32
Variance 0			0.06	0.11	-0.28			-0.07	-8.36
Variance 1			0.04	0.09	-0.08			-0.02	-4.70
Variance 2			0.04	0.08	-0.37			0.02	-2.90

Notes

SmarTroll malfunctioned. Restarting Low-Flow purge.

Product Name: Low-Flow System

Date: 2020-03-02 12:49:48

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-3
Well diameter 2 in
Well Total Depth 44.87 ft
Screen Length 10 ft
Depth to Water 4.47 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 12.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:38:16	300.02	16.22	7.03	403.19	0.71	4.78	0.31	-83.40
Last 5	12:43:16	600.02	16.22	7.08	403.23	0.62	4.78	0.29	-84.82
Last 5	12:48:16	900.02	16.21	7.12	402.38	0.62	4.78	0.30	-86.31
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.01	0.05	0.04			-0.02	-1.42
Variance 2			-0.01	0.04	-0.85			0.00	-1.49

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).

Grab Samples

HGWA-3
Grab

Product Name: Low-Flow System

Date: 2020-03-02 14:23:51

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 339797
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 20 ft

Pump placement from TOC 2 ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 25.80 ft
Screen Length 10 ft
Depth to Water 3.80 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5742685 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:02:16	900.02	15.03	5.85	70.99	3.89	4.00	1.76	131.74
Last 5	14:07:16	1200.02	15.04	5.74	71.79	3.96	4.00	1.85	128.20
Last 5	14:12:16	1500.02	14.99	5.67	73.93	3.97	4.00	1.73	125.87
Last 5	14:17:16	1800.02	15.03	5.65	76.17	3.74	4.00	1.73	119.57
Last 5	14:22:16	2100.02	15.04	5.63	76.90	3.91	4.00	1.68	116.80
Variance 0			-0.05	-0.07	2.14			-0.12	-2.33
Variance 1			0.04	-0.03	2.24			0.00	-6.31
Variance 2			0.01	-0.01	0.74			-0.05	-2.77

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).

Grab Samples

HGWA-4
Grab

Product Name: Low-Flow System

Date: 2020-03-02 11:53:51

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 51 ft

Pump placement from TOC 45.52 ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth 50.52 ft
Screen Length 10 ft
Depth to Water 3.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7126346 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:31:53	300.13	16.87	7.46	325.31	3.56	6.05	1.49	-56.03
Last 5	11:36:53	600.02	16.73	7.57	325.09	2.13	6.05	0.74	-95.08
Last 5	11:41:53	900.02	16.87	7.62	325.10	2.17	6.05	0.27	-110.18
Last 5	11:46:53	1200.02	16.93	7.64	324.75	1.12	6.05	0.22	-110.52
Last 5	11:51:53	1500.02	17.00	7.67	324.98	1.22	6.05	0.21	-111.64
Variance 0			0.14	0.05	0.01			-0.47	-15.10
Variance 1			0.06	0.03	-0.36			-0.05	-0.35
Variance 2			0.07	0.03	0.23			-0.01	-1.11

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

HGWA-6

Grab

Product Name: Low-Flow System

Date: 2020-03-03 11:15:32

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 40 ft

Pump placement from TOC 38 ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth 43 ft
Screen Length 10 ft
Depth to Water 13.31 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6635369 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.48 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	10:59:18	300.14	19.94	5.06	2792.12	4.18	23.35	1.41	219.21
Last 5	11:04:18	600.02	20.02	4.84	2791.98	3.40	23.35	0.46	222.69
Last 5	11:09:18	900.02	20.11	4.79	2789.34	2.85	23.35	0.50	218.09
Last 5	11:14:18	1200.02	20.17	4.77	2806.87	1.07	23.35	0.39	215.05
Last 5									
Variance 0			0.09	-0.22	-0.14			-0.95	3.48
Variance 1			0.09	-0.05	-2.64			0.04	-4.60
Variance 2			0.06	-0.02	17.53			-0.11	-3.05

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

HGWC-14

Grab

Product Name: Low-Flow System

Date: 2020-03-03 12:16:48

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 33 ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth 38 ft
Screen Length 10 ft
Depth to Water 11.99 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6412198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 16.2 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	11:54:55	600.02	18.62	6.16	1441.41	5.26	13.34	1.67	153.32
Last 5	11:59:55	900.02	18.74	6.14	1444.71	2.87	13.34	1.04	150.15
Last 5	12:04:55	1200.02	18.86	6.09	1443.61	2.66	13.34	0.78	126.29
Last 5	12:09:55	1500.02	18.88	6.04	1390.53	2.43	13.34	0.68	112.05
Last 5	12:14:55	1800.02	18.91	6.00	1384.09	2.80	13.34	0.74	104.49
Variance 0			0.12	-0.05	-1.11			-0.26	-23.86
Variance 1			0.02	-0.05	-53.08			-0.10	-14.24
Variance 2			0.03	-0.04	-6.44			0.05	-7.56

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

HGWC-15

Grab

Product Name: Low-Flow System

Date: 2020-03-03 12:15:46

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 28 ft

Pump placement from TOC 28 ft

Well Information:

Well ID HGWC-16
Well diameter 2 in
Well Total Depth 33.1 ft
Screen Length 10 ft
Depth to Water 7.46 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6099758 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 33.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	11:52:33	8399.83	18.51	7.10	1055.20	5.57	8.30	0.13	-38.49
Last 5	11:57:33	8699.83	18.55	7.10	1052.90	5.50	8.30	0.13	-38.79
Last 5	12:02:33	8999.83	18.77	7.10	1052.43	5.06	8.27	0.13	-38.86
Last 5	12:07:33	9299.83	18.85	7.10	1053.32	5.11	8.23	0.12	-36.70
Last 5	12:12:32	9599.67	18.90	7.10	1054.50	4.75	8.15	0.12	-36.18
Variance 0			0.22	-0.00	-0.48			-0.00	-0.07
Variance 1			0.08	-0.00	0.89			-0.00	2.16
Variance 2			0.04	-0.00	1.18			-0.00	0.52

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).

Grab Samples

HGWC-16
Grab

Product Name: Low-Flow System

Date: 2020-03-03 13:55:50

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 538243
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 23 ft

Pump placement from TOC 23 ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 13.72 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5876587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:33:47	300.03	19.57	6.48	1637.48	17.30	14.04	0.36	198.06
Last 5	13:38:47	600.07	19.50	6.41	1647.12	14.60	14.04	0.21	220.93
Last 5	13:43:47	900.03	19.49	6.38	1644.25	13.60	14.04	0.17	238.47
Last 5	13:48:47	1200.02	19.14	6.36	1652.35	7.52	14.04	0.17	258.60
Last 5	13:53:47	1500.02	19.07	6.35	1661.54	4.54	14.04	0.17	261.84
Variance 0			-0.02	-0.03	-2.88			-0.04	17.54
Variance 1			-0.35	-0.01	8.11			0.00	20.13
Variance 2			-0.07	-0.01	9.19			-0.00	3.24

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

HGWC-17
Grab

Product Name: Low-Flow System

Date: 2020-03-03 09:04:56

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 25 ft

Pump placement from TOC 22.8 ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 14.19 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5965856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5.4 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:47:18	300.15	15.93	4.90	2044.41	4.28	14.64	0.93	285.86
Last 5	08:52:18	600.03	16.01	4.61	2098.38	2.06	14.64	0.67	293.09
Last 5	08:57:18	900.02	16.04	4.57	2110.46	1.73	14.64	0.60	295.86
Last 5	09:02:18	1200.02	16.06	4.55	2112.31	1.22	14.64	0.58	295.63
Last 5									
Variance 0			0.08	-0.29	53.97			-0.27	7.23
Variance 1			0.03	-0.04	12.08			-0.06	2.77
Variance 2			0.02	-0.01	1.85			-0.02	-0.23

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

HGWC-18
Grab
FD-01
Grab

Product Name: Low-Flow System

Date: 2020-03-03 10:10:53

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 51 ft

Pump placement from TOC 46.8 ft

Well Information:

Well ID MW-21D
Well diameter 2 in
Well Total Depth 51.8 ft
Screen Length 10 ft
Depth to Water 13.05 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3176346 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 10.32 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	09:49:09	600.02	17.36	6.41	2429.84	2.82	13.91	0.41	-94.44
Last 5	09:54:09	900.02	17.41	6.54	2421.84	2.72	13.91	0.36	-99.33
Last 5	09:59:09	1200.02	17.54	6.62	2414.51	2.67	13.91	0.35	-101.14
Last 5	10:04:09	1500.02	17.72	6.68	2408.17	2.80	13.91	0.31	-102.59
Last 5	10:09:09	1800.02	17.72	6.72	2395.64	2.54	13.91	0.31	-104.31
Variance 0			0.13	0.08	-7.33			-0.01	-1.81
Variance 1			0.18	0.06	-6.34			-0.04	-1.45
Variance 2			0.00	0.04	-12.53			0.00	-1.72

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

MW-21D

Grab

Product Name: Low-Flow System

Date: 2020-03-02 16:11:30

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 32.58 ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 9.78 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.6412198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 133.44 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Stabilization									
Last 5	15:49:33	4799.92	16.99	5.99	1282.70	2.87	20.90	1.48	107.69
Last 5	15:54:33	5099.92	17.00	5.98	1283.49	2.85	20.90	1.24	106.75
Last 5	15:59:33	5399.92	17.03	5.98	1283.52	2.79	20.90	1.07	106.32
Last 5	16:04:33	5699.92	17.02	5.97	1282.11	2.66	20.90	0.98	105.86
Last 5	16:09:33	5999.92	17.05	5.97	1281.08	2.81	20.90	0.90	104.66
Variance 0			0.02	-0.01	0.03			-0.17	-0.44
Variance 1			-0.01	-0.01	-1.41			-0.10	-0.46
Variance 2			0.03	-0.00	-1.03			-0.08	-1.20

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

MW-22

Grab

Product Name: Low-Flow System

Date: 2020-03-02 13:28:29

Project Information:

Operator Name Taylor Payne
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 505592
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 66 ft

Pump placement from TOC 57.82 ft

Well Information:

Well ID MW-23D
Well diameter 2 in
Well Total Depth 62.82 ft
Screen Length 10 ft
Depth to Water 12.39 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3845859 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:11:14	300.14	17.35	7.29	1511.05	2.56	12.50	0.36	-133.81
Last 5	13:16:14	600.02	17.56	7.14	1571.32	1.77	12.50	0.26	-124.59
Last 5	13:21:14	900.02	17.50	7.08	1598.05	1.56	12.50	0.23	-113.61
Last 5	13:26:14	1200.02	17.60	7.05	1601.63	1.22	12.50	0.21	-104.02
Last 5									
Variance 0			0.20	-0.15	60.27			-0.09	9.22
Variance 1			-0.05	-0.06	26.73			-0.03	10.98
Variance 2			0.10	-0.03	3.57			-0.02	9.59

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 120-mL plastic bottle for F (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. IV metals (EPA 6020B/7470A).

Grab Samples

MW-23D

Grab

Product Name: Low-Flow System

Date: 2020-03-25 15:53:22

Project Information:

Operator Name Aaron Reeder
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 20 ft

Pump placement from TOC 27 ft

Well Information:

Well ID HGWA-1
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 5.50 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5742685 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:36:15	300.05	16.64	6.94	909.49	15.70	6.60	0.43	18.74
Last 5	15:41:15	600.02	16.65	6.94	914.07	0.42	6.30	0.18	16.90
Last 5	15:46:15	900.02	17.12	6.94	903.54	0.78	6.15	0.18	17.40
Last 5	15:51:15	1200.02	17.28	6.95	890.79	0.87	5.91	0.18	18.21
Last 5									
Variance 0			0.01	-0.00	4.58			-0.25	-1.84
Variance 1			0.47	0.01	-10.52			-0.01	0.50
Variance 2			0.16	0.00	-12.75			0.00	0.80

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-1
Grab

Low-Flow Test Report:

Test Date / Time: 3/25/2020 3:59:10 PM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-2 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18 ft Total Depth: 27.95 ft Initial Depth to Water: 4.49 ft	Pump Type: Bladder Tubing Type: Poly ethylene Pump Intake From TOC: 23 ft Estimated Total Volume Pumped: 7 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.05 ft	Instrument Used: SmartROLL MP Serial Number: 364452
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Test Notes:

Five bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/25/2020 3:59 PM	00:00	5.48 pH	17.01 °C	219.18 µS/cm	0.61 mg/L		179.8 mV	4.49 ft	200.00 ml/min
3/25/2020 4:04 PM	05:00	5.48 pH	17.01 °C	221.17 µS/cm	0.30 mg/L	11.76 NTU	95.9 mV	4.54 ft	200.00 ml/min
3/25/2020 4:09 PM	10:00	5.41 pH	16.94 °C	213.88 µS/cm	0.19 mg/L	10.03 NTU	85.7 mV	4.54 ft	200.00 ml/min
3/25/2020 4:14 PM	15:00	5.39 pH	16.92 °C	212.43 µS/cm	0.16 mg/L	7.86 NTU	82.3 mV	4.54 ft	200.00 ml/min
3/25/2020 4:19 PM	20:00	5.37 pH	16.86 °C	209.59 µS/cm	0.14 mg/L	6.48 NTU	75.6 mV	4.54 ft	200.00 ml/min
3/25/2020 4:24 PM	25:00	5.36 pH	16.87 °C	207.91 µS/cm	0.13 mg/L	5.03 NTU	73.0 mV	4.54 ft	200.00 ml/min
3/25/2020 4:29 PM	30:00	5.36 pH	16.87 °C	207.69 µS/cm	0.12 mg/L	4.45 NTU	64.9 mV	4.54 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-2	Grab

Low-Flow Test Report:

Test Date / Time: 3/25/2020 2:59:21 PM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: HGWA-3 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 35 ft Total Depth: 44.87 ft Initial Depth to Water: 4.09 ft	Pump Type: Bladder Tubing Type: Poly ethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 4 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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Test Notes:

Five bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/25/2020 2:59 PM	00:00	7.39 pH	17.25 °C	507.85 µS/cm	0.92 mg/L		-50.1 mV	4.09 ft	200.00 ml/min
3/25/2020 3:04 PM	05:00	7.39 pH	17.10 °C	509.15 µS/cm	0.38 mg/L	2.05 NTU	-54.6 mV	4.09 ft	200.00 ml/min
3/25/2020 3:09 PM	10:00	7.40 pH	17.10 °C	508.82 µS/cm	0.22 mg/L	1.47 NTU	-62.9 mV	4.09 ft	200.00 ml/min
3/25/2020 3:14 PM	15:00	7.40 pH	17.11 °C	508.34 µS/cm	0.18 mg/L	1.39 NTU	-64.5 mV	4.09 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWA-3	Grab

Product Name: Low-Flow System

Date: 2020-03-26 10:59:27

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 25.80 ft
Screen Length 10 ft
Depth to Water 3.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:45:10	300.03	16.02	5.59	69.62	2.03	4.15	2.16	118.14
Last 5	10:50:10	600.01	16.02	5.46	67.50	1.79	4.17	1.70	130.99
Last 5	10:55:10	900.02	16.02	5.43	68.03	1.76	4.17	1.58	136.18
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.00	-0.13	-2.12			-0.46	12.85
Variance 2			0.00	-0.04	0.53			-0.12	5.19

Notes

Battery died. Replacing battery and restarting purge.

Product Name: Low-Flow System

Date: 2020-03-26 12:49:27

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-4
Well diameter 2 in
Well Total Depth 25.80 ft
Screen Length 10 ft
Depth to Water 3.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 22 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:28:45	3600.99	16.53	5.76	115.54	1.95	4.19	1.36	104.36
Last 5	12:33:45	3900.98	16.79	5.80	126.33	2.38	4.19	1.34	101.70
Last 5	12:38:45	4200.98	16.83	5.77	115.72	2.49	4.19	1.35	100.48
Last 5	12:43:45	4500.98	16.83	5.77	116.12	2.40	4.15	1.37	99.30
Last 5	12:48:45	4800.97	16.87	5.77	115.89	2.40	4.10	1.38	98.55
Variance 0			0.04	-0.03	-10.62			0.01	-1.22
Variance 1			0.00	0.00	0.40			0.02	-1.18
Variance 2			0.04	-0.00	-0.23			0.01	-0.75

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-4
Grab

Product Name: Low-Flow System

Date: 2020-03-26 09:18:50

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-5
Well diameter 2 in
Well Total Depth 27.95 ft
Screen Length 10 ft
Depth to Water 2.82 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:56:41	600.02	16.97	6.34	196.01	8.82	3.52	0.20	57.39
Last 5	09:01:42	900.04	17.03	6.34	204.74	5.91	3.52	0.16	47.09
Last 5	09:06:42	1200.03	17.05	6.36	209.19	4.03	3.65	0.15	41.96
Last 5	09:11:41	1500.01	17.09	6.37	213.16	3.22	3.67	0.13	38.43
Last 5	09:16:41	1800.00	17.18	6.38	218.24	3.31	3.71	0.12	35.71
Variance 0			0.03	0.02	4.45			-0.02	-5.14
Variance 1			0.04	0.01	3.97			-0.02	-3.53
Variance 2			0.09	0.01	5.08			-0.01	-2.72

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-5
Grab

Product Name: Low-Flow System

Date: 2020-03-25 17:06:48

Project Information:

Operator Name Nelson Gunby
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWA-6
Well diameter 2 in
Well Total Depth 50.52 ft
Screen Length 10 ft
Depth to Water 2.30 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:45:06	2100.03	14.59	7.41	363.90	1.10	3.95	0.36	-48.17
Last 5	16:50:06	2400.03	14.48	7.40	364.16	0.71	3.97	0.33	-51.31
Last 5	16:55:06	2700.02	14.21	7.40	365.38	1.82	3.97	0.32	-55.08
Last 5	17:00:06	3000.03	14.32	7.39	364.73	0.98	3.95	0.30	-59.71
Last 5	17:05:06	3300.03	14.26	7.39	363.97	0.71	3.97	0.30	-63.02
Variance 0			-0.27	-0.00	1.21			-0.01	-3.77
Variance 1			0.11	-0.01	-0.64			-0.02	-4.63
Variance 2			-0.07	-0.01	-0.76			-0.01	-3.31

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWA-6
Grab

Product Name: Low-Flow System

Date: 2020-03-30 09:53:13

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-14
Well diameter 2 in
Well Total Depth 43 ft
Screen Length 10 ft
Depth to Water 23.35 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:31:35	1500.00	19.58	4.53	2913.45	0.76	23.40	0.54	219.02
Last 5	09:36:35	1800.00	19.68	4.55	2912.14	0.66	23.40	0.51	225.95
Last 5	09:41:35	2100.00	19.76	4.56	2910.85	0.67	23.40	0.50	217.48
Last 5	09:46:35	2400.00	19.72	4.56	2912.23	0.64	23.40	0.53	216.21
Last 5	09:51:35	2699.99	19.73	4.57	2912.97	0.55	23.40	0.54	214.88
Variance 0			0.07	0.01	-1.29			-0.01	-8.47
Variance 1			-0.03	0.00	1.38			0.03	-1.28
Variance 2			0.00	0.01	0.74			0.00	-1.32

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-14

Grab

FD-02

Grab

Product Name: Low-Flow System

Date: 2020-03-26 14:43:54

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-15
Well diameter 2 in
Well Total Depth 38 ft
Screen Length 10 ft
Depth to Water 7.86 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:22:20	600.02	18.70	6.14	1495.80	1.80	8.43	1.09	130.74
Last 5	14:27:20	900.02	18.72	6.10	1494.54	3.37	8.43	0.80	127.99
Last 5	14:32:20	1200.02	18.74	6.07	1494.04	3.94	8.43	0.61	125.83
Last 5	14:37:20	1500.01	18.66	6.05	1497.91	3.94	8.43	0.63	122.64
Last 5	14:42:20	1800.00	18.61	6.03	1494.40	3.05	8.43	0.59	119.62
Variance 0			0.03	-0.03	-0.50			-0.19	-2.16
Variance 1			-0.08	-0.02	3.88			0.02	-3.19
Variance 2			-0.05	-0.02	-3.51			-0.04	-3.02

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-15
Grab

Low-Flow Test Report:

Test Date / Time: 3/30/2020 9:50:18 AM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: HGWC-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 23 ft Total Depth: 33.1 ft Initial Depth to Water: 6.66 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 28 ft Estimated Total Volume Pumped: 19.5 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.78 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
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Test Notes:

Five bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
3/30/2020 9:50 AM	00:00	7.15 pH	17.94 °C	1,080.4 µS/cm	1.16 mg/L		-47.0 mV	6.66 ft	200.00 ml/min
3/30/2020 9:59 AM	08:48	7.13 pH	18.17 °C	1,072.5 µS/cm	0.23 mg/L	57.30 NTU	-75.7 mV	7.44 ft	200.00 ml/min
3/30/2020 10:02 AM	11:56	7.13 pH	18.35 °C	1,069.2 µS/cm	0.18 mg/L		-74.4 mV	7.44 ft	200.00 ml/min
3/30/2020 10:07 AM	16:56	7.12 pH	18.57 °C	1,067.2 µS/cm	0.15 mg/L	64.70 NTU	-72.6 mV	7.44 ft	200.00 ml/min
3/30/2020 10:12 AM	21:56	7.12 pH	18.21 °C	1,067.2 µS/cm	0.14 mg/L	55.20 NTU	-67.1 mV	7.44 ft	200.00 ml/min
3/30/2020 10:17 AM	26:56	7.12 pH	18.11 °C	1,069.0 µS/cm	0.14 mg/L	19.30 NTU	-70.1 mV	7.44 ft	200.00 ml/min
3/30/2020 10:22 AM	31:56	7.11 pH	18.70 °C	1,064.6 µS/cm	0.13 mg/L	23.60 NTU	-67.1 mV	7.44 ft	200.00 ml/min
3/30/2020 10:27 AM	36:56	7.11 pH	18.83 °C	1,064.8 µS/cm	0.11 mg/L	12.80 NTU	-65.3 mV	7.44 ft	200.00 ml/min
3/30/2020 10:32 AM	41:56	7.11 pH	18.60 °C	1,066.8 µS/cm	0.14 mg/L	22.90 NTU	-63.9 mV	7.44 ft	200.00 ml/min
3/30/2020 10:37 AM	46:56	7.10 pH	18.75 °C	1,066.6 µS/cm	0.12 mg/L	11.30 NTU	-63.1 mV	7.46 ft	200.00 ml/min
3/30/2020 10:42 AM	51:56	7.10 pH	18.70 °C	1,068.4 µS/cm	0.11 mg/L	12.30 NTU	-64.2 mV	7.48 ft	200.00 ml/min
3/30/2020 10:47 AM	56:56	7.10 pH	18.66 °C	1,069.0 µS/cm	0.11 mg/L	10.12 NTU	-62.5 mV	7.50 ft	200.00 ml/min
3/30/2020 10:52 AM	01:01:56	7.10 pH	18.47 °C	1,070.6 µS/cm	0.12 mg/L	8.38 NTU	-63.8 mV	7.51 ft	200.00 ml/min
3/30/2020 10:57 AM	01:07:16	7.10 pH	18.92 °C	1,068.2 µS/cm	0.10 mg/L	7.33 NTU	-66.5 mV	7.51 ft	200.00 ml/min

3/30/2020 11:02 AM	01:12:16	7.10 pH	19.12 °C	1,070.6 µS/cm	0.11 mg/L	6.59 NTU	-62.1 mV	7.51 ft	200.00 ml/min
3/30/2020 11:07 AM	01:17:16	7.09 pH	19.23 °C	1,069.5 µS/cm	0.11 mg/L	5.98 NTU	-62.5 mV	7.51 ft	200.00 ml/min
3/30/2020 11:12 AM	01:22:16	7.09 pH	19.19 °C	1,070.4 µS/cm	0.12 mg/L	5.43 NTU	-61.7 mV	7.51 ft	200.00 ml/min
3/30/2020 11:17 AM	01:27:16	7.09 pH	19.37 °C	1,072.2 µS/cm	0.11 mg/L	5.82 NTU	-60.4 mV	7.44 ft	200.00 ml/min
3/30/2020 11:22 AM	01:32:16	7.09 pH	19.41 °C	1,066.4 µS/cm	0.11 mg/L	4.11 NTU	-61.0 mV	7.44 ft	200.00 ml/min

Samples

Sample ID:	Description:
HGWC-16	Grab

Product Name: Low-Flow System

Date: 2020-03-31 09:00:56

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-17
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 14.17 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:39:16	300.08	17.63	6.28	1863.52	2.86	14.65	0.20	91.73
Last 5	08:44:15	598.23	17.65	6.28	1860.25	1.39	14.65	0.14	75.74
Last 5	08:49:15	898.22	17.65	6.27	1862.58	1.23	14.65	0.12	68.15
Last 5	08:54:15	1198.21	17.63	6.28	1848.74	0.92	14.65	0.12	63.20
Last 5	08:59:15	1498.27	17.65	6.28	1847.92	0.74	14.67	0.11	59.58
Variance 0			-0.00	-0.00	2.33			-0.02	-7.58
Variance 1			-0.02	0.00	-13.83			-0.01	-4.95
Variance 2			0.02	-0.00	-0.83			-0.01	-3.62

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-17
Grab

Product Name: Low-Flow System

Date: 2020-03-31 13:15:32

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID HGWC-18
Well diameter 2 in
Well Total Depth 27.8 ft
Screen Length 10 ft
Depth to Water 14.79 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:58:36	300.08	15.80	4.43	2190.45	0.25	14.96	0.75	207.66
Last 5	13:03:36	600.02	15.75	4.43	2207.06	0.25	14.99	0.67	203.50
Last 5	13:08:36	900.02	15.71	4.43	2212.08	0.07	14.99	0.64	201.55
Last 5	13:13:38	1202.03	15.75	4.43	2211.66	0.00	14.99	0.62	200.55
Last 5									
Variance 0			-0.05	-0.00	16.61			-0.08	-4.16
Variance 1			-0.04	-0.00	5.02			-0.03	-1.95
Variance 2			0.04	0.00	-0.42			-0.02	-1.00

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

HGWC-18
Grab

Low-Flow Test Report:

Test Date / Time: 4/1/2020 11:14:00 AM

Project: Plant Hammond (3)

Operator Name: Aaron Reeder

Location Name: MW-21D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 41.8 ft Total Depth: 51.8 ft Initial Depth to Water: 14.84 ft	Pump Type: Alexis Peri Tubing Type: Poly Pump Intake From TOC: 46 ft Estimated Total Volume Pumped: 10000 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.39 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Five bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Weather Conditions:

Sunny and windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 5	+/- 10	+/- 5	
4/1/2020 11:14 AM	00:00	7.15 pH	17.91 °C	1,951.2 µS/cm	5.05 mg/L	5.64 NTU	-40.2 mV	14.84 ft	200.00 ml/min
4/1/2020 11:19 AM	05:00	7.01 pH	17.46 °C	2,189.9 µS/cm	1.50 mg/L	4.59 NTU	-76.2 mV	15.21 ft	200.00 ml/min
4/1/2020 11:24 AM	10:00	7.03 pH	17.46 °C	2,172.1 µS/cm	1.43 mg/L	2.88 NTU	-95.5 mV	15.22 ft	200.00 ml/min
4/1/2020 11:29 AM	15:00	6.93 pH	17.46 °C	2,201.5 µS/cm	1.62 mg/L	1.12 NTU	-118.1 mV	15.22 ft	200.00 ml/min
4/1/2020 11:34 AM	20:00	6.90 pH	17.67 °C	2,214.4 µS/cm	2.91 mg/L	1.05 NTU	-112.7 mV	15.22 ft	200.00 ml/min
4/1/2020 11:39 AM	25:00	6.90 pH	17.63 °C	2,191.7 µS/cm	0.94 mg/L	0.65 NTU	-111.2 mV	15.23 ft	200.00 ml/min
4/1/2020 11:44 AM	30:00	6.90 pH	17.54 °C	2,190.3 µS/cm	0.64 mg/L	0.59 NTU	-110.2 mV	15.23 ft	200.00 ml/min
4/1/2020 11:49 AM	35:00	6.90 pH	17.55 °C	2,184.5 µS/cm	0.55 mg/L	0.58 NTU	-80.3 mV	15.23 ft	200.00 ml/min
4/1/2020 11:54 AM	40:00	6.90 pH	17.63 °C	2,129.0 µS/cm	0.63 mg/L	0.34 NTU	-108.8 mV	15.23 ft	200.00 ml/min
4/1/2020 11:59 AM	45:00	6.90 pH	17.57 °C	2,085.5 µS/cm	0.71 mg/L	0.79 NTU	-108.8 mV	15.23 ft	200.00 ml/min

4/1/2020 12:04 PM	50:00	6.90 pH	17.64 °C	2,110.1 µS/cm	0.61 mg/L	0.60 NTU	-78.2 mV	15.23 ft	200.00 ml/min
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Samples

Sample ID:	Description:
MW-21D	Grab

Product Name: Low-Flow System

Date: 2020-03-27 15:11:58

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 5.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:01:40	300.09	18.61	5.74	1536.49	0.67	14.62	1.37	64.23
Last 5	15:06:40	600.05	18.74	5.74	1538.20	1.04	14.72	1.27	61.70
Last 5	15:11:40	900.02	18.73	5.74	1535.58	--	--	1.16	64.49
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.13	-0.00	1.71			-0.11	-2.52
Variance 2			-0.01	-0.00	-2.62			-0.10	2.79

Notes

iPad overheated. Restarting InSitu app.

Product Name: Low-Flow System

Date: 2020-03-27 16:05:19

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 646777
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-22
Well diameter 2 in
Well Total Depth 37.58 ft
Screen Length 10 ft
Depth to Water 5.55 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 17 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:44:20	1803.02	19.29	5.72	1530.06	0.68	14.95	0.66	60.19
Last 5	15:49:20	2103.02	19.37	5.71	1524.40	0.59	15.00	0.59	58.90
Last 5	15:54:21	2404.01	19.86	5.71	1517.33	0.38	14.98	0.54	56.80
Last 5	15:59:21	2704.02	19.81	5.71	1519.54	0.42	14.98	0.50	55.90
Last 5	16:04:21	3004.01	19.95	5.71	1515.67	0.60	14.98	0.49	55.89
Variance 0			0.49	0.00	-7.07			-0.05	-2.10
Variance 1			-0.04	0.00	2.21			-0.03	-0.90
Variance 2			0.13	-0.00	-3.87			-0.01	-0.01

Notes

Five bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B).

Grab Samples

MW-22
Grab

Low-Flow Test Report:

Test Date / Time: 4/1/2020 11:17:11 AM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: MW-23D Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 53 ft Total Depth: 62.79 ft Initial Depth to Water: 13.64 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 58 ft Estimated Total Volume Pumped: 4 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.12 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
--	--	--

Test Notes:

Five bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
4/1/2020 11:17 AM	00:00	6.86 pH	16.48 °C	1,601.1 µS/cm	0.93 mg/L		-0.9 mV	13.64 ft	200.00 ml/min
4/1/2020 11:22 AM	05:00	6.82 pH	16.95 °C	1,700.2 µS/cm	0.41 mg/L	1.68 NTU	-3.7 mV	13.76 ft	200.00 ml/min
4/1/2020 11:27 AM	10:00	6.81 pH	17.03 °C	1,727.4 µS/cm	0.29 mg/L	1.71 NTU	-2.8 mV	13.76 ft	200.00 ml/min
4/1/2020 11:32 AM	15:00	6.80 pH	17.19 °C	1,747.0 µS/cm	0.25 mg/L	1.56 NTU	3.1 mV	13.76 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-23D	Grab

Low-Flow Test Report:

Test Date / Time: 4/1/2020 9:31:20 AM

Project: Plant Hammond

Operator Name: Chad Russo

Location Name: MW-33 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 28 ft Total Depth: 37.93 ft Initial Depth to Water: 21.1 ft	Pump Type: Peristaltic Tubing Type: Poly ethylene Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 6 liter Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.05 ft	Instrument Used: SmarTROLL MP Serial Number: 364452
--	--	--

Test Notes:

Five bottles: Two 1-L plastic bottles with HNO₃ for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO₄ (EPA 300.0); and one 250-mL plastic bottle with HNO₃ for App. III and IV metals (EPA 6020B).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 5 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
4/1/2020 9:31 AM	00:00	4.33 pH	16.52 °C	2,802.3 µS/cm	0.46 mg/L		356.7 mV	21.10 ft	200.00 ml/min
4/1/2020 9:36 AM	05:00	4.35 pH	16.61 °C	2,787.5 µS/cm	0.47 mg/L	3.62 NTU	335.9 mV	21.15 ft	200.00 ml/min
4/1/2020 9:41 AM	10:00	4.35 pH	16.61 °C	2,794.5 µS/cm	0.46 mg/L	2.76 NTU	325.5 mV	21.13 ft	200.00 ml/min
4/1/2020 9:46 AM	15:00	4.35 pH	16.65 °C	2,788.1 µS/cm	0.86 mg/L	2.55 NTU	324.6 mV	21.13 ft	200.00 ml/min
4/1/2020 9:51 AM	20:00	4.34 pH	16.87 °C	2,786.2 µS/cm	0.79 mg/L	2.20 NTU	316.5 mV	21.15 ft	200.00 ml/min
4/1/2020 9:56 AM	25:00	4.35 pH	16.70 °C	2,774.6 µS/cm	0.70 mg/L	2.15 NTU	313.5 mV	21.15 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-33	Grab

Product Name: Low-Flow System

Date: 2020-06-17 09:29:33

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-21D
Well diameter 2 in
Well Total Depth 52.29 ft
Screen Length 10 ft
Depth to Water 17.58 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 9.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:06:33	1200.52	18.52	6.32	2436.48	12.50	17.82	0.14	-2.77
Last 5	09:11:33	1500.52	18.52	6.37	2440.27	8.03	17.82	0.13	-15.33
Last 5	09:16:33	1800.52	18.52	6.40	2440.91	6.06	17.82	0.12	-23.63
Last 5	09:21:33	2100.52	18.55	6.44	2439.17	5.18	17.82	0.11	-28.15
Last 5	09:26:33	2400.45	18.64	6.47	2439.31	4.95	17.82	0.10	-31.58
Variance 0			-0.01	0.04	0.64			-0.01	-8.30
Variance 1			0.03	0.03	-1.74			-0.01	-4.52
Variance 2			0.09	0.03	0.13			-0.01	-3.44

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-21D
Grab

Product Name: Low-Flow System

Date: 2020-06-17 17:12:35

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35 ft

Pump placement from TOC 35 ft

Well Information:

Well ID MW-33
Well diameter 2 in
Well Total Depth 38.61 ft
Screen Length 10 ft
Depth to Water 24.87 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2462198 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:08:43	900.02	21.02	4.44	2734.47	21.60	24.92	0.36	206.08
Last 5	16:13:43	1200.02	20.96	4.40	2740.18	12.40	24.92	0.31	215.18
Last 5	16:18:43	1500.02	20.93	4.39	2745.83	8.04	24.92	0.28	220.76
Last 5	16:23:43	1800.02	20.93	4.36	2742.62	8.77	24.92	0.29	226.35
Last 5	16:28:43	2100.02	20.87	4.36	2743.00	4.64	24.92	0.29	224.71
Variance 0			-0.03	-0.02	5.65			-0.03	5.58
Variance 1			-0.00	-0.03	-3.21			0.01	5.59
Variance 2			-0.06	0.00	0.37			-0.00	-1.64

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-33
Grab

Product Name: Low-Flow System

Date: 2020-06-18 18:02:07

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-34D
Well diameter 2 in
Well Total Depth 73 ft
Screen Length 10 ft
Depth to Water 29.8 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:39:40	9015.69	21.82	6.95	2835.74	10.75	30.00	0.02	151.88
Last 5	17:44:40	9315.66	21.60	6.95	2845.46	10.65	30.00	0.02	152.60
Last 5	17:49:40	9615.66	21.79	6.95	2838.53	10.00	30.00	0.02	152.61
Last 5	17:54:40	9915.66	21.79	6.95	2836.10	9.28	30.00	0.02	152.44
Last 5	17:59:40	10215.63	21.71	6.95	2830.14	8.88	30.00	0.02	151.43
Variance 0			0.19	-0.00	-6.93			0.00	0.02
Variance 1			0.00	0.00	-2.43			-0.00	-0.17
Variance 2			-0.08	0.00	-5.96			-0.00	-1.01

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-34D
Grab

Product Name: Low-Flow System

Date: 2020-06-18 12:33:34

Project Information:

Operator Name Chad Russo
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 643819
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 18 ft

Pump placement from TOC 18 ft

Well Information:

Well ID MW-35
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 8.38 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1703416 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:26:48	900.02	19.59	5.65	2562.04	6.66	9.89	2.29	144.93
Last 5	11:31:48	1200.03	19.68	5.63	2575.96	5.85	9.83	1.49	130.09
Last 5	11:36:48	1500.02	19.28	5.52	2618.03	5.70	10.01	0.83	87.49
Last 5	11:41:48	1800.02	19.51	5.48	2633.95	3.35	10.00	0.83	80.71
Last 5	11:46:48	2100.02	19.58	5.46	2636.86	1.97	9.94	0.63	76.75
Variance 0			-0.40	-0.10	42.07			-0.66	-42.60
Variance 1			0.22	-0.04	15.92			-0.00	-6.78
Variance 2			0.07	-0.02	2.91			-0.20	-3.96

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D). Total depth: 24.33'

Grab Samples

MW-35
Grab

Product Name: Low-Flow System

Date: 2020-06-18 10:04:01

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-36D
Well diameter 2 in
Well Total Depth 59.19 ft
Screen Length 10 ft
Depth to Water 17.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:42:01	2100.95	19.82	7.47	378.42	8.98	18.88	0.09	44.37
Last 5	09:47:01	2400.95	19.90	7.40	392.25	7.28	18.88	0.09	20.58
Last 5	09:52:01	2700.95	19.99	7.37	392.45	6.75	18.88	0.07	27.57
Last 5	09:57:01	3000.95	20.10	7.36	392.18	6.48	18.88	0.07	48.57
Last 5	10:02:01	3300.95	20.13	7.35	392.53	4.52	18.88	0.06	77.12
Variance 0			0.08	-0.03	0.20			-0.02	6.99
Variance 1			0.11	-0.01	-0.27			-0.01	20.99
Variance 2			0.03	-0.00	0.35			-0.00	28.55

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

Grab Samples

MW-36D
Grab

Product Name: Low-Flow System

Date: 2020-06-17 10:56:27

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-37D
Well diameter 2 in
Well Total Depth 78.50 ft
Screen Length 10 ft
Depth to Water 17.8 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 40 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:34:26	900.36	19.50	7.37	1205.85	4.51	23.33	0.13	-58.08
Last 5	10:39:26	1200.36	19.39	7.40	1206.24	3.20	23.91	0.15	-59.16
Last 5	10:44:26	1500.36	19.19	7.42	1209.18	4.16	24.55	0.15	-59.97
Last 5	10:49:26	1800.36	19.28	7.43	1208.76	4.26	25.14	0.14	-60.38
Last 5	10:54:26	2100.36	19.82	7.44	1206.88	--	--	0.13	-62.24
Variance 0			-0.20	0.02	2.94			0.00	-0.81
Variance 1			0.09	0.01	-0.43			-0.00	-0.41
Variance 2			0.53	0.01	-1.88			-0.01	-1.86

Notes

Drawdown is 0.6 ft per minute. Initiating well evacuation, will sample tomorrow.

Product Name: Low-Flow System

Date: 2020-06-18 13:34:48

Project Information:

Operator Name Shawn Lin
Company Name Geosyntec Consultants
Project Name GP-Plant Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 597519
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID MW-37D
Well diameter 2 in
Well Total Depth 78.5 ft
Screen Length 10 ft
Depth to Water 18.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 20 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:14:14	300.03	19.97	7.78	1314.90	44.50	43.80	13.37	166.43
Last 5									
Last 5									
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.00	0.00			0.00	0.00
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

Seven bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C); one 250-mL plastic bottle for Cl, F, SO4 (EPA 300.0); one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B); one 250-mL plastic bottle for Alkalinity (2320B); and one 125-mL plastic bottle with ZnAc + NaOH for sulfide (4500S2D).

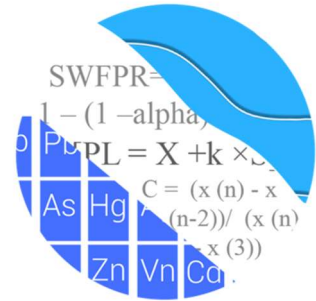
Grab Samples

MW-37D
Grab
MW-37D
Grab, filtered

APPENDIX E

Statistical Analyses

GROUNDWATER STATS CONSULTING



August 26, 2020

Southern Company Services
Attn: Ms. Kristen Jurinko
241 Ralph McGill Blvd NE, Bin 10160
Atlanta, Georgia 30308

Re: Plant Hammond Ash Pond 2 (AP-2)
Statistical Analysis – March 2020 Sample Event

Dear Ms. Jurinko,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analysis of groundwater data for the March 2020 quality for Georgia Power Company's Plant Hammond AP-2. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10 and follows the USEPA Unified Guidance (2009).

Sampling began for the CCR program in 2016, and at least 8 background samples have been collected at each of the groundwater monitoring wells. The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient well:** HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWA-6
- **Downgradient wells:** HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Additionally, sampling began in March 2019 for the majority of the following delineation wells and piezometers, which are analyzed in an addendum report. Exceptions to this include piezometer MW-33 where sampling began in January 2020. The results of those findings are discussed in the Groundwater Monitoring Report prepared by Geosyntec:

- **Delineation wells & Piezometers:** MW-21D, MW-22, MW-23D, MW-33

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting. The statistical analysis was performed according to the groundwater data screening that was performed in April 2018 by GSC and approved by Dr. Cameron, PhD Statistician with MacStat Consulting and primary author of the USEPA Unified Guidance.

The CCR program consists of the following constituents:

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) – antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of well/constituent pairs with 100% nondetects follows this letter. A substitution of the most recent reporting limit is used for nondetect data. Additionally, the following constituents did not require statistical analyses due to no detections above the reporting limit: antimony and mercury.

Time series plots for Appendix III and IV parameters at all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. No values were flagged as outliers (Figure C).

In earlier analyses, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided to demonstrate that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations.

Statistical Methods – Appendix III Parameters:

- Interwell Prediction Limits combined with 1-of-2 resamples for: boron, calcium, chloride, fluoride, pH, sulfate, and TDS

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. While the false positive rate associated with the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated with upgradient well data during each event after careful screening for any new outliers. In some cases, an earlier portion of data may require deselection prior to construction of limits to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs. When this step is required a summary of any adjusted records will be provided.

Statistical Evaluation of Appendix III Parameters – March 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed for all Appendix III parameters using all historical upgradient well data through March 2020 (Figure D). Downgradient measurements were compared to these interwell background limits. Interwell prediction limits use all available upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no further action is necessary. If no resample is collected, the initial exceedance is automatically confirmed.

When the March 2020 compliance data from downgradient wells were compared to interwell prediction limits, several exceedances were noted. A summary table of these findings is provided along with the prediction limits (Figure D).

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E). Upgradient well data are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells to identify whether similar patterns exist upgradient of the site which is an indication of natural variability in groundwater unrelated to practices at the site. A summary of the trend test results follows this letter. Statistically significant trends were noted for the following well/constituent pairs:

Increasing trends:

- Boron: HGWC-16
- Calcium: HGWC-15, HGWC-16, HGWC-17
- Chloride: HGWC-16, HGWC-17
- Sulfate: HGWA-3 (upgradient)
- TDS: HGWC-16, HGWC-17

Decreasing trends:

- Chloride: HGWA-4 (upgradient), HGWC-14

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the interwell case, newer data will be included in background following each event, provided that upgradient well data are reviewed for outliers and trending data. In some cases, the earlier portion of data may require deselecting prior to construction of limits in order to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Statistical Evaluation of Appendix IV Parameters – March 2020

Interwell tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data for Appendix IV constituents (Figure F). When varying detection limits were present in upgradient wells, all nondetects are substituted with the most recent reporting limit. In the case of lithium, the historical reporting limit was 0.05 mg/L which is higher than the CCR-rule specified level of 0.04 mg/L. Therefore, all nondetects were substituted with 0.03 mg/L. Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for barium, fluoride, molybdenum and combined radium226 + 228. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a) (Figure G).

As described in 40 CFR §257.95(h) (1-3), the GWPS is:

- The maximum contaminant level (MCL) established under §141.62 and §141.66 of this title
- Where an MCL has not been established for a constituent, CCR-rule specified levels have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), and molybdenum (0.100 mg/L)
- The respective background level for a constituent when the background level is higher than the MCL or Federal CCR Rule identified GWPS

On July 30, 2018, USEPA revised the Federal CCR Rule updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR §257.95(h)(2). Georgia EPD has

not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above Georgia EPD Rule requirements and the CCR Rule, State and Federal GWPS were established for statistical comparison of Appendix IV constituents for the March 2020 sample event (Figure G).

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in each downgradient well for the State and Federal requirements (Figures H and I, respectively). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. The confidence intervals for the State were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a), and the confidence intervals for the Federal were prepared according to the CCR Rule. Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. A summary of the confidence intervals follows this letter.

The following confidence interval exceedances were identified:

State

- Cobalt: HGWC-18

Federal

- Cobalt: HGWC-18

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Hammond AP-2. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,



Kristina L. Rayner
Groundwater Statistician

100% Nondetects

Date: 6/4/2020 11:38 AM

Plant Hammond Client: Southern Company Data: Hammond AP-2

Antimony (mg/L)

HGWA-2, HGWA-4, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Arsenic (mg/L)

HGWA-4, HGWA-6

Beryllium (mg/L)

HGWA-1, HGWA-3, HGWA-5, HGWA-6, HGWC-15, HGWC-16, HGWC-17

Cadmium (mg/L)

HGWA-1, HGWA-3, HGWA-4, HGWA-5, HGWA-6, HGWC-16

Cobalt (mg/L)

HGWA-3, HGWA-6

Lithium (mg/L)

HGWC-14

Mercury (mg/L)

HGWA-3, HGWA-5, HGWC-14, HGWC-15, HGWC-16, HGWC-17

Molybdenum (mg/L)

HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-5, HGWC-14, HGWC-16, HGWC-17, HGWC-18

Selenium (mg/L)

HGWA-1, HGWA-2, HGWA-3, HGWA-4, HGWA-6

Thallium (mg/L)

HGWA-1, HGWA-3, HGWA-4, HGWA-5, HGWC-15, HGWC-16

Interwell Prediction Limit Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Interwell Prediction Limit Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-15	7.69	4.9	3/26/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-16	7.69	4.9	3/30/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-17	7.69	4.9	3/31/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-14	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-15	0.36	n/a	3/26/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-16	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-17	0.36	n/a	3/31/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Trend Test Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP

Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0007668	9	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001791	45	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007135	-19	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001746	-37	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0004406	-14	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.001046	-21	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-14	-0.2096	-5	-48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-15	0.1514	41	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-17	0.3065	30	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-18	-0.0127	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-1 (bg)	6.687	43	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.1393	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	3.531	39	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.131	-29	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.6566	-14	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.6134	15	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-14	-5.896	-7	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-18	16.36	31	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	1.469	22	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.1372	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	-4	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.09359	-18	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.05984	-20	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-15	-21.33	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-18	-29.64	-33	-48	No	14	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.04693	-50	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.054	-32	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.009832	-11	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.2248	-59	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.04139	-35	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.02795	-29	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-14	0.04005	42	63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-18	-0.03755	-48	-63	No	17	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-1 (bg)	-0.002837	-12	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-2 (bg)	0	29	63	No	17	58.82	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-3 (bg)	0.04945	43	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-4 (bg)	0.03355	49	63	No	17	52.94	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-5 (bg)	-0.003266	-16	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-6 (bg)	0.03185	42	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-18	0.009528	7	63	No	17	5.882	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.572	44	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.136	35	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-37	-48	No	14	14.29	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.5503	22	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-14	88.31	32	48	No	14	0	n/a	n/a	0.01	NP

Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Sulfate (mg/L)	HGWC-15	32.25	24	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-16	1.071	21	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-17	49.32	42	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-18	26.39	30	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	19.47	27	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.376	-14	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.137	9	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-34	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-5.489	-26	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	2.317	20	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-238.3	-48	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-15	-35.1	-16	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-18	0	0	48	No	14	0	n/a	n/a	0.01	NP

Tolerance Limit Summary Table - Appendix IV

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	69	n/a	n/a	94.2	n/a	n/a	0.02904	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	96	n/a	n/a	79.17	n/a	n/a	0.007269	NP Inter(NDs)
Barium (mg/L)	n/a	0.22	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	84	n/a	n/a	83.33	n/a	n/a	0.01345	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	84	n/a	n/a	86.9	n/a	n/a	0.01345	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	96	n/a	n/a	67.71	n/a	n/a	0.007269	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Fluoride (mg/L)	n/a	0.36	102	n/a	n/a	34.31	n/a	n/a	0.005343	NP Inter(normality)
Lead (mg/L)	n/a	0.005	84	n/a	n/a	80.95	n/a	n/a	0.01345	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	96	n/a	n/a	27.08	n/a	n/a	0.007269	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	66	n/a	n/a	87.88	n/a	n/a	0.03387	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	84	n/a	n/a	97.62	n/a	n/a	0.01345	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	96	n/a	n/a	98.96	n/a	n/a	0.007269	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	96	n/a	n/a	97.92	n/a	n/a	0.007269	NP Inter(NDs)

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

*MCL = Maximum Contaminant Level

*CCR = Coal Combustion Residuals

*GWPS = Groundwater Protection Standard

State Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.005	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.005	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.005	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.005	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.005	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.03	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.03	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.03	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.01	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)

State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No 16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No 16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No 16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No 16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No 16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No 16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No 16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No 16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No 16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No 16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

Federal Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.015	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.015	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.015	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.015	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.015	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.04	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.04	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.04	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.04	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.04	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.1	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)

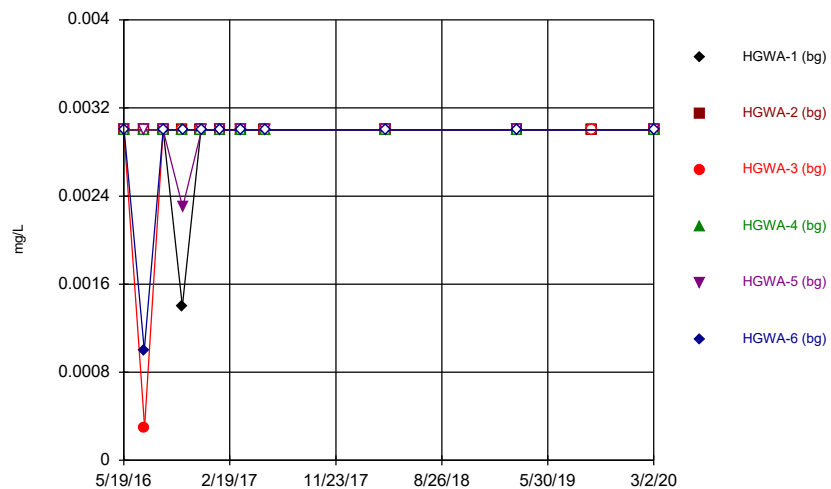
Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No	16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No	16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No	16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No	16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No	16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No	16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No	16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

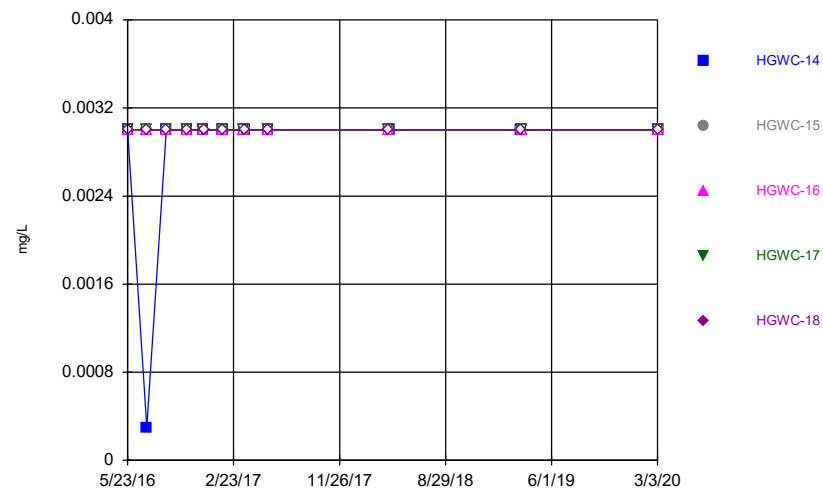
FIGURE A.

Time Series



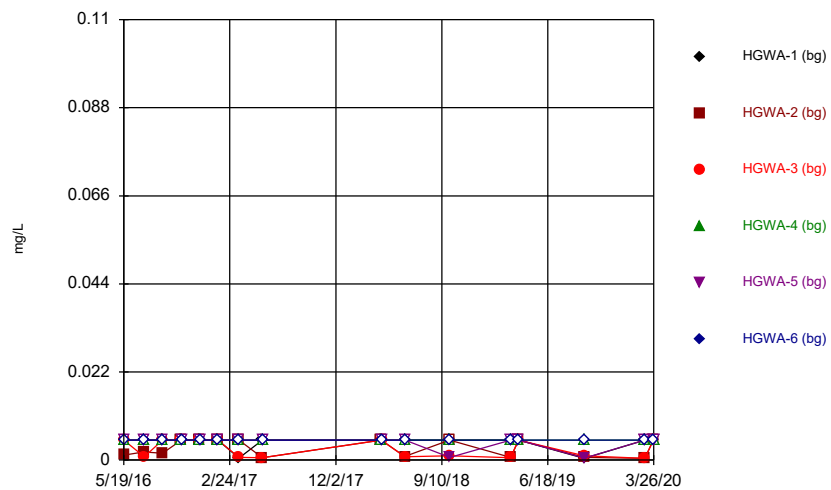
Constituent: Antimony Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



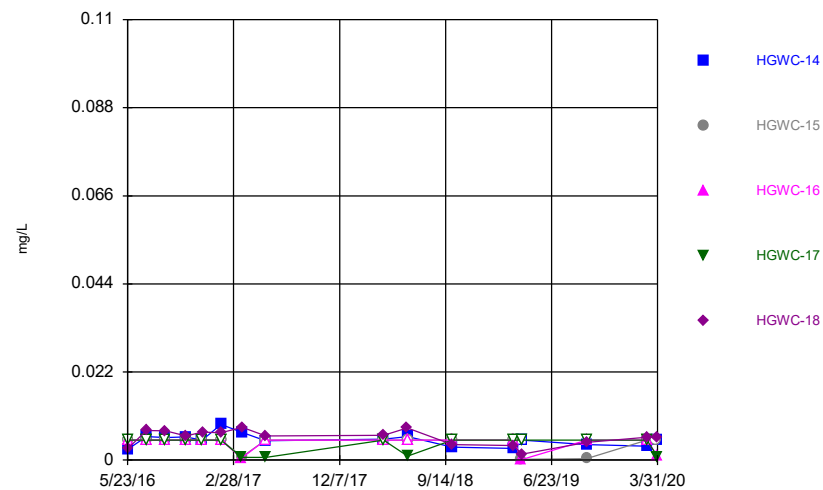
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



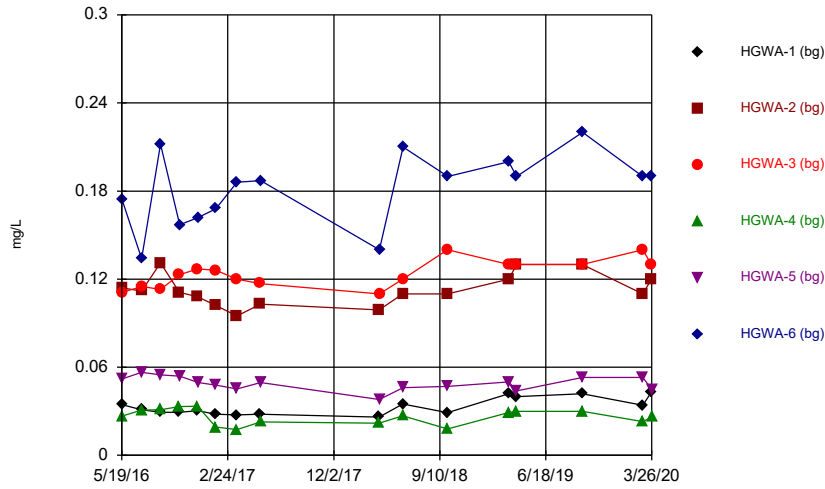
Constituent: Arsenic Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Arsenic Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

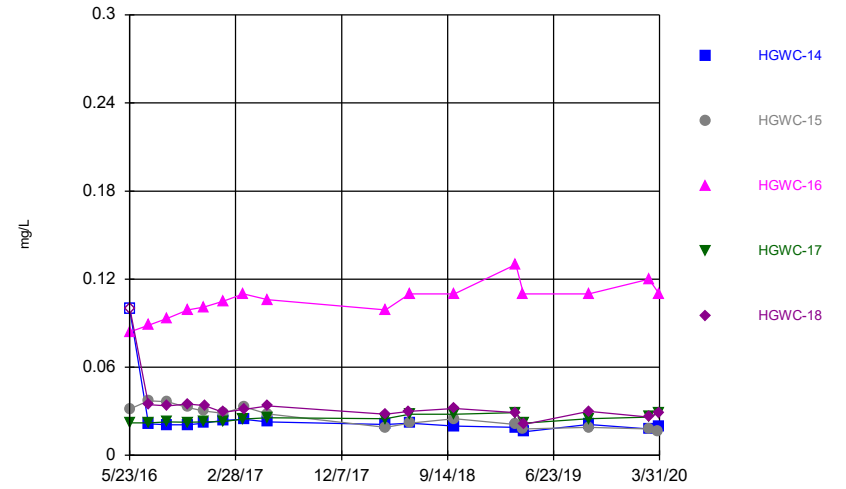
Time Series



Constituent: Barium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

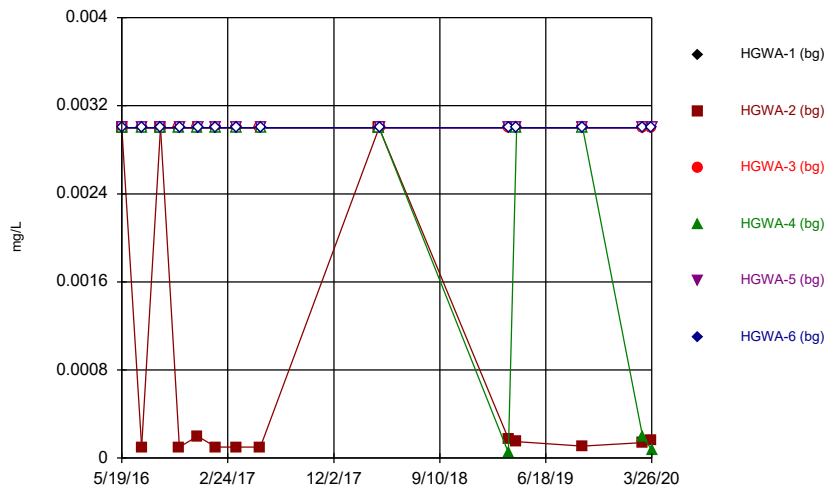
Time Series



Constituent: Barium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

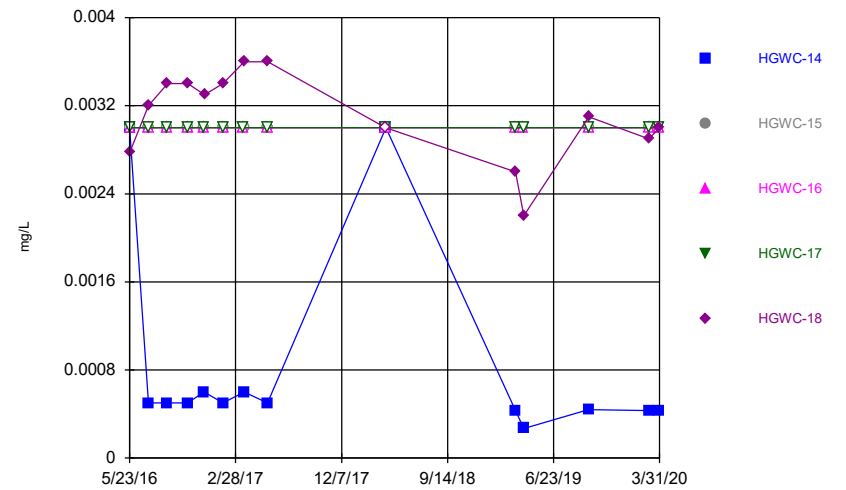
Time Series



Constituent: Beryllium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

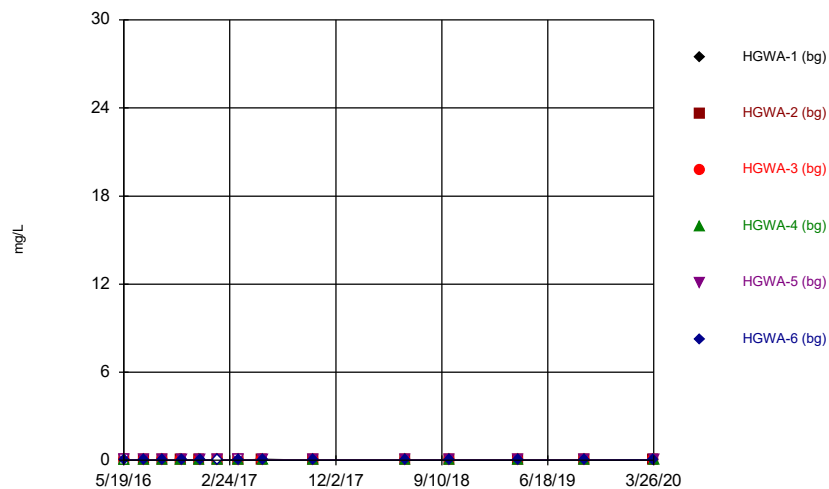
Hollow symbols indicate censored values.

Time Series



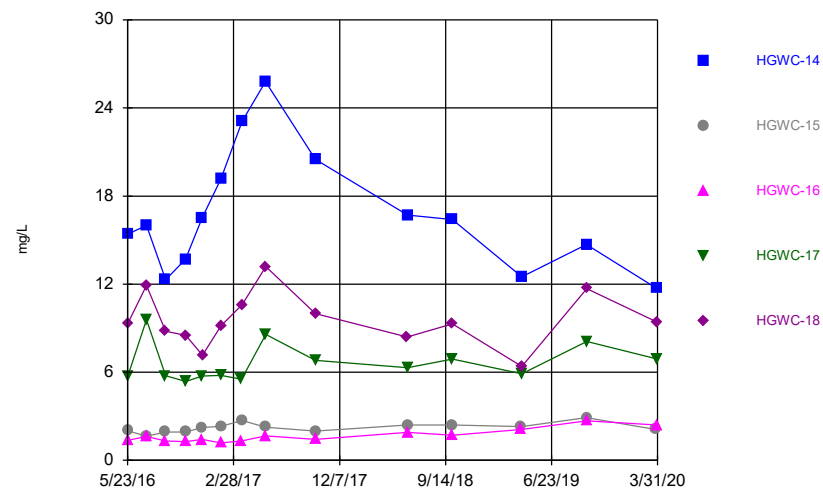
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 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



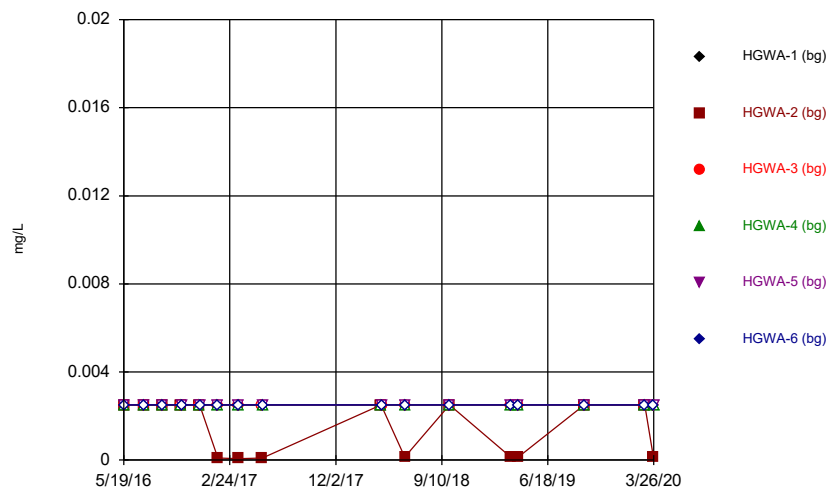
Constituent: Boron Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



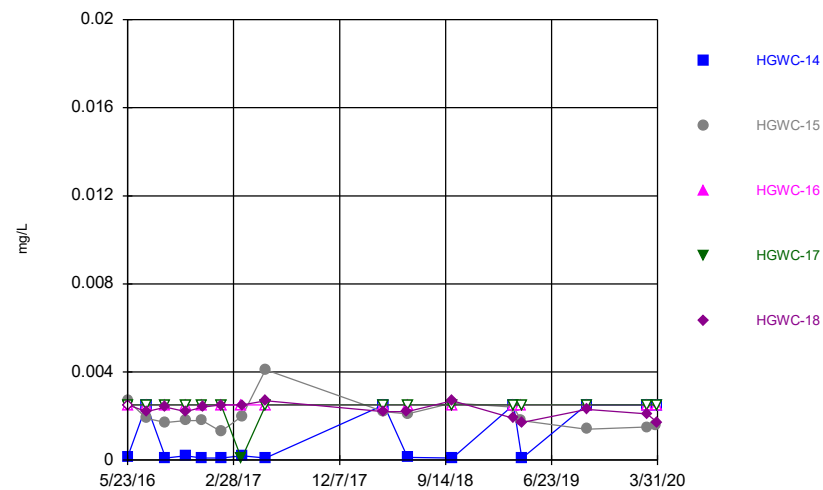
Constituent: Boron Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



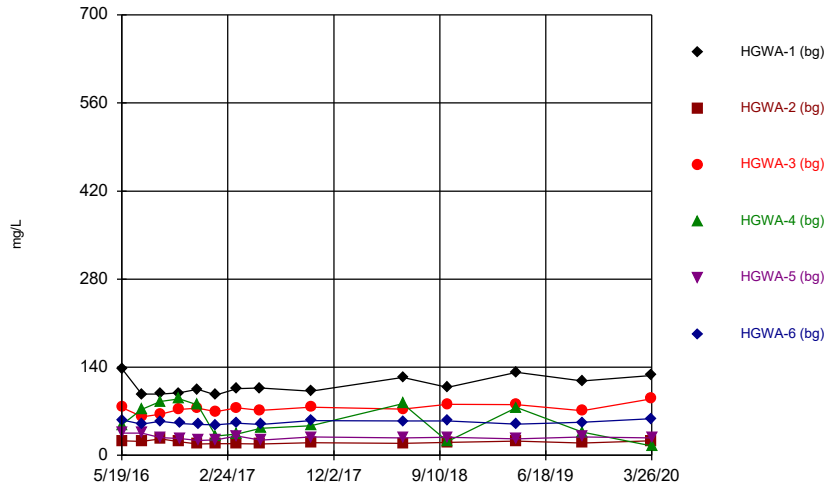
Constituent: Cadmium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



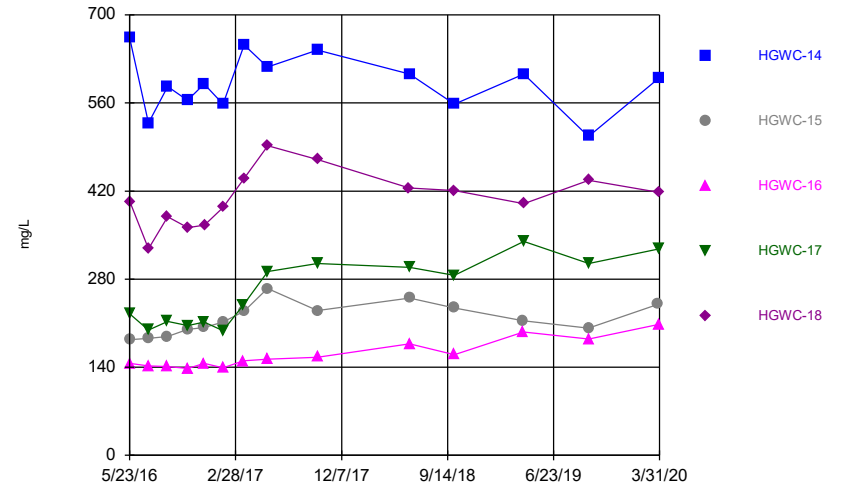
Constituent: Cadmium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



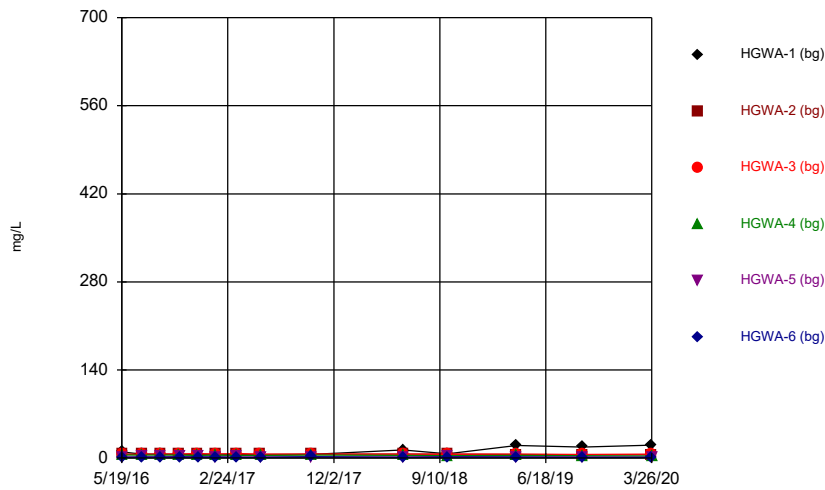
Constituent: Calcium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



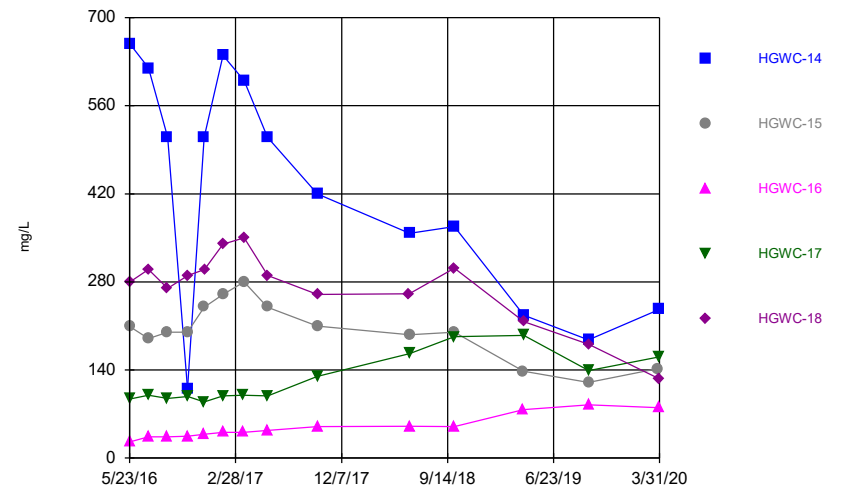
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



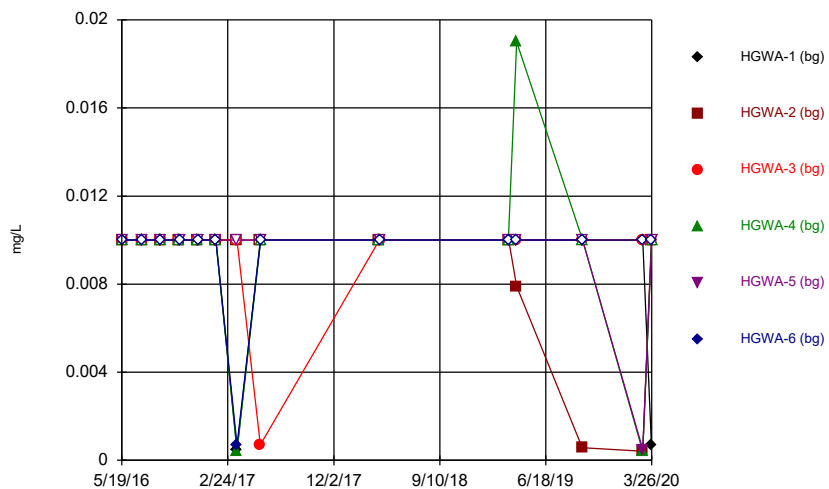
Constituent: Chloride Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



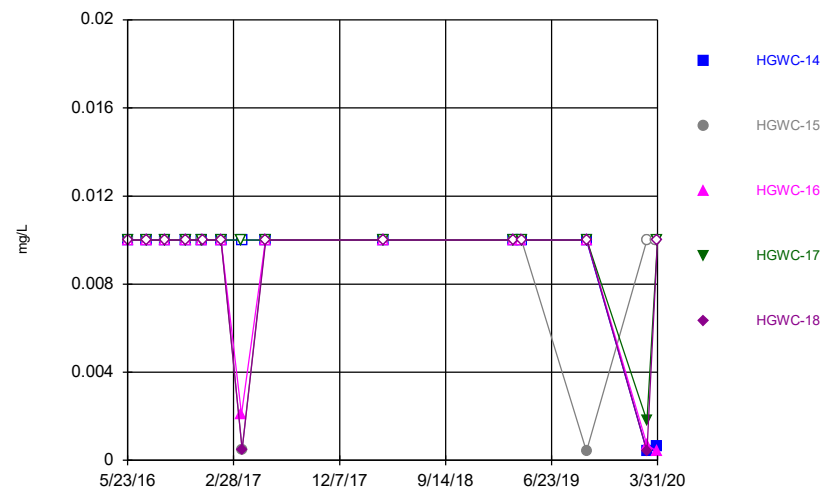
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



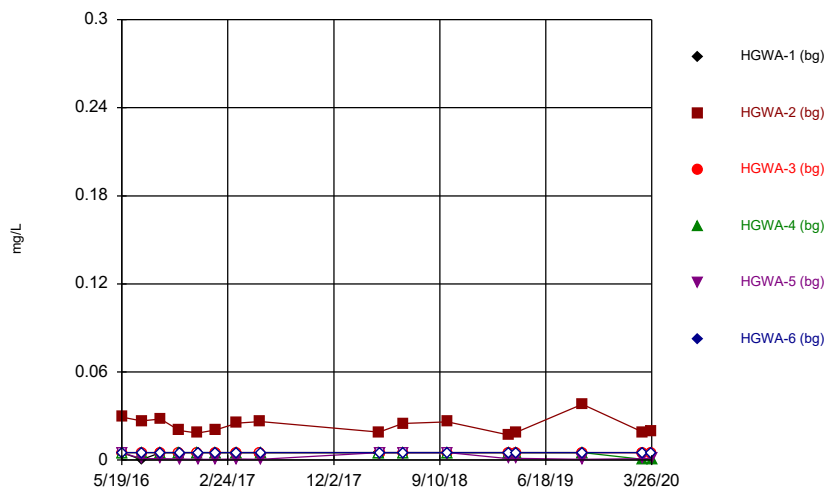
Constituent: Chromium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



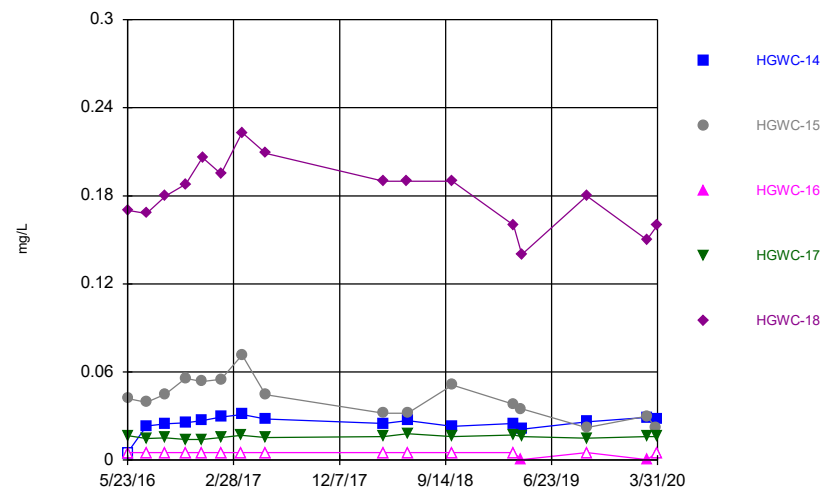
Constituent: Chromium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



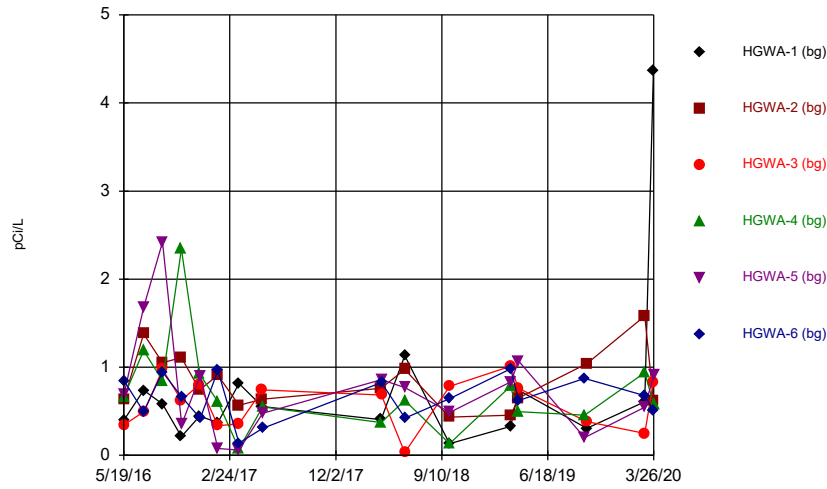
Constituent: Cobalt Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



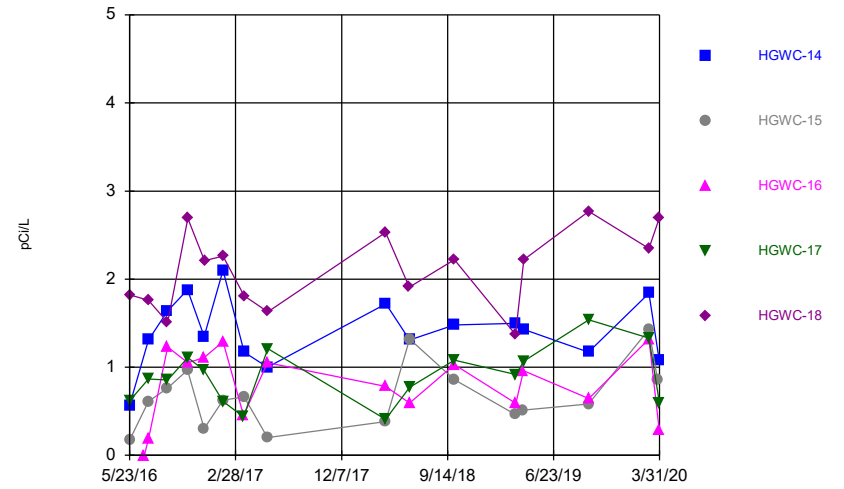
Constituent: Cobalt Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



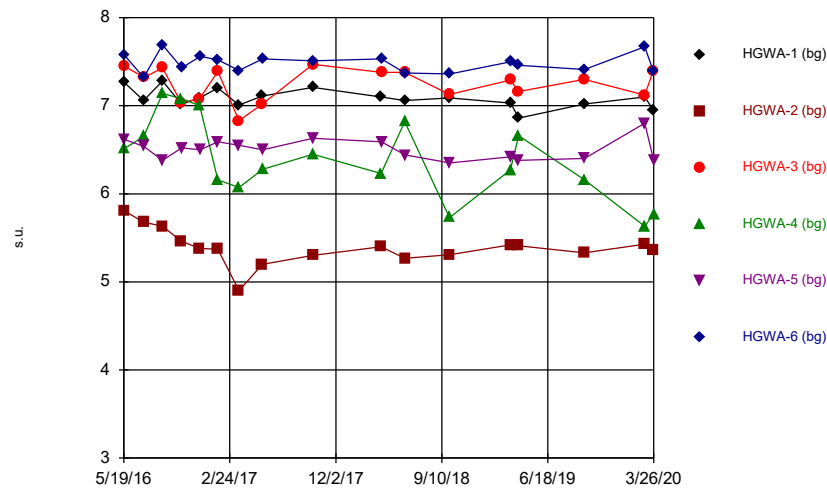
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



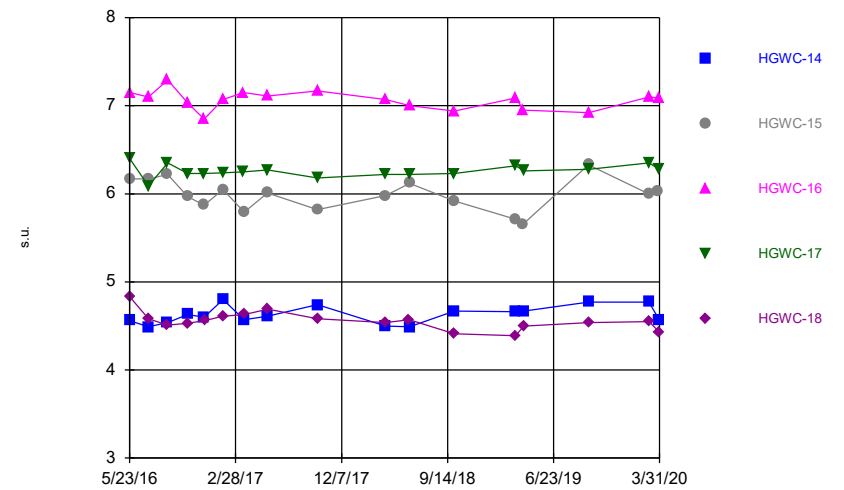
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



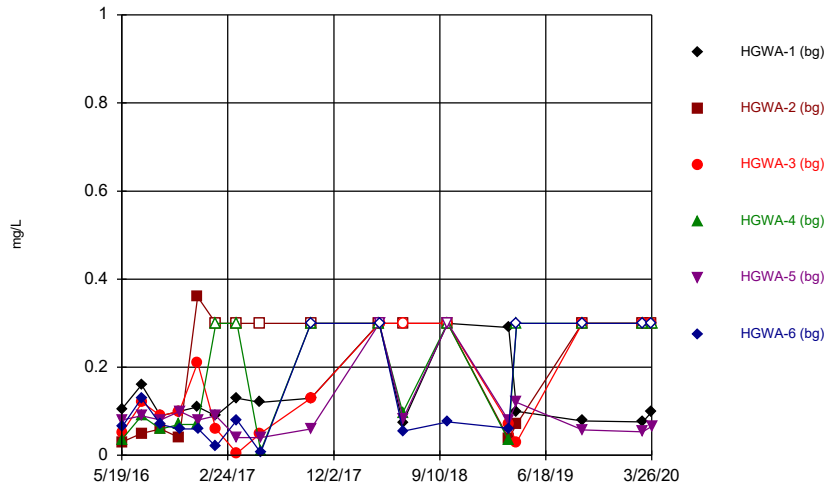
Constituent: Field pH Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



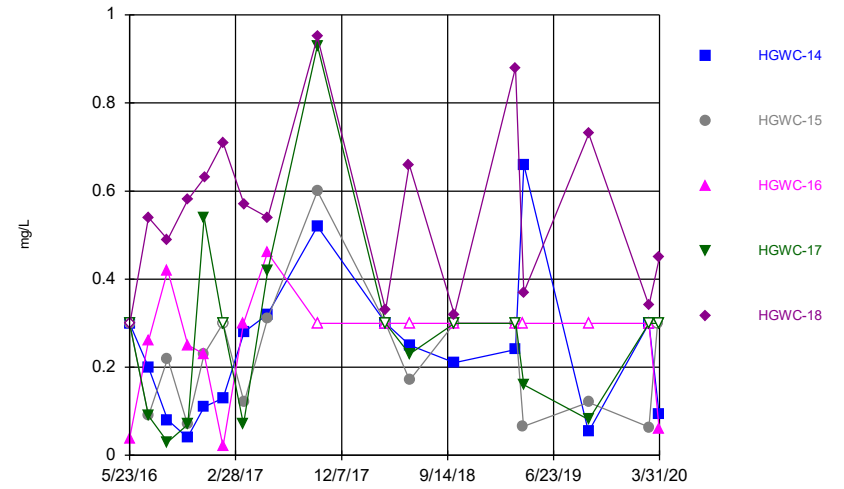
Constituent: Field pH Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



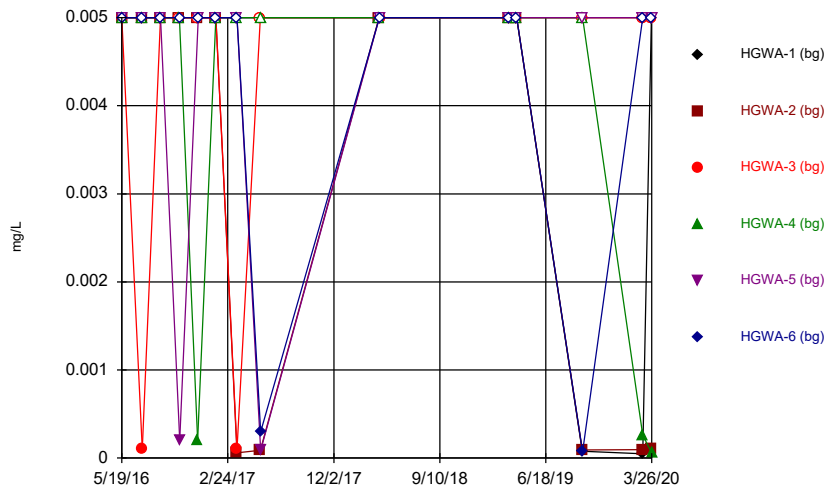
Constituent: Fluoride Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



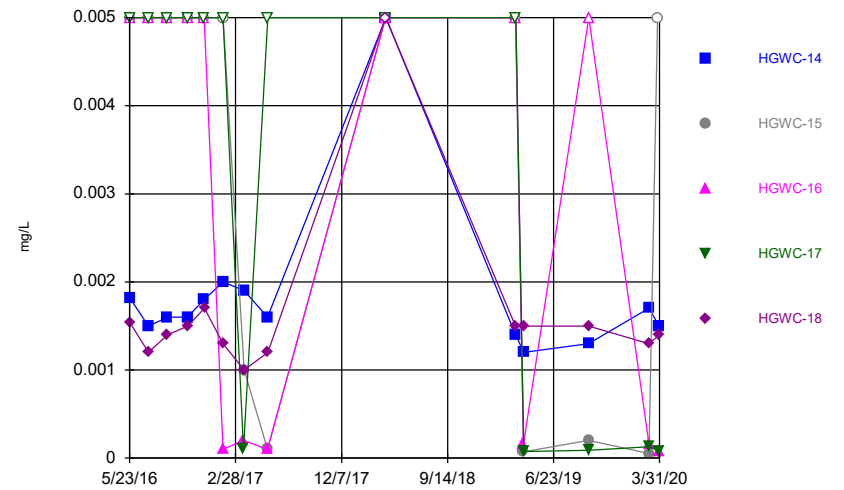
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



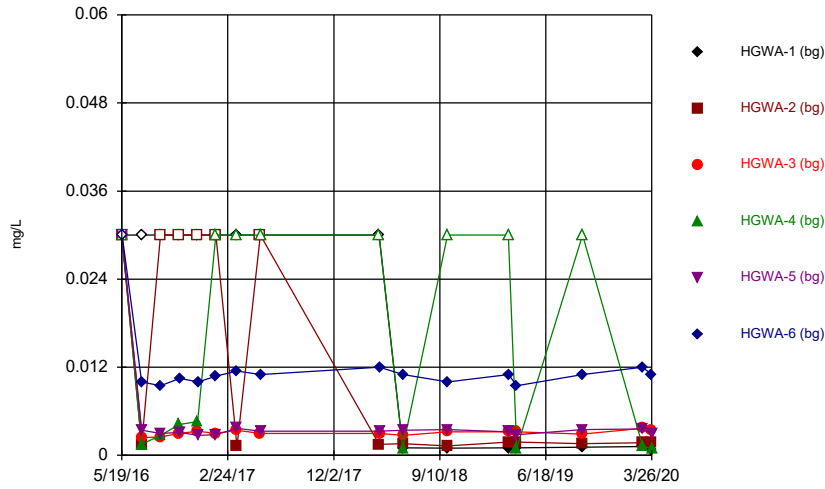
Constituent: Lead Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



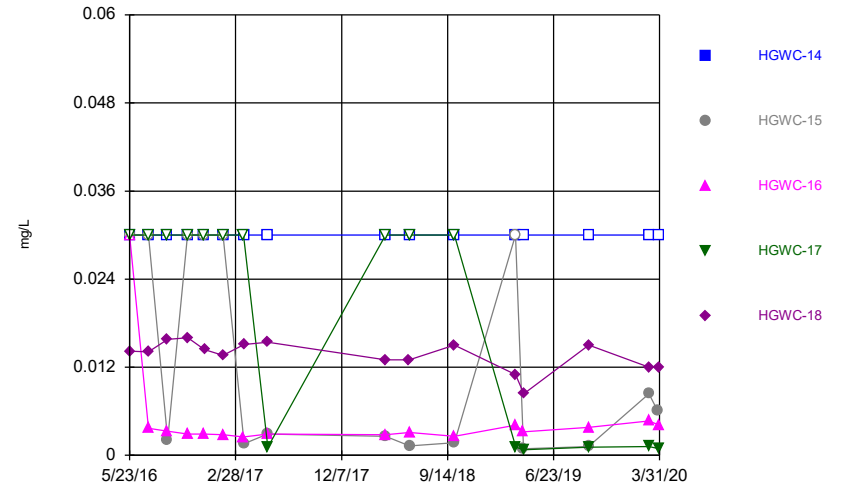
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



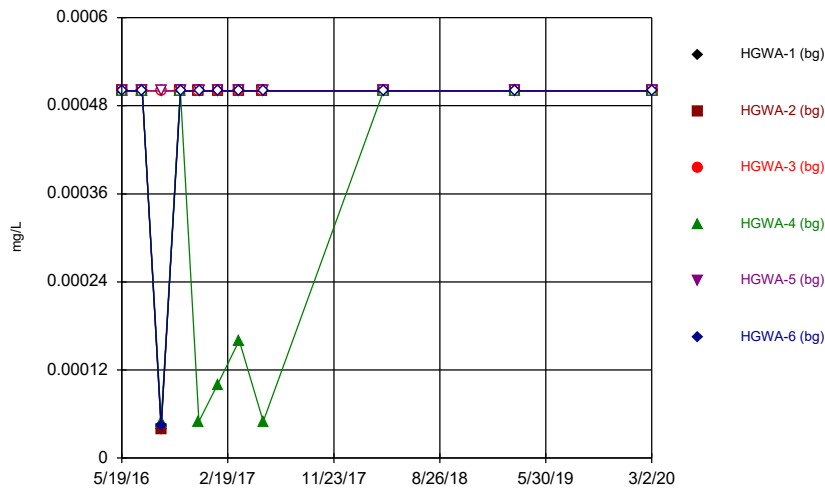
Constituent: Lithium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



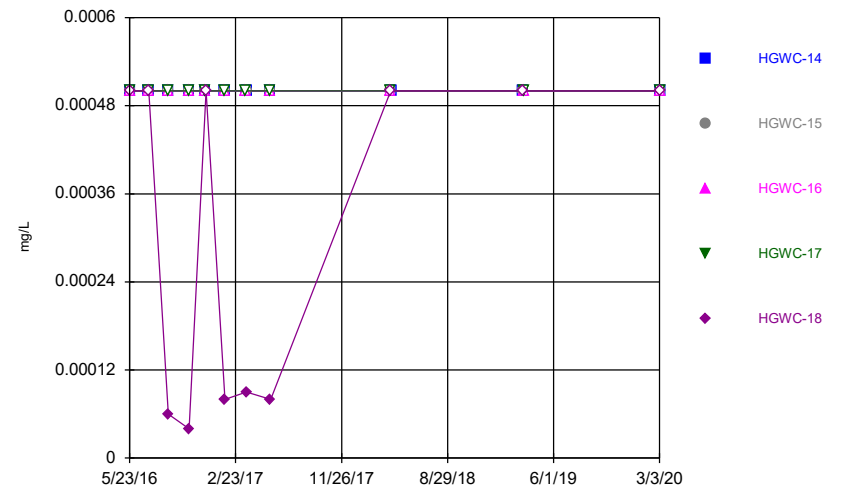
Constituent: Lithium Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



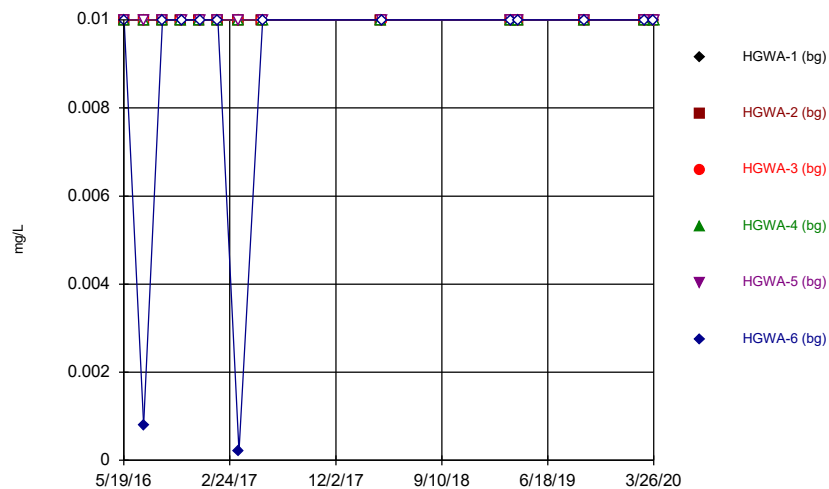
Constituent: Mercury Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



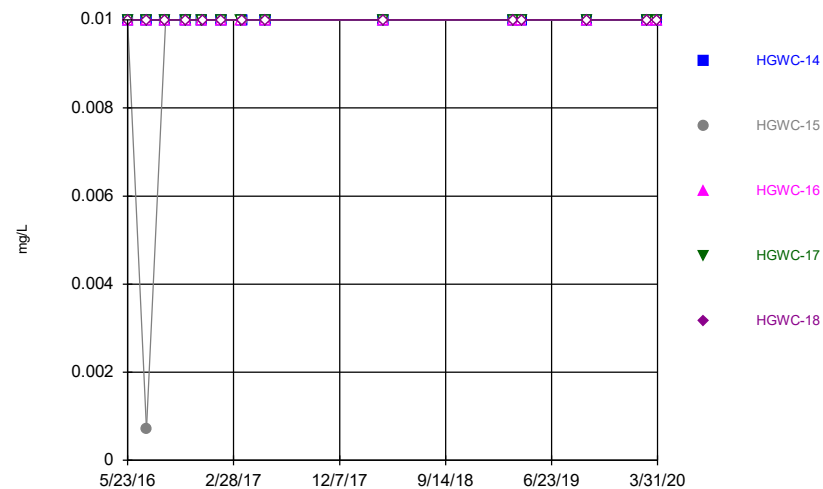
Constituent: Mercury Analysis Run 8/11/2020 8:42 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



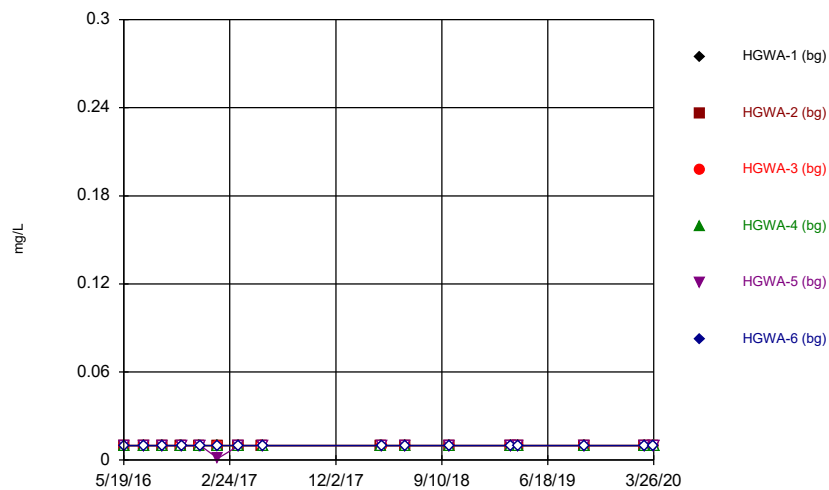
Constituent: Molybdenum Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



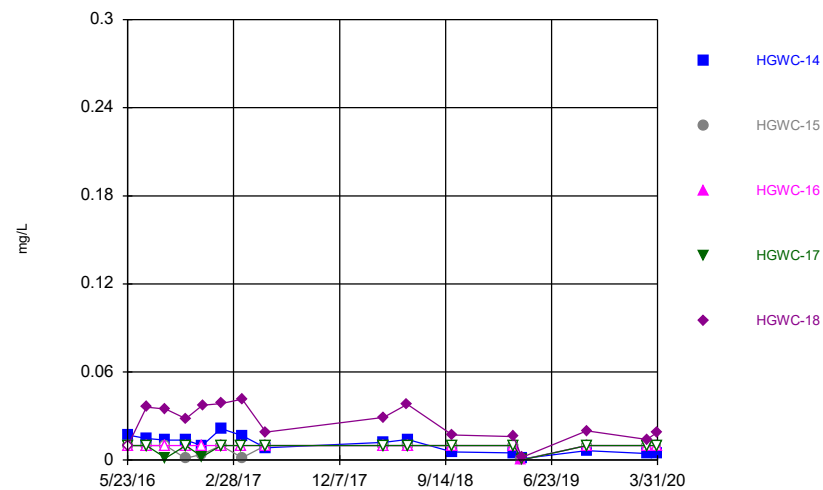
Constituent: Molybdenum Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



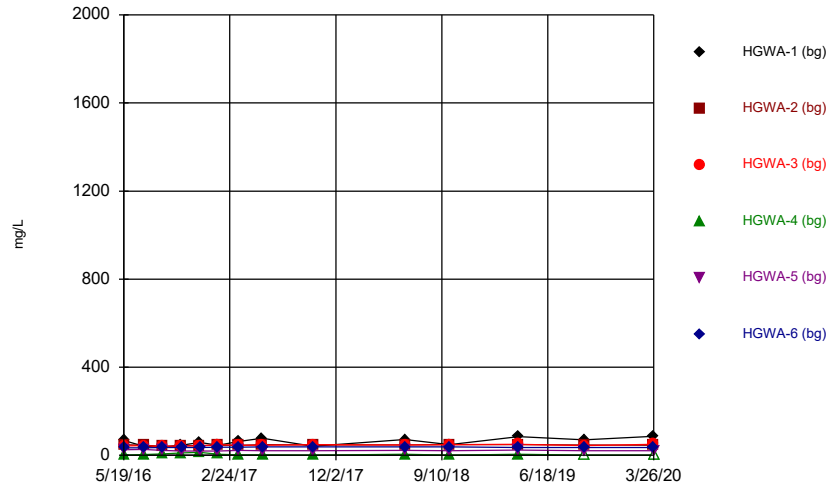
Constituent: Selenium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



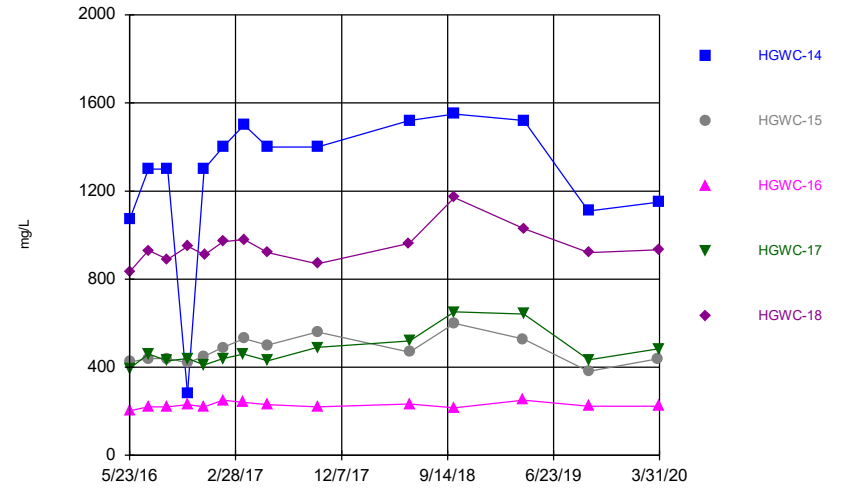
Constituent: Selenium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



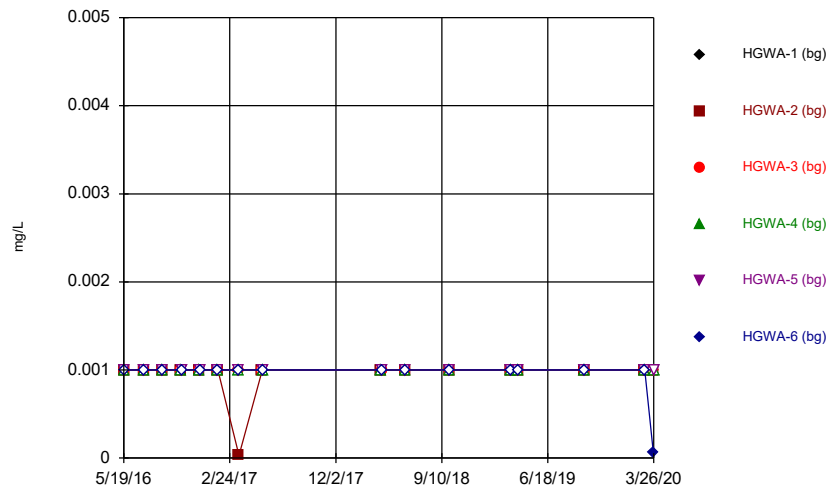
Constituent: Sulfate Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



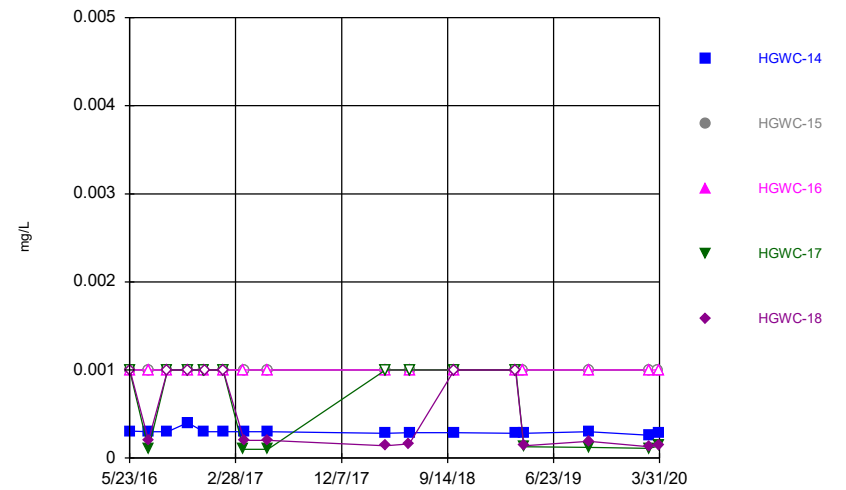
Constituent: Sulfate Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



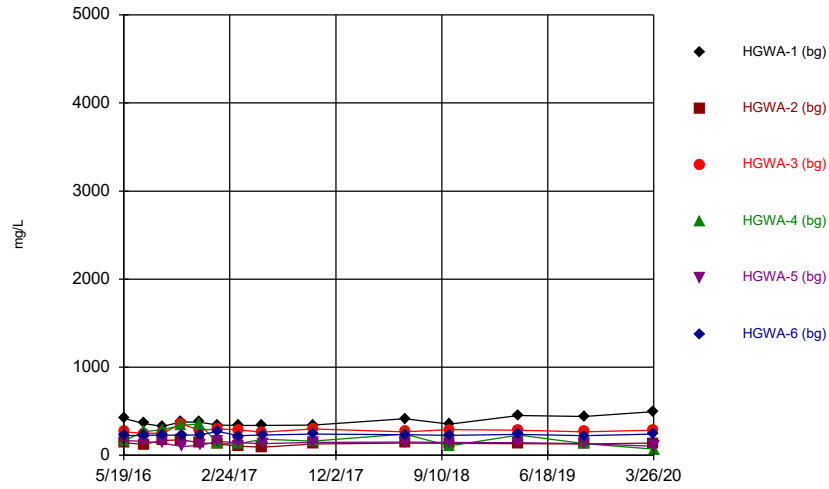
Constituent: Thallium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



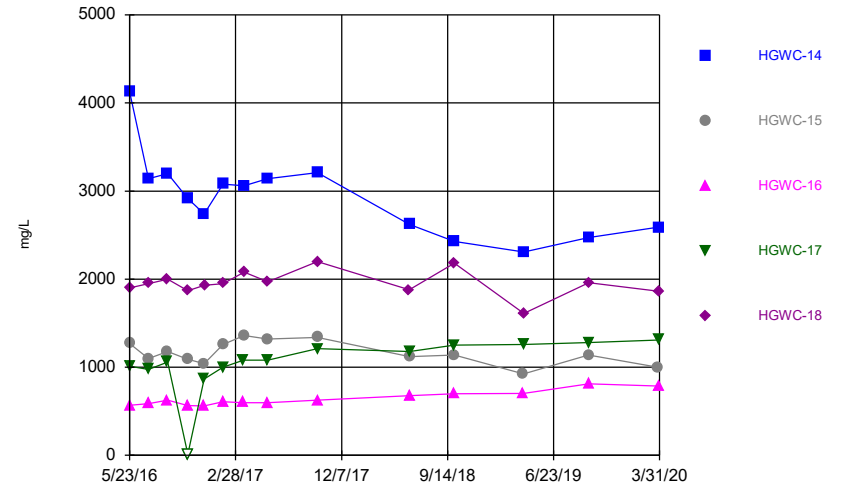
Constituent: Thallium Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:42 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series

Constituent: Antimony (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
5/23/2016							<0.003	<0.003	<0.003
7/11/2016	<0.003	<0.003		<0.003	<0.003	0.001 (J)			
7/12/2016			0.0003 (J)				0.0003 (J)	<0.003	<0.003
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
9/1/2016							<0.003	<0.003	<0.003
10/19/2016	0.0014 (J)	<0.003	<0.003	<0.003					
10/20/2016					0.0023 (J)	<0.003			
10/24/2016							<0.003	<0.003	
10/25/2016									<0.003
12/6/2016	<0.003	<0.003	<0.003	<0.003					
12/7/2016							<0.003	<0.003	<0.003
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
1/26/2017							<0.003	<0.003	<0.003
3/21/2017	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
3/22/2017									<0.003
3/23/2017							<0.003	<0.003	
5/22/2017	<0.003	<0.003	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
5/24/2017							<0.003	<0.003	<0.003
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003		<0.003	<0.003
4/4/2018							<0.003		
3/11/2019				<0.003					
3/12/2019	<0.003	<0.003	<0.003		<0.003	<0.003			
3/14/2019							<0.003	<0.003	
3/15/2019									<0.003
9/23/2019	<0.003	<0.003	<0.003						
3/2/2020	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
3/3/2020							<0.003	<0.003	<0.003

Time Series

Constituent: Antimony (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.003	
5/24/2016		<0.003
7/12/2016	<0.003	<0.003
9/1/2016	<0.003	<0.003
10/25/2016	<0.003	<0.003
12/7/2016	<0.003	
12/8/2016		<0.003
1/26/2017	<0.003	<0.003
3/22/2017	<0.003	
3/23/2017		<0.003
5/25/2017	<0.003	<0.003
4/3/2018	<0.003	<0.003
3/14/2019		<0.003
3/15/2019	<0.003	
3/3/2020	<0.003	<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	0.00127 (J)	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							0.00268 (J)	<0.005	<0.005
7/11/2016	<0.005	0.002 (J)		<0.005	<0.005	<0.005			
7/12/2016			0.0008 (J)				0.0059	<0.005	<0.005
8/30/2016	<0.005	0.0017 (J)	<0.005	<0.005	<0.005	<0.005			
9/1/2016							0.0056	<0.005	<0.005
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					<0.005	<0.005			
10/24/2016							0.0058	<0.005	
10/25/2016									<0.005
12/6/2016	<0.005	<0.005	<0.005	<0.005					
12/7/2016							<0.005	<0.005	<0.005
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
1/26/2017							0.0089	<0.005	<0.005
3/21/2017	0.0005 (J)	<0.005	0.0007 (J)	<0.005	<0.005	<0.005			
3/22/2017									0.0005 (J)
3/23/2017							0.0069	0.0008 (J)	
5/22/2017	<0.005	0.0006 (J)	0.0006 (J)						
5/23/2017				<0.005	<0.005	<0.005			
5/24/2017							0.0048 (J)	<0.005	<0.005
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005		<0.005	<0.005
4/4/2018							0.0052		
6/4/2018	<0.005	0.00088 (J)	0.0008 (J)	<0.005					
6/5/2018					<0.005	<0.005			
6/6/2018							0.0059	<0.005	<0.005
10/1/2018	<0.005	<0.005	0.0011 (J)	<0.005					
10/2/2018					0.00064 (J)	<0.005			
10/3/2018							0.0032 (J)	<0.005	<0.005
3/11/2019				<0.005					
3/12/2019	<0.005	0.00069 (J)	0.00063 (J)		<0.005	<0.005			
3/14/2019							0.0029 (J)	<0.005	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019								0.00017 (J)	0.0001 (J)
4/5/2019							<0.005		
9/23/2019	0.00046 (J)	0.00067 (J)	0.0011 (J)						
9/24/2019				<0.005	0.00055 (J)	<0.005	0.0039 (J)	0.00037 (J)	
9/25/2019									<0.005
3/2/2020	<0.005	0.00043 (J)	0.0004 (J)	<0.005	<0.005	<0.005			
3/3/2020							0.0035 (J)	<0.005	<0.005
3/25/2020	<0.005	<0.005	<0.005			<0.005			
3/26/2020				<0.005	<0.005			<0.005	
3/30/2020							0.0051		0.0011 (J)

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.005	
5/24/2016		0.00294 (J)
7/12/2016	<0.005	0.0074
9/1/2016	<0.005	0.0073
10/25/2016	<0.005	0.006
12/7/2016	<0.005	
12/8/2016		0.007
1/26/2017	<0.005	0.0068
3/22/2017	0.0007 (J)	
3/23/2017		0.0082
5/25/2017	0.0007 (J)	0.006
4/3/2018	<0.005	0.0062
6/5/2018		0.008
6/6/2018	0.00097 (J)	
10/3/2018	<0.005	0.0039 (J)
3/14/2019		0.0036 (J)
3/15/2019	<0.005	
4/5/2019	<0.005	0.0015 (J)
9/25/2019	<0.005	0.0044 (J)
3/3/2020	<0.005	0.0057
3/31/2020	0.0008 (J)	0.0056

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.0346	0.114	0.111	0.0266	0.0519				
5/20/2016						0.174			
5/23/2016							<0.2	0.0315 (J)	0.0841
7/11/2016	0.0311	0.112		0.0309	0.0565	0.134			
7/12/2016			0.115				0.0214	0.0372	0.0886
8/30/2016	0.0293	0.131	0.113	0.031	0.0548	0.212			
9/1/2016							0.0208	0.0364	0.0934
10/19/2016	0.0293	0.111	0.123	0.0332					
10/20/2016					0.0539	0.157			
10/24/2016							0.0208	0.0326	
10/25/2016									0.0991
12/6/2016	0.0304	0.108	0.127	0.0334					
12/7/2016							0.022	0.0301	0.101
12/8/2016					0.0496	0.162			
1/24/2017	0.028	0.102	0.126	0.0192	0.0478	0.168			
1/26/2017							0.0238	0.0287	0.105
3/21/2017	0.0275	0.095	0.12	0.0175	0.0453	0.186			
3/22/2017									0.11
3/23/2017							0.0244	0.0329	
5/22/2017	0.0281	0.103	0.117						
5/23/2017				0.0227	0.0496	0.187			
5/24/2017							0.0228	0.0283	0.106
4/2/2018	0.026	0.099		0.022					
4/3/2018			0.11		0.038	0.14		0.019	0.099
4/4/2018							0.021		
6/4/2018	0.035	0.11	0.12	0.027					
6/5/2018					0.046	0.21			
6/6/2018							0.022	0.022	0.11
10/1/2018	0.029	0.11	0.14	0.018					
10/2/2018					0.047	0.19			
10/3/2018							0.02	0.025	0.11
3/11/2019				0.029					
3/12/2019	0.042	0.12	0.13		0.05	0.2			
3/14/2019							0.019	0.021	
3/15/2019									0.13
4/1/2019			0.13						
4/2/2019	0.04	0.13		0.03	0.044	0.19			
4/4/2019								0.018	0.11
4/5/2019							0.016		
9/23/2019	0.042	0.13	0.13						
9/24/2019				0.03	0.053	0.22	0.021	0.019	
9/25/2019									0.11
3/2/2020	0.034	0.11	0.14	0.023	0.053	0.19			
3/3/2020							0.018	0.018	0.12
3/25/2020	0.043	0.12	0.13			0.19			
3/26/2020				0.026	0.045			0.016	
3/30/2020							0.02		0.11

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	0.0222 (J)	
5/24/2016		<0.2
7/12/2016	0.0221	0.0346
9/1/2016	0.0227	0.0336
10/25/2016	0.0225	0.0349
12/7/2016	0.0227	
12/8/2016		0.0339
1/26/2017	0.0229	0.0293
3/22/2017	0.0248	
3/23/2017		0.0313
5/25/2017	0.0255	0.0336
4/3/2018	0.025	0.028
6/5/2018		0.03
6/6/2018	0.028	
10/3/2018	0.028	0.032
3/14/2019		0.029
3/15/2019	0.029	
4/5/2019	0.022	0.021
9/25/2019	0.025	0.03
3/3/2020	0.026	0.026
3/31/2020	0.029	0.029

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
5/23/2016							<0.003	<0.003	<0.003
7/11/2016	<0.003	0.0001 (J)		<0.003	<0.003	<0.003			
7/12/2016			<0.003				0.0005 (J)	<0.003	<0.003
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
9/1/2016							0.0005 (J)	<0.003	<0.003
10/19/2016	<0.003	0.0001 (J)	<0.003	<0.003					
10/20/2016					<0.003	<0.003			
10/24/2016							0.0005 (J)	<0.003	
10/25/2016									<0.003
12/6/2016	<0.003	0.0002 (J)	<0.003	<0.003					
12/7/2016							0.0006 (J)	<0.003	<0.003
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
1/26/2017							0.0005 (J)	<0.003	<0.003
3/21/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
3/22/2017									<0.003
3/23/2017							0.0006 (J)	<0.003	
5/22/2017	<0.003	0.0001 (J)	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
5/24/2017							0.0005 (J)	<0.003	<0.003
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003		<0.003	<0.003
4/4/2018							<0.003		
3/11/2019				5E-05 (J)					
3/12/2019	<0.003	0.00017 (J)	<0.003		<0.003	<0.003			
3/14/2019							0.00043 (J)	<0.003	
3/15/2019									<0.003
4/1/2019			<0.003						
4/2/2019	<0.003	0.00015 (J)		<0.003	<0.003	<0.003			
4/4/2019								<0.003	<0.003
4/5/2019							0.00027 (J)		
9/23/2019	<0.003	0.00011 (J)	<0.003						
9/24/2019				<0.003	<0.003	<0.003	0.00044 (J)	<0.003	
9/25/2019									<0.003
3/2/2020	<0.003	0.00014 (J)	<0.003	0.00019 (J)	<0.003	<0.003			
3/3/2020							0.00043 (J)	<0.003	<0.003
3/25/2020	<0.003	0.00016 (J)	<0.003			<0.003			
3/26/2020				7.6E-05 (J)	<0.003			<0.003	
3/30/2020							0.00043 (J)		<0.003

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 8:43 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.003	
5/24/2016		0.00278 (J)
7/12/2016	<0.003	0.0032
9/1/2016	<0.003	0.0034
10/25/2016	<0.003	0.0034
12/7/2016	<0.003	
12/8/2016		0.0033
1/26/2017	<0.003	0.0034
3/22/2017	<0.003	
3/23/2017		0.0036
5/25/2017	<0.003	0.0036
4/3/2018	<0.003	<0.003
3/14/2019		0.0026 (J)
3/15/2019	<0.003	
4/5/2019	<0.003	0.0022 (J)
9/25/2019	<0.003	0.0031
3/3/2020	<0.003	0.0029 (J)
3/31/2020	<0.003	0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.0214 (J)	0.0321 (J)	<0.04	<0.04	<0.04				
5/20/2016						0.0363 (J)			
5/23/2016							15.4	2.02	1.36
7/11/2016	0.0142 (J)	0.0337 (J)		0.0175 (J)	0.0052 (J)	0.0179 (J)			
7/12/2016			0.0074 (J)				16	1.65	1.62
8/30/2016	0.0074 (J)	0.0173 (J)	<0.04	0.0072 (J)	0.0068 (J)	0.014 (J)			
9/1/2016							12.3	1.93	1.31
10/19/2016	0.0224 (J)	0.0341 (J)	0.0085 (J)	0.018 (J)					
10/20/2016					0.0135 (J)	0.0197 (J)			
10/24/2016							13.7	1.93	
10/25/2016									1.27
12/6/2016	0.0211 (J)	0.0326 (J)	0.0085 (J)	0.0158 (J)					
12/7/2016							16.5	2.23	1.42
12/8/2016					0.0083 (J)	0.0159 (J)			
1/24/2017	0.0165 (J)	0.0365 (J)	0.01 (J)	0.0145 (J)	0.0072 (J)	<0.04			
1/26/2017							19.2	2.31	1.19
3/21/2017	0.0187 (J)	0.0349 (J)	0.0079 (J)	0.0101 (J)	<0.04	0.0166 (J)			
3/22/2017									1.32
3/23/2017							23.1	2.72	
5/22/2017	0.0782	0.0475	0.0131 (J)						
5/23/2017				0.0159 (J)	0.0095 (J)	0.0167 (J)			
5/24/2017							25.8	2.26	1.67
10/3/2017	0.0198 (J)	0.0386 (J)	0.0097 (J)	0.0162 (J)	0.0071 (J)	0.017 (J)			
10/4/2017							20.5	2	1.43
6/4/2018	0.02 (J)	0.036 (J)	0.017 (J)	0.014 (J)					
6/5/2018					0.0066 (J)	0.016 (J)			
6/6/2018							16.7	2.4	1.9
10/1/2018	0.013 (J)	0.035 (J)	0.0061 (J)	0.0093 (J)					
10/2/2018					0.0081 (J)	0.014 (J)			
10/3/2018							16.4	2.4	1.7
4/1/2019			0.0066 (J)						
4/2/2019	0.016 (J)	0.034 (J)		0.01 (J)	0.0052 (J)	0.013 (J)			
4/4/2019								2.3	2.1
4/5/2019							12.5		
9/23/2019	0.021 (J)	0.04 (J)	0.0081 (J)						
9/24/2019				0.013 (J)	0.0088 (J)	0.016 (J)	14.7	2.9	
9/25/2019									2.7
3/25/2020	0.025 (J)	0.039 (J)	0.0096 (J)			0.021 (J)			
3/26/2020				0.012 (J)	0.0072 (J)			2.1	
3/30/2020							11.7		2.4

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	5.7	
5/24/2016		9.33
7/12/2016	9.58	11.9
9/1/2016	5.76	8.8
10/25/2016	5.38	8.5
12/7/2016	5.74	
12/8/2016		7.15
1/26/2017	5.78	9.17
3/22/2017	5.52	
3/23/2017		10.6
5/25/2017	8.58	13.2
10/4/2017	6.8	10
6/5/2018		8.4
6/6/2018	6.3	
10/3/2018	6.9	9.3
4/5/2019	5.9	6.4
9/25/2019	8.1	11.7
3/31/2020	6.9	9.4

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025				
5/20/2016						<0.0025			
5/23/2016							0.000139 (J)	0.00271 (J)	<0.0025
7/11/2016	<0.0025	<0.0025		<0.0025	<0.0025	<0.0025			
7/12/2016			<0.0025				<0.0025	0.0019	<0.0025
8/30/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
9/1/2016							0.0001 (J)	0.0017	<0.0025
10/19/2016	<0.0025	<0.0025	<0.0025	<0.0025					
10/20/2016					<0.0025	<0.0025			
10/24/2016							0.0002 (J)	0.0018	
10/25/2016									<0.0025
12/6/2016	<0.0025	<0.0025	<0.0025	<0.0025					
12/7/2016							0.0001 (J)	0.0018	<0.0025
12/8/2016					<0.0025	<0.0025			
1/24/2017	<0.0025	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
1/26/2017							0.0001 (J)	0.0013	<0.0025
3/21/2017	<0.0025	7E-05 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
3/22/2017									<0.0025
3/23/2017							0.0002 (J)	0.002	
5/22/2017	<0.0025	0.0001 (J)	<0.0025						
5/23/2017				<0.0025	<0.0025	<0.0025			
5/24/2017							0.0001 (J)	0.0041	<0.0025
4/2/2018	<0.0025	<0.0025		<0.0025					
4/3/2018			<0.0025		<0.0025	<0.0025		0.0022	<0.0025
4/4/2018							<0.0025		
6/4/2018	<0.0025	0.00014 (J)	<0.0025	<0.0025					
6/5/2018					<0.0025	<0.0025			
6/6/2018							0.00012 (J)	0.0021	<0.0025
10/1/2018	<0.0025	<0.0025	<0.0025	<0.0025					
10/2/2018					<0.0025	<0.0025			
10/3/2018							0.0001 (J)	0.0026	<0.0025
3/11/2019				<0.0025					
3/12/2019	<0.0025	0.00013 (J)	<0.0025		<0.0025	<0.0025			
3/14/2019							<0.0025	0.0024	
3/15/2019									<0.0025
4/1/2019			<0.0025						
4/2/2019	<0.0025	0.00015 (J)		<0.0025	<0.0025	<0.0025			
4/4/2019								0.0018	<0.0025
4/5/2019							7.9E-05 (J)		
9/23/2019	<0.0025	<0.0025	<0.0025						
9/24/2019				<0.0025	<0.0025	<0.0025	<0.0025	0.0014 (J)	
9/25/2019									<0.0025
3/2/2020	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
3/3/2020							<0.0025	0.0015 (J)	<0.0025
3/25/2020	<0.0025	0.00014 (J)	<0.0025			<0.0025			
3/26/2020				<0.0025	<0.0025			0.0016 (J)	
3/30/2020							<0.0025		<0.0025

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.0025	
5/24/2016		<0.0025
7/12/2016	<0.0025	0.0022
9/1/2016	<0.0025	0.0024
10/25/2016	<0.0025	0.0022
12/7/2016	<0.0025	
12/8/2016		0.0024
1/26/2017	<0.0025	0.0025
3/22/2017	7E-05 (J)	
3/23/2017		0.0025
5/25/2017	<0.0025	0.0027
4/3/2018	<0.0025	0.0022
6/5/2018		0.0022
6/6/2018	<0.0025	
10/3/2018	<0.0025	0.0027
3/14/2019		0.0019
3/15/2019	<0.0025	
4/5/2019	<0.0025	0.0017
9/25/2019	<0.0025	0.0023 (J)
3/3/2020	<0.0025	0.0021 (J)
3/31/2020	<0.0025	0.0017 (J)

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	138	22.9	76.2	48.4	35.5				
5/20/2016						56.1			
5/23/2016							664	184	146
7/11/2016	97.2	22.3		73	35.4	49.3			
7/12/2016			61.5				528	186	142
8/30/2016	97.5	26.4	65.1	85.7	28	53.9			
9/1/2016							586	189	141
10/19/2016	99.2	21.7	73.2	89.7					
10/20/2016					26.7	50.7			
10/24/2016							564	200	
10/25/2016									138
12/6/2016	105	18.2	74.9	80					
12/7/2016							590	203	146
12/8/2016					23.5	49.2			
1/24/2017	95.7	18.5	69.6	30.8	24.5	48.3			
1/26/2017							558	212	139
3/21/2017	106	18.6	75.7	34	30.8	51.3			
3/22/2017									150
3/23/2017							652	229	
5/22/2017	107	17.8	71.5						
5/23/2017				43	24.2	49.1			
5/24/2017							617	265	153
10/3/2017	102	20.2	76.3	46.9	29	55.1			
10/4/2017							644	230	156
6/4/2018	124	19.1	73.4	81.9					
6/5/2018					27.8	54.5			
6/6/2018							606	250	177
10/1/2018	108	20.5 (J)	80.9	22 (J)					
10/2/2018					28.9	54.7			
10/3/2018							558	234	160
4/1/2019			80.5						
4/2/2019	132	22.5 (J)		76	26.3	49.7			
4/4/2019								214	196
4/5/2019							606		
9/23/2019	118	19.5	71						
9/24/2019				36.6	29.3	52.5	507	202	
9/25/2019									185
3/25/2020	127	23	89.8			58.1			
3/26/2020				14.9	27.8			240	
3/30/2020							600		208

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	225	
5/24/2016		403
7/12/2016	199	328
9/1/2016	213	379
10/25/2016	206	362
12/7/2016	212	
12/8/2016		366
1/26/2017	198	394
3/22/2017	239	
3/23/2017		440
5/25/2017	292	492
10/4/2017	305	470
6/5/2018		425
6/6/2018	299	
10/3/2018	286	421
4/5/2019	340	400
9/25/2019	305	437
3/31/2020	328	418

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	9.94	6.14	5.93	4.56	1.57				
5/20/2016						1.35			
5/23/2016							659	209	25.8
7/11/2016	6.3	5.9		5	2	1.7			
7/12/2016			6.2				620	190	34
8/30/2016	6	6.2	6.4	4.9	2	1.6			
9/1/2016							510	200	34
10/19/2016	5.8	6.1	6.5	4.6					
10/20/2016					2.2	1.6			
10/24/2016							110	200	
10/25/2016									35
12/6/2016	5.4	6	7.2	4.5					
12/7/2016							510	240	38
12/8/2016					2	1.6			
1/24/2017	5.2	6.1	6.4	4.7	1.6	1.9			
1/26/2017							640	260	41
3/21/2017	4.6	5.9	7.5	4.3	2	1.3			
3/22/2017									41
3/23/2017							600	280	
5/22/2017	4.6	5.9	6.5						
5/23/2017				4.5	1.7	1.2			
5/24/2017							510	240	44
10/3/2017	5.6	6.3	6.5	4.8	1.7	2.1			
10/4/2017							420	210	50
6/4/2018	13.1	6.1	6.3	4.5					
6/5/2018					1.6	1.2			
6/6/2018							357	196	50.6
10/1/2018	6.6	6.4	6.4	3.8					
10/2/2018					2.4	1.7			
10/3/2018							368	200	49.9
4/1/2019			6.5						
4/2/2019	20.3	5.8		4.4	1.7	1.6			
4/4/2019								138	76.8
4/5/2019							227		
9/23/2019	17.7	5.1	5.9						
9/24/2019				3.6	1.7	1.3	188	120	
9/25/2019									84.4
3/25/2020	20.4	5.2	6.1			1.2			
3/26/2020				3.4	1.4			142	
3/30/2020							236		80.2

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	94	
5/24/2016		280
7/12/2016	100	300
9/1/2016	95	270
10/25/2016	98	290
12/7/2016	89	
12/8/2016		300
1/26/2017	99	340
3/22/2017	100	
3/23/2017		350
5/25/2017	99	290
10/4/2017	130	260
6/5/2018		261
6/6/2018	166	
10/3/2018	193	302
4/5/2019	195	217
9/25/2019	139	181
3/31/2020	161	126

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							<0.01	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01				<0.01	<0.01	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							<0.01	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							<0.01	<0.01	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							<0.01	<0.01	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
1/26/2017							<0.01	<0.01	<0.01
3/21/2017	0.0005 (J)	<0.01	<0.01	0.0004 (J)	<0.01	0.0007 (J)			
3/22/2017									0.0021 (J)
3/23/2017							<0.01	0.0005 (J)	
5/22/2017	<0.01	<0.01	0.0007 (J)						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							<0.01	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							<0.01		
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							<0.01	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	0.0079 (J)		0.019	<0.01	<0.01			
4/4/2019								<0.01	<0.01
4/5/2019							<0.01		
9/23/2019	<0.01	0.00058 (J)	<0.01						
9/24/2019				<0.01	<0.01	<0.01	<0.01	0.00041 (J)	
9/25/2019									<0.01
3/2/2020	<0.01	0.00041 (J)	<0.01	0.0004 (J)	0.0005 (J)	<0.01			
3/3/2020							0.00042 (J)	<0.01	0.00071 (J)
3/25/2020	0.00072 (J)	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							0.00066 (J)		0.0004 (J)

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.01	
5/24/2016		<0.01
7/12/2016	<0.01	<0.01
9/1/2016	<0.01	<0.01
10/25/2016	<0.01	<0.01
12/7/2016	<0.01	
12/8/2016		<0.01
1/26/2017	<0.01	<0.01
3/22/2017	<0.01	
3/23/2017		0.0005 (J)
5/25/2017	<0.01	<0.01
4/3/2018	<0.01	<0.01
3/14/2019		<0.01
3/15/2019	<0.01	
4/5/2019	<0.01	<0.01
9/25/2019	<0.01	<0.01
3/3/2020	0.0018 (J)	0.0004 (J)
3/31/2020	<0.01	<0.01

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	0.0293	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							<0.005	0.0419 (J)	<0.005
7/11/2016	0.0004 (J)	0.0267		<0.005	0.001 (J)	<0.005			
7/12/2016			<0.005				0.0232	0.0393	<0.005
8/30/2016	<0.005	0.028	<0.005	<0.005	0.001 (J)	<0.005			
9/1/2016							0.0248	0.045	<0.005
10/19/2016	<0.005	0.0201	<0.005	<0.005					
10/20/2016					0.0008 (J)	<0.005			
10/24/2016							0.0253	0.0557	
10/25/2016									<0.005
12/6/2016	<0.005	0.0184	<0.005	<0.005					
12/7/2016							0.0269	0.0536	<0.005
12/8/2016					0.0006 (J)	<0.005			
1/24/2017	<0.005	0.0206	<0.005	<0.005	0.0006 (J)	<0.005			
1/26/2017							0.0294	0.055	<0.005
3/21/2017	<0.005	0.0251	<0.005	<0.005	0.0008 (J)	<0.005			
3/22/2017									<0.005
3/23/2017							0.0311	0.0715	
5/22/2017	<0.005	0.0263	<0.005						
5/23/2017				<0.005	0.0006 (J)	<0.005			
5/24/2017							0.0279	0.0446	<0.005
4/2/2018	<0.005	0.019		<0.005					
4/3/2018			<0.005		<0.005	<0.005		0.032	<0.005
4/4/2018							0.025		
6/4/2018	<0.005	0.025	<0.005	<0.005					
6/5/2018					<0.005	<0.005			
6/6/2018							0.027	0.032	<0.005
10/1/2018	<0.005	0.026	<0.005	<0.005					
10/2/2018					<0.005	<0.005			
10/3/2018							0.023	0.051	<0.005
3/11/2019				<0.005					
3/12/2019	<0.005	0.017	<0.005		0.00099 (J)	<0.005			
3/14/2019							0.025	0.038	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	0.019		<0.005	0.0012 (J)	<0.005			
4/4/2019								0.035	0.00028 (J)
4/5/2019							0.021		
9/23/2019	<0.005	0.038	<0.005						
9/24/2019				<0.005	0.00063 (J)	<0.005	0.026	0.022	
9/25/2019									<0.005
3/2/2020	<0.005	0.019	<0.005	0.00063 (J)	0.00093 (J)	<0.005			
3/3/2020							0.029	0.03	0.00037 (J)
3/25/2020	<0.005	0.02	<0.005			<0.005			
3/26/2020				0.00058 (J)	0.0013 (J)			0.022	
3/30/2020							0.028		<0.005

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	0.0167	
5/24/2016		0.17 (J)
7/12/2016	0.0148	0.168
9/1/2016	0.0151	0.18
10/25/2016	0.0141	0.188
12/7/2016	0.0141	
12/8/2016		0.206
1/26/2017	0.0154	0.195
3/22/2017	0.0169	
3/23/2017		0.223
5/25/2017	0.0154	0.209
4/3/2018	0.016	0.19
6/5/2018		0.19
6/6/2018	0.018	
10/3/2018	0.016	0.19
3/14/2019		0.16
3/15/2019	0.017	
4/5/2019	0.016	0.14
9/25/2019	0.015	0.18
3/3/2020	0.016	0.15
3/31/2020	0.016	0.16

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.397 (U)	0.627 (U)	0.342 (U)	0.662 (U)	0.685 (U)				
5/20/2016						0.843 (U)			
5/23/2016							0.568 (U)	0.171 (U)	
7/1/2016									0 (U)
7/11/2016	0.738 (U)	1.38		1.19	1.68	0.494 (U)			
7/12/2016			0.499 (U)				1.31	0.611 (U)	0.182 (U)
8/30/2016	0.581 (U)	1.05 (U)	0.976 (U)	0.847 (U)	2.42	0.946 (U)			
9/1/2016							1.64	0.766 (U)	1.23
10/19/2016	0.213 (U)	1.11 (U)	0.626 (U)	2.34					
10/20/2016					0.351 (U)	0.664 (U)			
10/24/2016							1.88	0.969	
10/25/2016									1.05 (U)
12/6/2016	0.444 (U)	0.741 (U)	0.805 (U)	0.925 (U)					
12/7/2016							1.35	0.302 (U)	1.11 (U)
12/8/2016					0.905 (U)	0.421 (U)			
1/24/2017	0.373 (U)	0.908 (U)	0.336 (U)	0.607 (U)	0.0774 (U)	0.965 (U)			
1/26/2017							2.1	0.626 (U)	1.29 (U)
3/21/2017	0.816 (U)	0.567 (U)	0.358 (U)	0.074 (U)	0.0599 (U)	0.139 (U)			
3/22/2017									0.453 (U)
3/23/2017							1.17	0.662 (U)	
5/22/2017	0.554 (U)	0.638 (U)	0.744 (U)						
5/23/2017				0.55 (U)	0.477 (U)	0.308 (U)			
5/24/2017							1 (U)	0.202 (U)	1.05 (U)
4/2/2018	0.405 (U)	0.761 (U)		0.371 (U)					
4/3/2018			0.684 (U)		0.858 (U)	0.828 (U)		0.384 (U)	0.783 (U)
4/4/2018							1.72		
6/4/2018	1.13 (U)	0.975 (U)	0.0291 (U)	0.622 (U)					
6/5/2018					0.767 (U)	0.424 (U)			
6/6/2018							1.31 (U)	1.32 (U)	0.595 (U)
10/1/2018	0.132 (U)	0.434 (U)	0.781 (U)	0.132 (U)					
10/2/2018					0.489 (U)	0.643 (U)			
10/3/2018							1.48	0.858 (U)	1.03 (U)
3/11/2019				0.781 (U)					
3/12/2019	0.327 (U)	0.454 (U)	1.01 (U)		0.833 (U)	0.982 (U)			
3/14/2019							1.5	0.462 (U)	
3/15/2019									0.591 (U)
4/1/2019			0.76 (U)						
4/2/2019	0.739 (U)	0.651 (U)		0.494 (U)	1.07 (U)	0.621 (U)			
4/4/2019								0.512 (U)	0.96 (U)
4/5/2019							1.43 (U)		
9/24/2019				0.455 (U)	0.201 (U)	0.874 (U)	1.17	0.582 (U)	
9/25/2019									0.643 (U)
9/30/2019	0.306 (U)	1.04 (U)	0.384 (U)						
3/2/2020	0.61 (U)	1.58	0.249 (U)	0.937 (U)	0.547 (U)	0.676 (U)			
3/3/2020							1.84	1.43	1.32 (U)
3/25/2020	4.36	0.621 (U)	0.833 (U)			0.509 (U)			
3/26/2020				0.578 (U)	0.907 (U)			0.855 (U)	
3/30/2020							1.08 (U)		0.288 (U)

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	0.618 (U)	
5/24/2016		1.82
7/12/2016	0.867	1.76
9/1/2016	0.857 (U)	1.51
10/25/2016	1.11 (U)	2.69
12/7/2016	0.964 (U)	
12/8/2016		2.21
1/26/2017	0.612 (U)	2.26
3/22/2017	0.437 (U)	
3/23/2017		1.81
5/25/2017	1.21 (U)	1.63
4/3/2018	0.409 (U)	2.53
6/5/2018		1.91
6/6/2018	0.772 (U)	
10/3/2018	1.08 (U)	2.22
3/14/2019		1.37 (U)
3/15/2019	0.917 (U)	
4/5/2019	1.07 (U)	2.22
9/25/2019	1.54	2.77
3/3/2020	1.33	2.35
3/31/2020	0.591 (U)	2.7

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	7.27	5.81	7.45	6.51	6.62				
5/20/2016						7.58			
5/23/2016							4.56	6.17	7.15
7/11/2016	7.06	5.68		6.65	6.54	7.32			
7/12/2016			7.32				4.49	6.17	7.1
8/30/2016	7.28	5.63	7.43	7.14	6.38	7.69			
9/1/2016							4.54	6.22	7.29
10/19/2016	7.02	5.46	7.03	7.08					
10/20/2016					6.52	7.43			
10/24/2016							4.63	5.97	
10/25/2016									7.03
12/6/2016	7.09	5.38	7.08	7					
12/7/2016							4.6	5.87	6.85
12/8/2016					6.5	7.56			
1/24/2017	7.2	5.37	7.39	6.16	6.59	7.52			
1/26/2017							4.8	6.05	7.07
3/21/2017	7.01	4.9	6.83	6.07	6.55	7.4			
3/22/2017									7.15
3/23/2017							4.57	5.79	
5/22/2017	7.11	5.2	7.02						
5/23/2017				6.28	6.5	7.53			
5/24/2017							4.61	6.01	7.11
10/3/2017	7.21	5.3	7.47	6.45	6.63	7.51			
10/4/2017							4.74	5.82	7.17
4/2/2018	7.1	5.4		6.23					
4/3/2018			7.38		6.59	7.53		5.98	7.07
4/4/2018							4.5		
6/4/2018	7.06	5.27	7.38	6.82					
6/5/2018					6.44	7.37			
6/6/2018							4.49	6.12	7
10/1/2018	7.09	5.31	7.13	5.73					
10/2/2018					6.35	7.36			
10/3/2018							4.67	5.92	6.94
3/11/2019				6.27					
3/12/2019	7.03	5.42	7.29		6.42	7.5			
3/14/2019							4.66	5.71	
3/15/2019									7.09
4/1/2019			7.16						
4/2/2019	6.86	5.41		6.66	6.38	7.46			
4/4/2019								5.66	6.95
4/5/2019							4.67		
9/23/2019	7.02	5.33	7.3						
9/24/2019				6.16	6.4	7.41	4.77	6.33	
9/25/2019									6.92
3/2/2020	7.1	5.43	7.12	5.63	6.8	7.67			
3/3/2020							4.77	6	7.1
3/25/2020	6.95	5.36	7.4			7.39			
3/26/2020				5.77	6.38			6.03	
3/30/2020							4.57		7.09

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	6.4	
5/24/2016		4.83
7/12/2016	6.09	4.58
9/1/2016	6.35	4.51
10/25/2016	6.23	4.53
12/7/2016	6.23	
12/8/2016		4.56
1/26/2017	6.24	4.61
3/22/2017	6.25	
3/23/2017		4.63
5/25/2017	6.27	4.69
10/4/2017	6.18	4.58
4/3/2018	6.22	4.54
6/5/2018		4.57
6/6/2018	6.22	
10/3/2018	6.23	4.41
3/14/2019		4.39
3/15/2019	6.32	
4/5/2019	6.26	4.5
9/25/2019	6.28	4.54
3/3/2020	6.35	4.55
3/31/2020	6.28	4.43

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	0.105 (J)	0.0303 (J)	0.0513 (J)	0.036 (J)	0.08 (J)				
5/20/2016						0.065 (J)			
5/23/2016							<0.3	<0.3	0.038 (J)
7/11/2016	0.16 (J)	0.05 (J)		0.09 (J)	0.09 (J)	0.13 (J)			
7/12/2016			0.12 (J)				0.2 (J)	0.09 (J)	0.26 (J)
8/30/2016	0.09 (J)	0.06 (J)	0.09 (J)	0.06 (J)	0.08 (J)	0.07 (J)			
9/1/2016							0.08 (J)	0.22 (J)	0.42
10/19/2016	0.1 (J)	0.04 (J)	0.1 (J)	0.07 (J)					
10/20/2016					0.1 (J)	0.06 (J)			
10/24/2016							0.04 (J)	0.07 (J)	
10/25/2016									0.25 (J)
12/6/2016	0.11 (J)	0.36	0.21 (J)	0.07 (J)					
12/7/2016							0.11 (J)	0.23 (J)	0.23 (J)
12/8/2016					0.08 (J)	0.06 (J)			
1/24/2017	0.09 (J)	<0.3	0.06 (J)	<0.3	0.09 (J)	0.02 (J)			
1/26/2017							0.13 (J)	<0.3	0.02 (J)
3/21/2017	0.13 (J)	<0.3	0.005 (J)	<0.3	0.04 (J)	0.08 (J)			
3/22/2017									0.3
3/23/2017							0.28 (J)	0.12 (J)	
5/22/2017	0.12 (J)	<0.3	0.05 (J)						
5/23/2017				0.01 (J)	0.04 (J)	0.006 (J)			
5/24/2017							0.32	0.31	0.46
10/3/2017	0.13 (J)	<0.3	0.13 (J)	<0.3	0.06 (J)	<0.3			
10/4/2017							0.52	0.6	<0.3
4/2/2018	<0.3	<0.3		<0.3					
4/3/2018			<0.3		<0.3	<0.3		<0.3	<0.3
4/4/2018							<0.3		
6/4/2018	0.074 (J)	<0.3	<0.3	0.097 (J)					
6/5/2018					0.083 (J)	0.055 (J)			
6/6/2018							0.25 (J)	0.17 (J)	<0.3
10/1/2018	<0.3	<0.3	<0.3	<0.3					
10/2/2018					<0.3	0.076 (J)			
10/3/2018							0.21 (J)	<0.3	<0.3
3/11/2019				0.035 (J)					
3/12/2019	0.29 (J)	0.038 (J)	0.072 (J)		0.079 (J)	0.061 (J)			
3/14/2019							0.24 (J)	<0.3	
3/15/2019									<0.3
4/1/2019			0.029 (J)						
4/2/2019	0.1 (J)	0.071 (J)		<0.3	0.12 (J)	<0.3			
4/4/2019								0.066 (J)	<0.3
4/5/2019							0.66		
9/23/2019	0.078 (J)	<0.3	<0.3						
9/24/2019				<0.3	0.058 (J)	<0.3	0.053 (J)	0.12 (J)	
9/25/2019									<0.3
3/2/2020	0.076 (J)	<0.3	<0.3	<0.3	0.053 (J)	<0.3			
3/3/2020							<0.3	0.064 (J)	<0.3
3/25/2020	0.098 (J)	<0.3	<0.3			<0.3			
3/26/2020				<0.3	0.066 (J)			<0.3	
3/30/2020							0.092 (J)		0.059 (J)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.3	
5/24/2016		<0.3
7/12/2016	0.09 (J)	0.54
9/1/2016	0.03 (J)	0.49
10/25/2016	0.07 (J)	0.58
12/7/2016	0.54	
12/8/2016		0.63
1/26/2017	<0.3	0.71
3/22/2017	0.07 (J)	
3/23/2017		0.57
5/25/2017	0.42	0.54
10/4/2017	0.93	0.95
4/3/2018	<0.3	0.33
6/5/2018		0.66
6/6/2018	0.23 (J)	
10/3/2018	<0.3	0.32
3/14/2019		0.88
3/15/2019	<0.3	
4/5/2019	0.16 (J)	0.37
9/25/2019	0.081 (J)	0.73
3/3/2020	<0.3	0.34
3/31/2020	<0.3	0.45

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.005	<0.005	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
5/23/2016							0.00182 (J)	<0.005	<0.005
7/11/2016	<0.005	<0.005		<0.005	<0.005	<0.005			
7/12/2016			0.0001 (J)				0.0015 (J)	<0.005	<0.005
8/30/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
9/1/2016							0.0016 (J)	<0.005	<0.005
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					0.0002 (J)	<0.005			
10/24/2016							0.0016 (J)	<0.005	
10/25/2016									<0.005
12/6/2016	<0.005	<0.005	<0.005	0.0002 (J)					
12/7/2016							0.0018 (J)	<0.005	<0.005
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
1/26/2017							0.002 (J)	<0.005	0.0001 (J)
3/21/2017	<0.005	6E-05 (J)	0.0001 (J)	<0.005	<0.005	<0.005			
3/22/2017									0.0002 (J)
3/23/2017							0.0019 (J)	0.001 (J)	
5/22/2017	<0.005	9E-05 (J)	<0.005						
5/23/2017				<0.005	9E-05 (J)	0.0003 (J)			
5/24/2017							0.0016 (J)	0.0001 (J)	0.0001 (J)
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005		<0.005	<0.005
4/4/2018							<0.005		
3/11/2019				<0.005					
3/12/2019	<0.005	<0.005	<0.005		<0.005	<0.005			
3/14/2019							0.0014 (J)	<0.005	
3/15/2019									<0.005
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019								7.2E-05 (J)	0.00016 (J)
4/5/2019							0.0012 (J)		
9/23/2019	7.8E-05 (J)	9.2E-05 (J)	<0.005						
9/24/2019				<0.005	<0.005	7.1E-05 (J)	0.0013 (J)	0.0002 (J)	
9/25/2019									<0.005
3/2/2020	4.8E-05 (J)	9.5E-05 (J)	<0.005	0.00026 (J)	<0.005	<0.005			
3/3/2020							0.0017 (J)	5.3E-05 (J)	0.00016 (J)
3/25/2020	<0.005	0.00011 (J)	<0.005			<0.005			
3/26/2020				5.9E-05 (J)	<0.005			<0.005	
3/30/2020							0.0015 (J)		7.3E-05 (J)

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.005	
5/24/2016		0.00154 (J)
7/12/2016	<0.005	0.0012 (J)
9/1/2016	<0.005	0.0014 (J)
10/25/2016	<0.005	0.0015 (J)
12/7/2016	<0.005	
12/8/2016		0.0017 (J)
1/26/2017	<0.005	0.0013 (J)
3/22/2017	0.0001 (J)	
3/23/2017		0.001 (J)
5/25/2017	<0.005	0.0012 (J)
4/3/2018	<0.005	<0.005
3/14/2019		0.0015 (J)
3/15/2019	<0.005	
4/5/2019	7.6E-05 (J)	0.0015 (J)
9/25/2019	8.9E-05 (J)	0.0015 (J)
3/3/2020	0.00013 (J)	0.0013 (J)
3/31/2020	7.7E-05 (J)	0.0014 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.03	<0.03	<0.03	<0.03	<0.03				
5/20/2016						<0.03			
5/23/2016							<0.03	<0.03	<0.03
7/11/2016	<0.03	0.0014 (J)		0.0015 (J)	0.0034 (J)	0.01 (J)			
7/12/2016			0.0024 (J)				<0.03	<0.03	0.0037 (J)
8/30/2016	<0.03	<0.03	0.0025 (J)	0.0027 (J)	0.003 (J)	0.0095 (J)			
9/1/2016							<0.03	0.0021 (J)	0.0033 (J)
10/19/2016	<0.03	<0.03	0.003 (J)	0.0042 (J)					
10/20/2016					0.0031 (J)	0.0105 (J)			
10/24/2016							<0.03	<0.03	
10/25/2016									0.0029 (J)
12/6/2016	<0.03	<0.03	0.0033 (J)	0.0046 (J)					
12/7/2016							<0.03	<0.03	0.0029 (J)
12/8/2016					0.0027 (J)	0.01 (J)			
1/24/2017	<0.03	<0.03	0.003 (J)	<0.03	0.0028 (J)	0.0108 (J)			
1/26/2017							<0.03	<0.03	0.0028 (J)
3/21/2017	<0.03	0.0012 (J)	0.0034 (J)	<0.03	0.0037 (J)	0.0115 (J)			
3/22/2017									0.0025 (J)
3/23/2017							<0.03	0.0016 (J)	
5/22/2017	<0.03	<0.03	0.003 (J)						
5/23/2017				<0.03	0.0033 (J)	0.011 (J)			
5/24/2017							<0.03	0.0029 (J)	0.0029 (J)
4/2/2018	<0.03	0.0015 (J)		<0.03					
4/3/2018			0.003 (J)		0.0033 (J)	0.012 (J)		0.0026 (J)	0.0028 (J)
4/4/2018							<0.03		
6/4/2018	0.001 (J)	0.0016 (J)	0.0027 (J)	0.00097 (J)					
6/5/2018					0.0034 (J)	0.011 (J)			
6/6/2018							<0.03	0.0013 (J)	0.0031 (J)
10/1/2018	0.00099 (J)	0.0013 (J)	0.0032 (J)	<0.03					
10/2/2018					0.0035 (J)	0.01 (J)			
10/3/2018							<0.03	0.0017 (J)	0.0026 (J)
3/11/2019				<0.03					
3/12/2019	0.001 (J)	0.0018 (J)	0.0032 (J)		0.0032 (J)	0.011 (J)			
3/14/2019							<0.03	<0.03	
3/15/2019									0.0041 (J)
4/1/2019			0.0032 (J)						
4/2/2019	0.001 (J)	0.0018 (J)		0.00098 (J)	0.0028 (J)	0.0095 (J)			
4/4/2019								0.0009 (J)	0.0032 (J)
4/5/2019							<0.03		
9/23/2019	0.0011 (J)	0.0016 (J)	0.0029 (J)						
9/24/2019				<0.03	0.0035 (J)	0.011 (J)	<0.03	0.0012 (J)	
9/25/2019									0.0038 (J)
3/2/2020	0.0012 (J)	0.0017 (J)	0.0037 (J)	0.0012 (J)	0.0036 (J)	0.012			
3/3/2020							<0.03	0.0084 (J)	0.0047 (J)
3/25/2020	0.00083 (J)	0.0017 (J)	0.0035 (J)			0.011 (J)			
3/26/2020				0.00095 (J)	0.0029 (J)			0.0061 (J)	
3/30/2020							<0.03		0.0041 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.03	
5/24/2016		0.0142 (J)
7/12/2016	<0.03	0.0141 (J)
9/1/2016	<0.03	0.0158 (J)
10/25/2016	<0.03	0.016 (J)
12/7/2016	<0.03	
12/8/2016		0.0144 (J)
1/26/2017	<0.03	0.0136 (J)
3/22/2017	<0.03	
3/23/2017		0.0151 (J)
5/25/2017	0.0011 (J)	0.0154 (J)
4/3/2018	<0.03	0.013 (J)
6/5/2018		0.013 (J)
6/6/2018	<0.03	
10/3/2018	<0.03	0.015 (J)
3/14/2019		0.011 (J)
3/15/2019	0.0011 (J)	
4/5/2019	0.00074 (J)	0.0084 (J)
9/25/2019	0.0011 (J)	0.015 (J)
3/3/2020	0.0012 (J)	0.012 (J)
3/31/2020	0.0009 (J)	0.012 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
5/20/2016						<0.0005			
5/23/2016							<0.0005	<0.0005	<0.0005
7/11/2016	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			
7/12/2016			<0.0005				<0.0005	<0.0005	<0.0005
8/30/2016	4E-05 (J)	4E-05 (J)	<0.0005	5E-05 (J)	<0.0005	4.4E-05 (J)			
9/1/2016							<0.0005	<0.0005	<0.0005
10/19/2016	<0.0005	<0.0005	<0.0005	<0.0005					
10/20/2016					<0.0005	<0.0005			
10/24/2016							<0.0005	<0.0005	
10/25/2016									<0.0005
12/6/2016	<0.0005	<0.0005	<0.0005	5E-05 (J)					
12/7/2016							<0.0005	<0.0005	<0.0005
12/8/2016					<0.0005	<0.0005			
1/24/2017	<0.0005	<0.0005	<0.0005	0.0001 (J)	<0.0005	<0.0005			
1/26/2017							<0.0005	<0.0005	<0.0005
3/21/2017	<0.0005	<0.0005	<0.0005	0.00016 (J)	<0.0005	<0.0005			
3/22/2017									<0.0005
3/23/2017							<0.0005	<0.0005	
5/22/2017	<0.0005	<0.0005	<0.0005						
5/23/2017				5E-05 (J)	<0.0005	<0.0005			
5/24/2017							<0.0005	<0.0005	<0.0005
4/2/2018	<0.0005	<0.0005		<0.0005					
4/3/2018			<0.0005		<0.0005	<0.0005		<0.0005	<0.0005
4/4/2018							<0.0005		
3/11/2019				<0.0005					
3/12/2019	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005			
3/14/2019							<0.0005	<0.0005	
3/15/2019									<0.0005
3/2/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			
3/3/2020							<0.0005	<0.0005	<0.0005

Time Series

Constituent: Mercury (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.0005	
5/24/2016		<0.0005
7/12/2016	<0.0005	<0.0005
9/1/2016	<0.0005	6E-05 (J)
10/25/2016	<0.0005	4E-05 (J)
12/7/2016	<0.0005	
12/8/2016		<0.0005
1/26/2017	<0.0005	8E-05 (J)
3/22/2017	<0.0005	
3/23/2017		9E-05 (J)
5/25/2017	<0.0005	8E-05 (J)
4/3/2018	<0.0005	<0.0005
3/14/2019		<0.0005
3/15/2019	<0.0005	
3/3/2020	<0.0005	<0.0005

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							<0.01	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	0.0008 (J)			
7/12/2016			<0.01				<0.01	0.0007 (J)	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							<0.01	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							<0.01	<0.01	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							<0.01	<0.01	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
1/26/2017							<0.01	<0.01	<0.01
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	0.0002 (J)			
3/22/2017									<0.01
3/23/2017							<0.01	<0.01	
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							<0.01	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							<0.01		
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							<0.01	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019								<0.01	<0.01
4/5/2019							<0.01		
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01	<0.01	<0.01	
9/25/2019									<0.01
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/3/2020							<0.01	<0.01	<0.01
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							<0.01		<0.01

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.01	
5/24/2016		<0.01
7/12/2016	<0.01	<0.01
9/1/2016	<0.01	<0.01
10/25/2016	<0.01	<0.01
12/7/2016	<0.01	
12/8/2016		<0.01
1/26/2017	<0.01	<0.01
3/22/2017	<0.01	
3/23/2017		<0.01
5/25/2017	<0.01	<0.01
4/3/2018	<0.01	<0.01
3/14/2019		<0.01
3/15/2019	<0.01	
4/5/2019	<0.01	<0.01
9/25/2019	<0.01	<0.01
3/3/2020	<0.01	<0.01
3/31/2020	<0.01	<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
5/23/2016							0.017	<0.01	<0.01
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01				0.0146	<0.01	<0.01
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
9/1/2016							0.0137	<0.01	<0.01
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
10/24/2016							0.0135	0.0012 (J)	
10/25/2016									<0.01
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/7/2016							0.01 (J)	0.0041 (J)	<0.01
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	0.0011 (J)	<0.01			
1/26/2017							0.0214	<0.01	<0.01
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/22/2017									<0.01
3/23/2017							0.0167	0.0016 (J)	
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
5/24/2017							0.0083 (J)	<0.01	<0.01
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01		<0.01	<0.01
4/4/2018							0.012		
6/4/2018	<0.01	<0.01	<0.01	<0.01					
6/5/2018					<0.01	<0.01			
6/6/2018							0.014	<0.01	<0.01
10/1/2018	<0.01	<0.01	<0.01	<0.01					
10/2/2018					<0.01	<0.01			
10/3/2018							0.0056 (J)	<0.01	<0.01
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019							0.0048 (J)	<0.01	
3/15/2019									<0.01
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019								0.00021 (J)	8.9E-05 (J)
4/5/2019							0.00091 (J)		
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01	0.0064 (J)	<0.01	
9/25/2019									<0.01
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/3/2020							0.0045 (J)	<0.01	<0.01
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01			<0.01	
3/30/2020							0.0049 (J)		<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.01	
5/24/2016		<0.01
7/12/2016	<0.01	0.036
9/1/2016	0.0014 (J)	0.0347
10/25/2016	<0.01	0.0282
12/7/2016	0.0023 (J)	
12/8/2016		0.0373
1/26/2017	<0.01	0.0385
3/22/2017	<0.01	
3/23/2017		0.0414
5/25/2017	<0.01	0.019
4/3/2018	<0.01	0.029
6/5/2018		0.038
6/6/2018	<0.01	
10/3/2018	<0.01	0.017
3/14/2019		0.016
3/15/2019	<0.01	
4/5/2019	9.3E-05 (J)	0.0018 (J)
9/25/2019	<0.01	0.02
3/3/2020	<0.01	0.014
3/31/2020	<0.01	0.019

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	66.9	48.6	42.3	1.22	25				
5/20/2016						34.4			
5/23/2016							1070	424	203
7/11/2016	41	45		3.7	27	34			
7/12/2016			44				1300	440	220
8/30/2016	36	42	40	6.8	23	36			
9/1/2016							1300	440	220
10/19/2016	46	44	43	11					
10/20/2016					19	36			
10/24/2016							280	420	
10/25/2016									230
12/6/2016	59	44	43	13					
12/7/2016							1300	450	220
12/8/2016					20	36			
1/24/2017	46	46	48	5.7	20	37			
1/26/2017							1400	490	250
3/21/2017	63	46	45	1.7	23	37			
3/22/2017									240
3/23/2017							1500	530	
5/22/2017	77	48	46						
5/23/2017				1.5	21	38			
5/24/2017							1400	500	230
10/3/2017	42	47	48	1.3	21	38			
10/4/2017							1400	560	220
6/4/2018	71.8	47.8	46.6	4.9					
6/5/2018					22.9	38			
6/6/2018							1520	469	233
10/1/2018	49.1	48.1	48.6	0.59 (J)					
10/2/2018					20.3	38.5			
10/3/2018							1550	600	215
4/1/2019			50.4						
4/2/2019	84.3	48.7		4.9	23.8	35.5			
4/4/2019								528	251
4/5/2019							1520		
9/23/2019	70.2	47.2	43.9						
9/24/2019				<1	20.7	35.4	1110	382	
9/25/2019									223
3/25/2020	85.9	46.3	50.5			35.1			
3/26/2020				<1	21.6			438	
3/30/2020							1150		223

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	395	
5/24/2016		834
7/12/2016	460	930
9/1/2016	430	890
10/25/2016	440	950
12/7/2016	410	
12/8/2016		910
1/26/2017	440	970
3/22/2017	460	
3/23/2017		980
5/25/2017	430	920
10/4/2017	490	870
6/5/2018		962
6/6/2018	520	
10/3/2018	651	1170
4/5/2019	642	1030
9/25/2019	434	920
3/31/2020	484	934

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	<0.001	<0.001	<0.001	<0.001	<0.001				
5/20/2016						<0.001			
5/23/2016							0.000306 (J)	<0.001	<0.001
7/11/2016	<0.001	<0.001		<0.001	<0.001	<0.001			
7/12/2016			<0.001				0.0003 (J)	<0.001	<0.001
8/30/2016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
9/1/2016							0.0003 (J)	<0.001	<0.001
10/19/2016	<0.001	<0.001	<0.001	<0.001					
10/20/2016					<0.001	<0.001			
10/24/2016							0.0004	<0.001	
10/25/2016									<0.001
12/6/2016	<0.001	<0.001	<0.001	<0.001					
12/7/2016							0.0003 (J)	<0.001	<0.001
12/8/2016					<0.001	<0.001			
1/24/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
1/26/2017							0.0003 (J)	<0.001	<0.001
3/21/2017	<0.001	3E-05 (J)	<0.001	<0.001	<0.001	<0.001			
3/22/2017									<0.001
3/23/2017							0.0003 (J)	<0.001	
5/22/2017	<0.001	<0.001	<0.001						
5/23/2017				<0.001	<0.001	<0.001			
5/24/2017							0.0003 (J)	<0.001	<0.001
4/2/2018	<0.001	<0.001		<0.001					
4/3/2018			<0.001		<0.001	<0.001		<0.001	<0.001
4/4/2018							0.00028 (J)		
6/4/2018	<0.001	<0.001	<0.001	<0.001					
6/5/2018					<0.001	<0.001			
6/6/2018							0.00029 (J)	<0.001	<0.001
10/1/2018	<0.001	<0.001	<0.001	<0.001					
10/2/2018					<0.001	<0.001			
10/3/2018							0.00029 (J)	<0.001	<0.001
3/11/2019				<0.001					
3/12/2019	<0.001	<0.001	<0.001		<0.001	<0.001			
3/14/2019							0.00028 (J)	<0.001	
3/15/2019									<0.001
4/1/2019			<0.001						
4/2/2019	<0.001	<0.001		<0.001	<0.001	<0.001			
4/4/2019								<0.001	<0.001
4/5/2019							0.00028 (J)		
9/23/2019	<0.001	<0.001	<0.001						
9/24/2019				<0.001	<0.001	<0.001	0.0003 (J)	<0.001	
9/25/2019									<0.001
3/2/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
3/3/2020							0.00026 (J)	<0.001	<0.001
3/25/2020	<0.001	<0.001	<0.001			5.7E-05 (J)			
3/26/2020				<0.001	<0.001			<0.001	
3/30/2020							0.00028 (J)		<0.001

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	<0.001	
5/24/2016		<0.001
7/12/2016	0.0001 (J)	0.0002 (J)
9/1/2016	<0.001	<0.001
10/25/2016	<0.001	<0.001
12/7/2016	<0.001	
12/8/2016		<0.001
1/26/2017	<0.001	<0.001
3/22/2017	0.0001 (J)	
3/23/2017		0.0002 (J)
5/25/2017	0.0001 (J)	0.0002 (J)
4/3/2018	<0.001	0.00014 (J)
6/5/2018		0.00016 (J)
6/6/2018	<0.001	
10/3/2018	<0.001	<0.001
3/14/2019		<0.001
3/15/2019	<0.001	
4/5/2019	0.00013 (J)	0.00014 (J)
9/25/2019	0.00012 (J)	0.00019 (J)
3/3/2020	0.00011 (J)	0.00013 (J)
3/31/2020	0.00014 (J)	0.00015 (J)

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	HGWC-14	HGWC-15	HGWC-16
5/19/2016	421	143	267	165	168				
5/20/2016						223			
5/23/2016							4130	1270	570
7/11/2016	363	125		266	158	225			
7/12/2016			249				3140	1100	585
8/30/2016	330	168	254	292	141	232			
9/1/2016							3200	1180	625
10/19/2016	380	176	357	338					
10/20/2016					99	225			
10/24/2016							2920	1090	
10/25/2016									563
12/6/2016	377	145	285	356					
12/7/2016							2740	1040	561
12/8/2016					116	235			
1/24/2017	342	129	300	131	156	272			
1/26/2017							3080	1260	608
3/21/2017	340	103	288	132	144	222			
3/22/2017									599
3/23/2017							3060	1360	
5/22/2017	338	92	263						
5/23/2017				183	134	231			
5/24/2017							3140	1320	598
10/3/2017	343	127	300	161	147	243			
10/4/2017							3210	1340	626
6/4/2018	415	140	266	240					
6/5/2018					152	235			
6/6/2018							2620	1120	678
10/1/2018	354	135	291	106					
10/2/2018					146	228			
10/3/2018							2430	1140	700
4/1/2019			284						
4/2/2019	452	133		230	144	238			
4/4/2019								926	704
4/5/2019							2310		
9/23/2019	442	129	268						
9/24/2019				131	133	222	2470	1140	
9/25/2019									813
3/25/2020	496	138	284			240			
3/26/2020				69	104			1000	
3/30/2020							2590		787

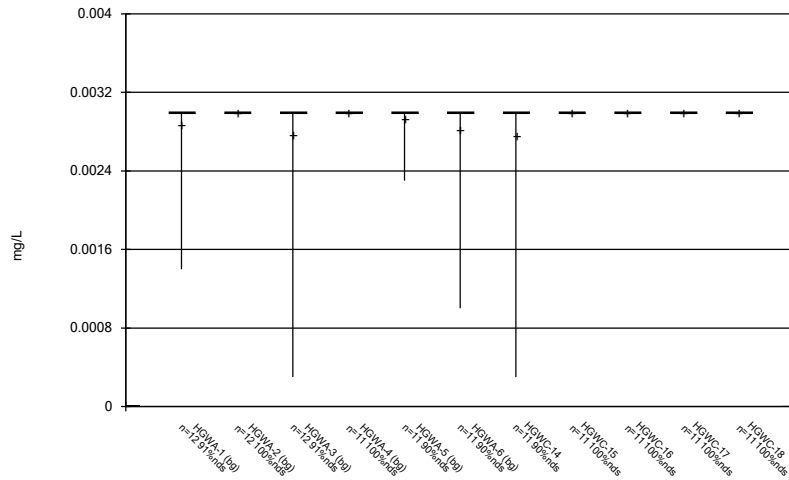
Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/23/2016	1010	
5/24/2016		1900
7/12/2016	976	1950
9/1/2016	1060	2000
10/25/2016	<25	1870
12/7/2016	866	
12/8/2016		1930
1/26/2017	1000	1950
3/22/2017	1080	
3/23/2017		2080
5/25/2017	1080	1970
10/4/2017	1210	2200
6/5/2018		1880
6/6/2018	1180	
10/3/2018	1250	2180
4/5/2019	1260	1610
9/25/2019	1280	1960
3/31/2020	1310	1860

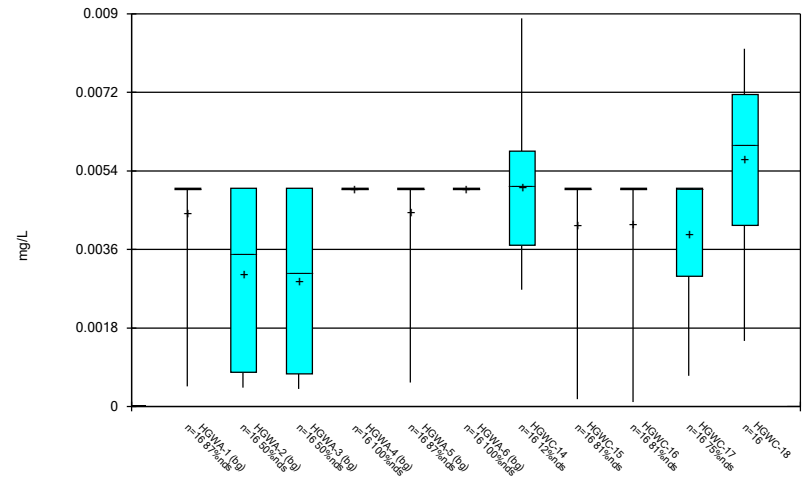
FIGURE B.

Box & Whiskers Plot



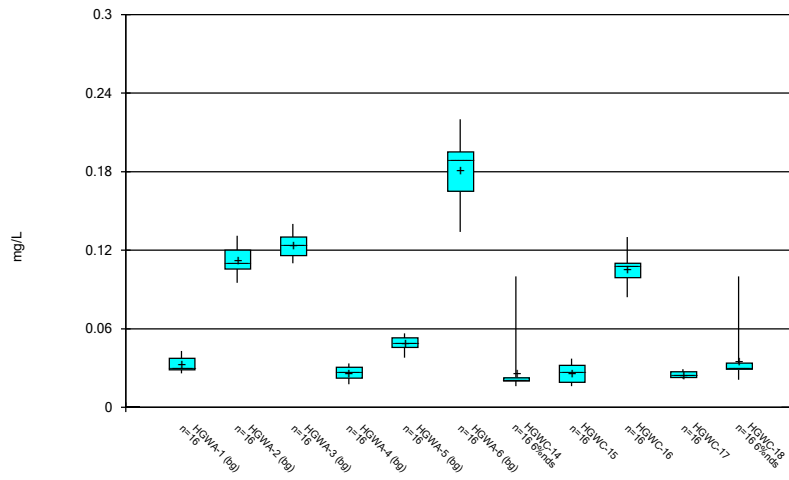
Constituent: Antimony Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



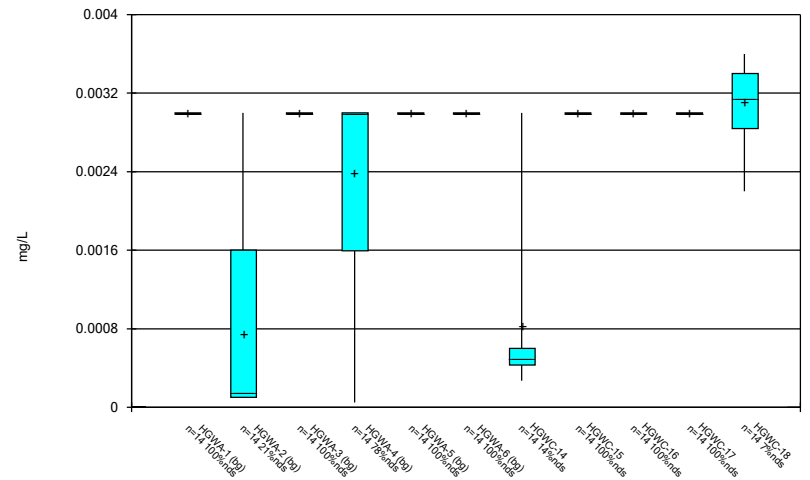
Constituent: Arsenic Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



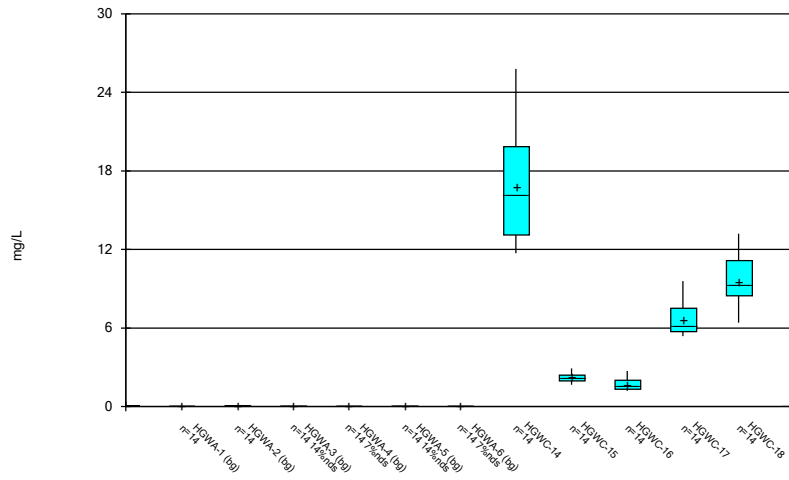
Constituent: Barium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



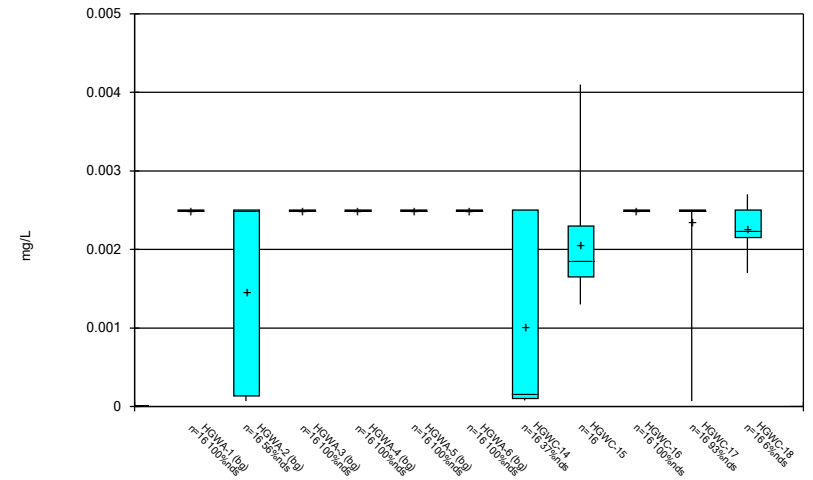
Constituent: Beryllium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



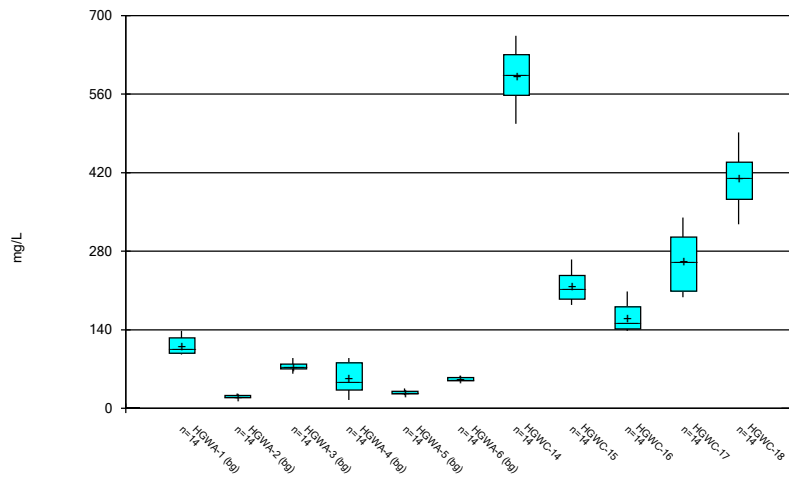
Constituent: Boron Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



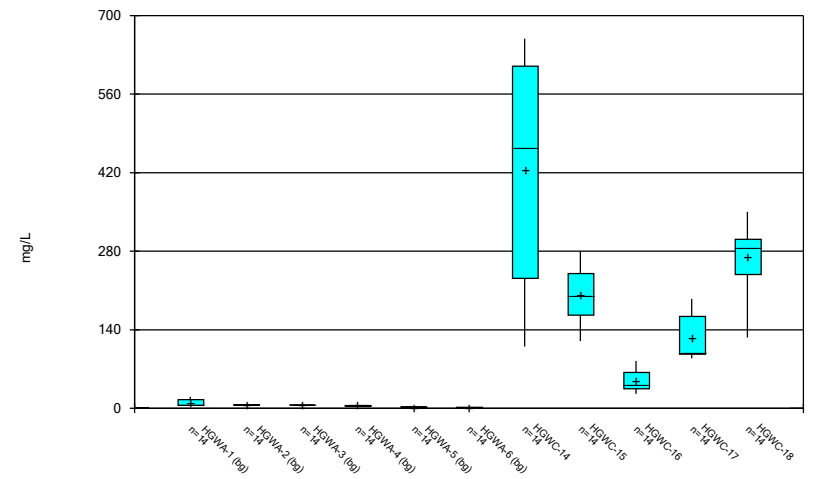
Constituent: Cadmium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



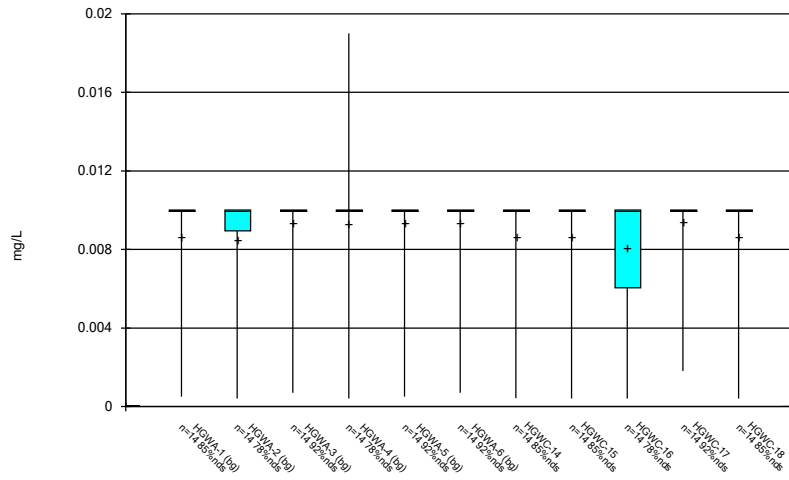
Constituent: Calcium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



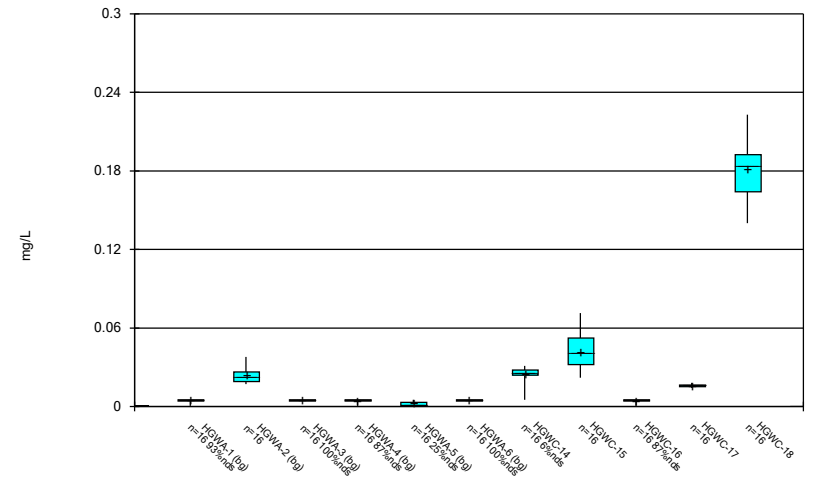
Constituent: Chloride Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



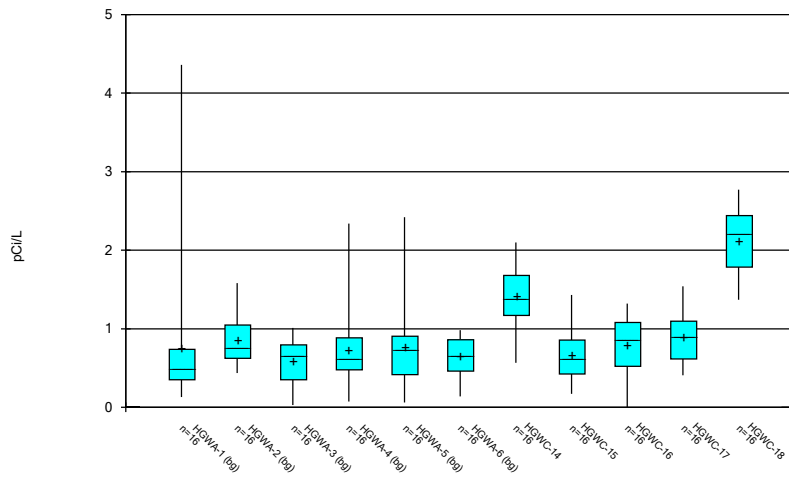
Constituent: Chromium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



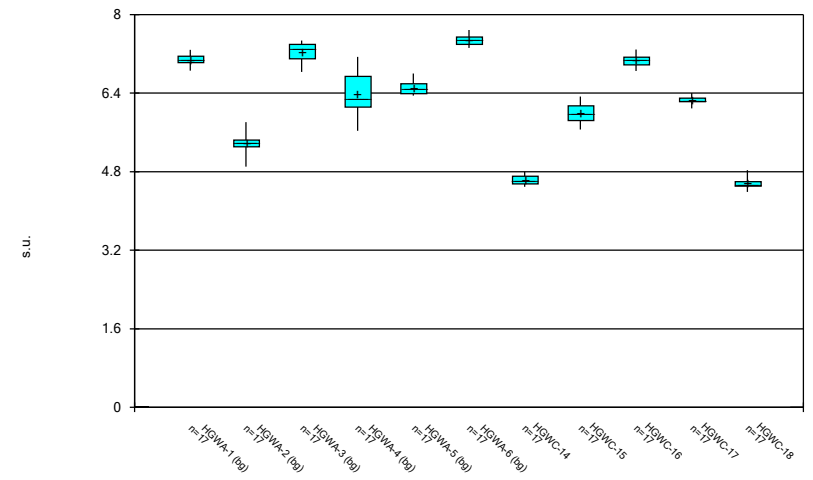
Constituent: Cobalt Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



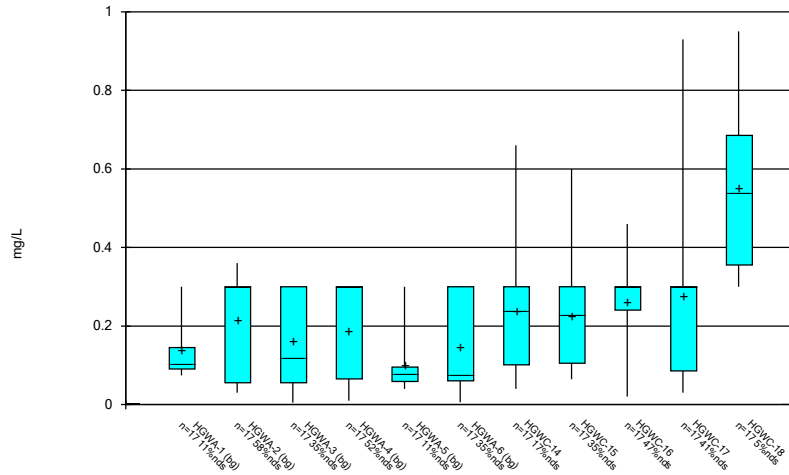
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



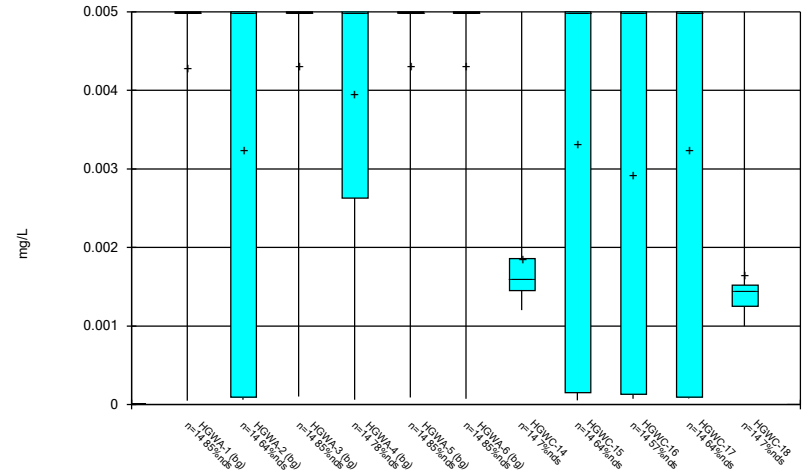
Constituent: Field pH Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



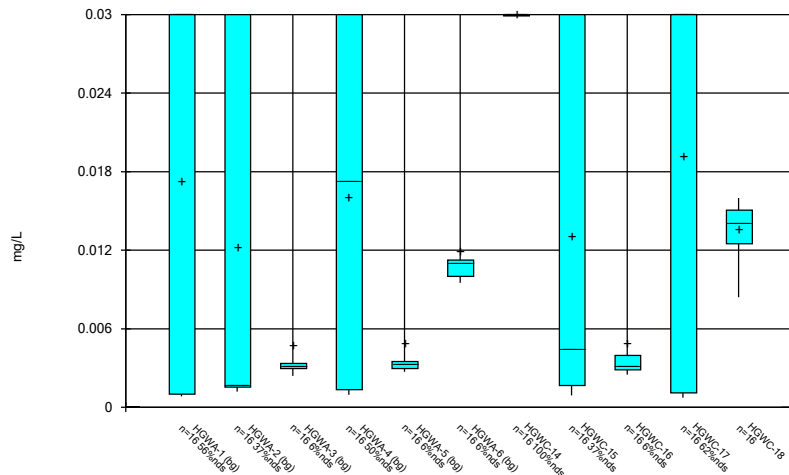
Constituent: Fluoride Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



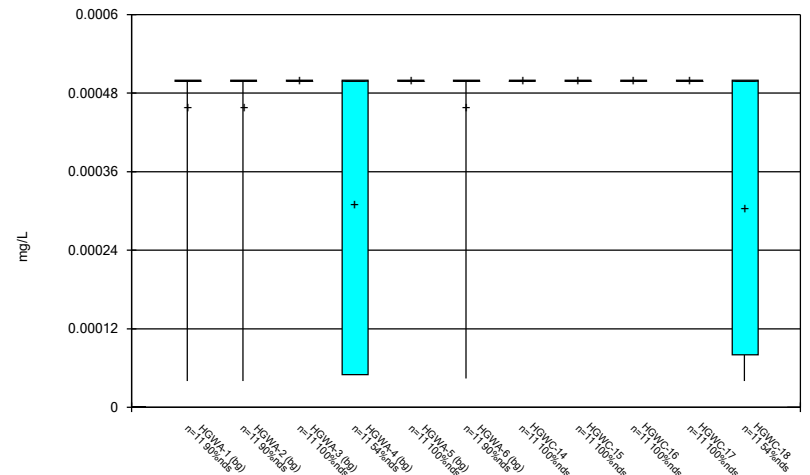
Constituent: Lead Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



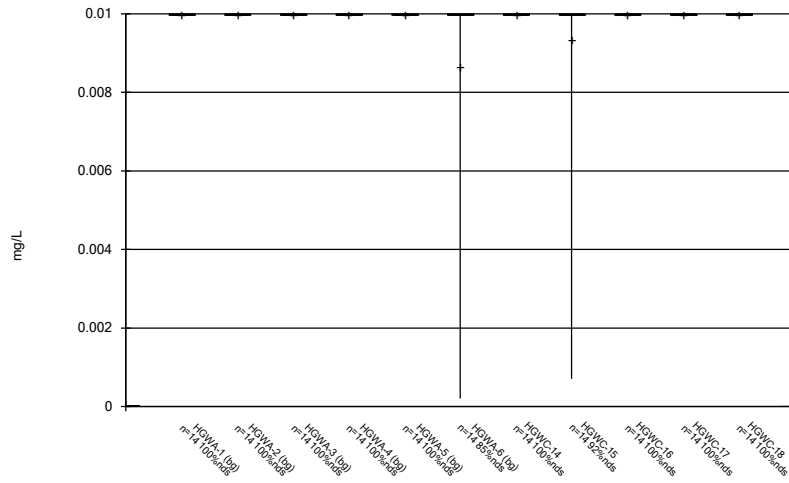
Constituent: Lithium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



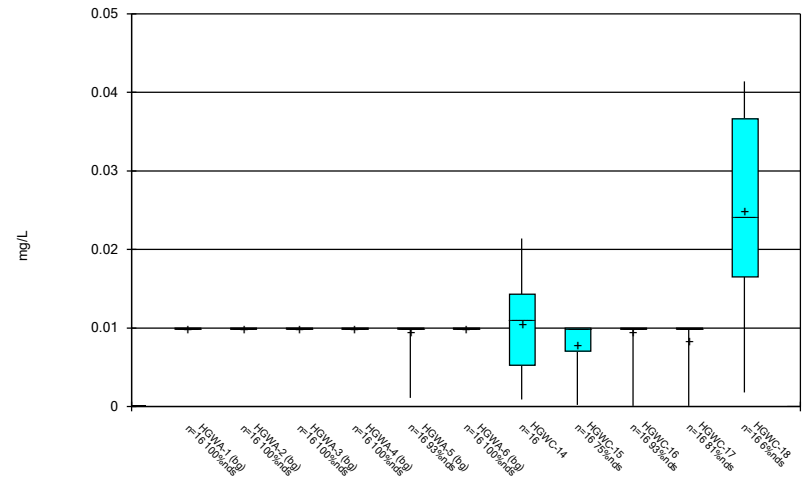
Constituent: Mercury Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



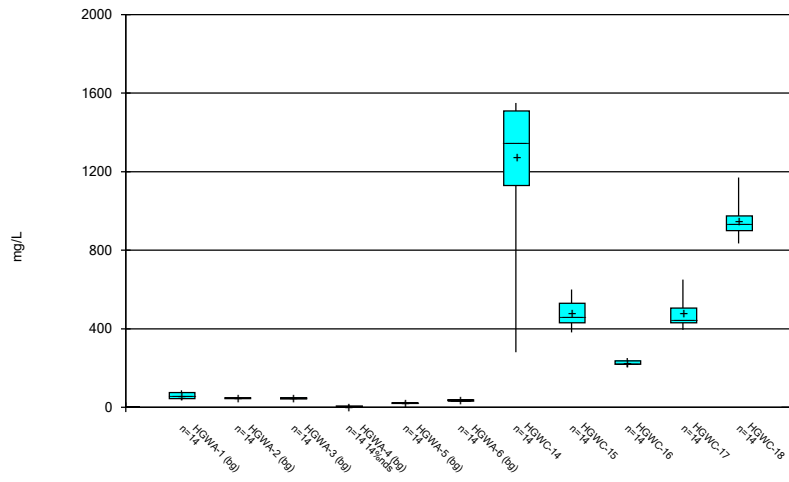
Constituent: Molybdenum Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



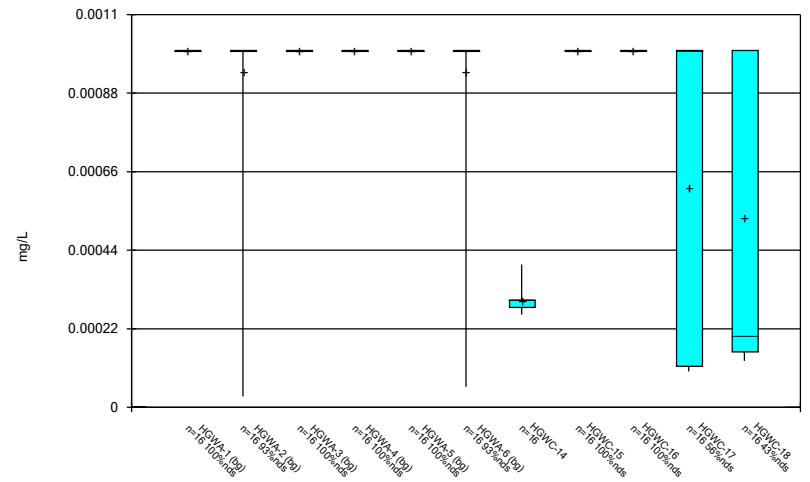
Constituent: Selenium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



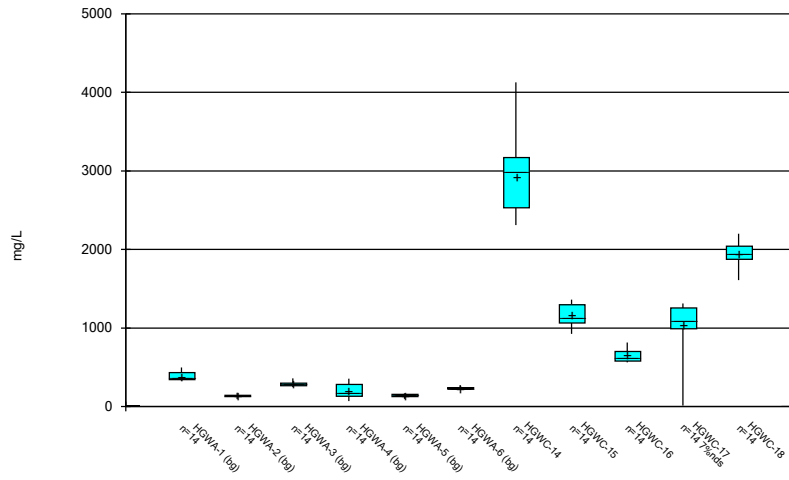
Constituent: Sulfate Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Thallium Analysis Run 8/11/2020 8:44 AM View: Descriptive
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:44 AM View: Descriptive
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE C.

Outlier Summary

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:23 PM

No outliers identified.

FIGURE D.

Interwell Prediction Limit Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

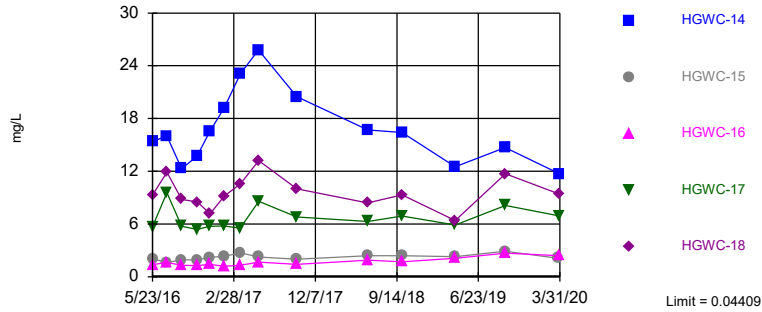
Interwell Prediction Limit Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	HGWC-14	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-15	0.04409	n/a	3/26/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-16	0.04409	n/a	3/30/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-17	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	HGWC-18	0.04409	n/a	3/31/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-14	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-15	128.9	n/a	3/26/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-16	128.9	n/a	3/30/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-17	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	HGWC-18	128.9	n/a	3/31/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	HGWC-14	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-15	20.4	n/a	3/26/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-16	20.4	n/a	3/30/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-17	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	HGWC-18	20.4	n/a	3/31/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-14	7.69	4.9	3/30/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-15	7.69	4.9	3/26/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-16	7.69	4.9	3/30/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-17	7.69	4.9	3/31/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	HGWC-18	7.69	4.9	3/31/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-14	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-15	0.36	n/a	3/26/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-16	0.36	n/a	3/30/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-17	0.36	n/a	3/31/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	HGWC-18	0.36	n/a	3/31/2020	Yes	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-14	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-15	85.9	n/a	3/26/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-16	85.9	n/a	3/30/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-17	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	HGWC-18	85.9	n/a	3/31/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	HGWC-14	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-15	425	n/a	3/26/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-16	425	n/a	3/30/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-17	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	HGWC-18	425	n/a	3/31/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric

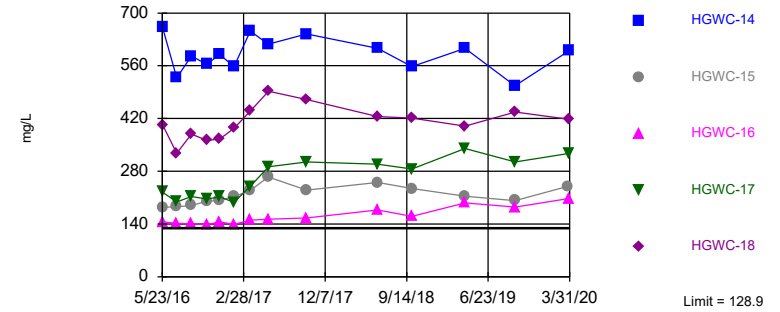


Background Data Summary (based on natural log transformation): Mean=-4.169, Std. Dev.=0.5776, n=84, 7.143% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.974, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Boron Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric

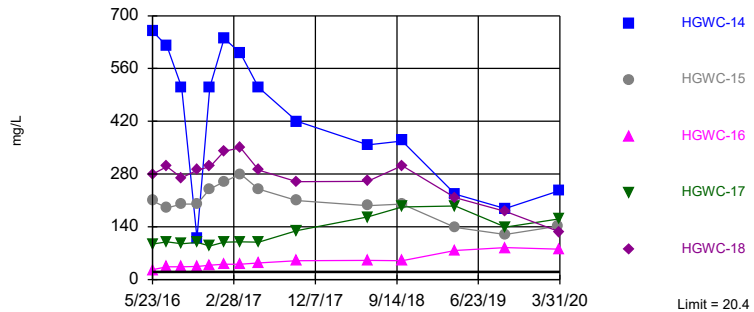


Background Data Summary (based on cube root transformation): Mean=3.704, Std. Dev.=0.743, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9612, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Calcium Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15, HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Non-parametric

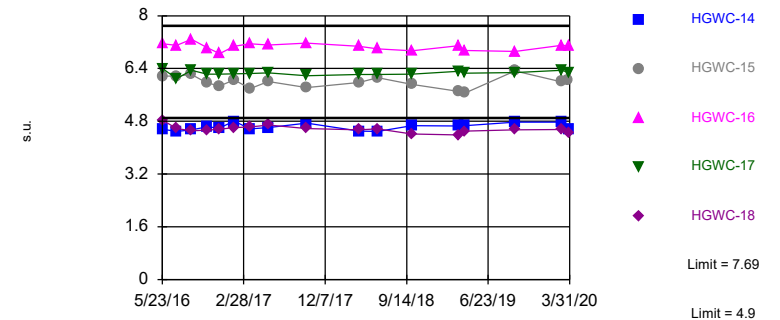


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 5 points to limit.

Constituent: Chloride Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limits: HGWC-14, HGWC-18

Prediction Limit
Interwell Non-parametric

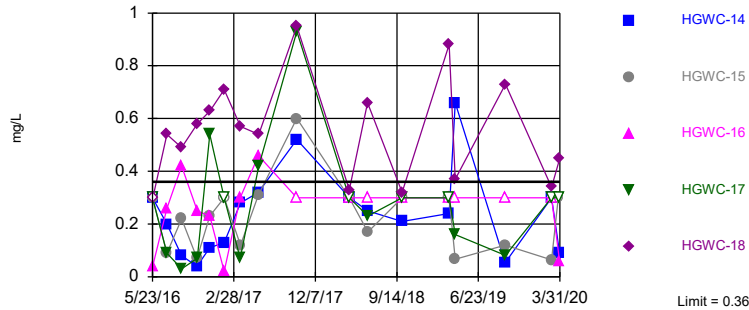


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 102 background values. Annual per-constituent alpha = 0.003748. Individual comparison alpha = 0.0003751 (1 of 2). Comparing 5 points to limit.

Constituent: Field pH Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-18

Prediction Limit
Interwell Non-parametric

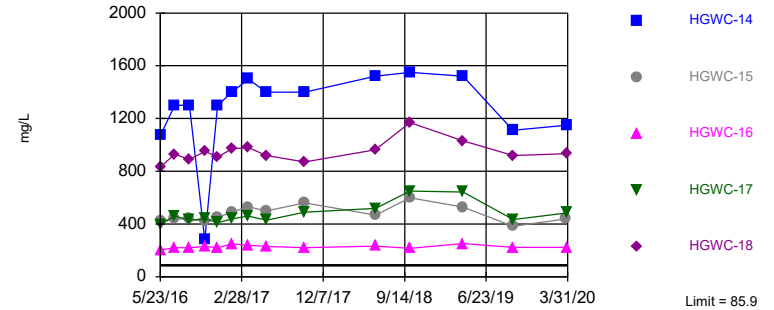


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 102 background values. 34.31% NDs. Annual per-constituent alpha = 0.001874. Individual comparison alpha = 0.0001875 (1 of 2). Comparing 5 points to limit.

Constituent: Fluoride Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15,
HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Non-parametric

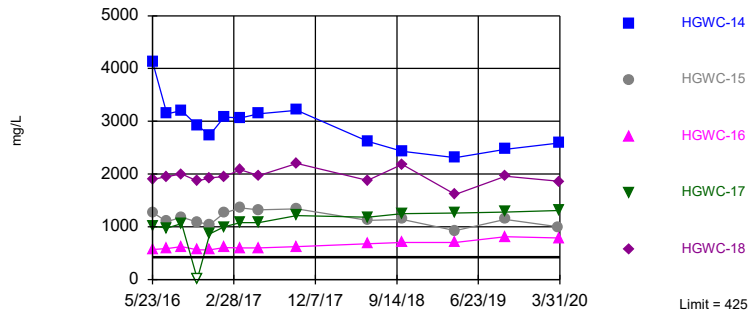


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. 2.381% NDs. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 5 points to limit.

Constituent: Sulfate Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: HGWC-14, HGWC-15,
HGWC-16, HGWC-17, HGWC-18

Prediction Limit
Interwell Parametric



Background Data Summary (based on square root transformation): Mean=14.8, Std. Dev.=3.207, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9706, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:36 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	5.7	
5/24/2016		9.33
7/11/2016		
7/12/2016	9.58	11.9
8/30/2016		
9/1/2016	5.76	8.8
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	5.38	8.5
12/6/2016		
12/7/2016	5.74	
12/8/2016		7.15
1/24/2017		
1/26/2017	5.78	9.17
3/21/2017		
3/22/2017	5.52	
3/23/2017		10.6
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	8.58	13.2
10/3/2017		
10/4/2017	6.8	10
6/4/2018		
6/5/2018		8.4
6/6/2018	6.3	
10/1/2018		
10/2/2018		
10/3/2018	6.9	9.3
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	5.9	6.4
9/23/2019		
9/24/2019		
9/25/2019	8.1	11.7
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	6.9	9.4

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	225	
5/24/2016		403
7/11/2016		
7/12/2016	199	328
8/30/2016		
9/1/2016	213	379
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	206	362
12/6/2016		
12/7/2016	212	
12/8/2016		366
1/24/2017		
1/26/2017	198	394
3/21/2017		
3/22/2017	239	
3/23/2017		440
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	292	492
10/3/2017		
10/4/2017	305	470
6/4/2018		
6/5/2018		425
6/6/2018	299	
10/1/2018		
10/2/2018		
10/3/2018	286	421
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	340	400
9/23/2019		
9/24/2019		
9/25/2019	305	437
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	328	418

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	94	
5/24/2016		280
7/11/2016		
7/12/2016	100	300
8/30/2016		
9/1/2016	95	270
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	98	290
12/6/2016		
12/7/2016	89	
12/8/2016		300
1/24/2017		
1/26/2017	99	340
3/21/2017		
3/22/2017	100	
3/23/2017		350
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	99	290
10/3/2017		
10/4/2017	130	260
6/4/2018		
6/5/2018		261
6/6/2018	166	
10/1/2018		
10/2/2018		
10/3/2018	193	302
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	195	217
9/23/2019		
9/24/2019		
9/25/2019	139	181
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	161	126

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-16	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	7.15	
5/24/2016		4.83
7/11/2016		
7/12/2016	7.1	4.58
8/30/2016		
9/1/2016	7.29	4.51
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	7.03	4.53
12/6/2016		
12/7/2016	6.85	
12/8/2016		4.56
1/24/2017		
1/26/2017	7.07	4.61
3/21/2017		
3/22/2017	7.15	
3/23/2017		4.63
5/22/2017		
5/23/2017		
5/24/2017	7.11	
5/25/2017		4.69
10/3/2017		
10/4/2017	7.17	4.58
4/2/2018		
4/3/2018	7.07	4.54
4/4/2018		
6/4/2018		
6/5/2018		4.57
6/6/2018	7	
10/1/2018		
10/2/2018		
10/3/2018	6.94	4.41
3/11/2019		
3/12/2019		
3/14/2019		4.39
3/15/2019	7.09	
4/1/2019		
4/2/2019		
4/4/2019	6.95	
4/5/2019		4.5
9/23/2019		
9/24/2019		
9/25/2019	6.92	4.54
3/2/2020		
3/3/2020	7.1	4.55
3/25/2020		
3/26/2020		
3/30/2020	7.09	
3/31/2020		4.43

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-16	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	0.038 (J)	
5/24/2016		<0.3
7/11/2016		
7/12/2016	0.26 (J)	0.54
8/30/2016		
9/1/2016	0.42	0.49
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	0.25 (J)	0.58
12/6/2016		
12/7/2016	0.23 (J)	
12/8/2016		0.63
1/24/2017		
1/26/2017	0.02 (J)	0.71
3/21/2017		
3/22/2017	0.3	
3/23/2017		0.57
5/22/2017		
5/23/2017		
5/24/2017	0.46	
5/25/2017		0.54
10/3/2017		
10/4/2017	<0.3	0.95
4/2/2018		
4/3/2018	<0.3	0.33
4/4/2018		
6/4/2018		
6/5/2018		0.66
6/6/2018	<0.3	
10/1/2018		
10/2/2018		
10/3/2018	<0.3	0.32
3/11/2019		
3/12/2019		
3/14/2019		0.88
3/15/2019	<0.3	
4/1/2019		
4/2/2019		
4/4/2019	<0.3	
4/5/2019		0.37
9/23/2019		
9/24/2019		
9/25/2019	<0.3	0.73
3/2/2020		
3/3/2020	<0.3	0.34
3/25/2020		
3/26/2020		
3/30/2020	0.059 (J)	
3/31/2020		0.45

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	395	
5/24/2016		834
7/11/2016		
7/12/2016	460	930
8/30/2016		
9/1/2016	430	890
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	440	950
12/6/2016		
12/7/2016	410	
12/8/2016		910
1/24/2017		
1/26/2017	440	970
3/21/2017		
3/22/2017	460	
3/23/2017		980
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	430	920
10/3/2017		
10/4/2017	490	870
6/4/2018		
6/5/2018		962
6/6/2018	520	
10/1/2018		
10/2/2018		
10/3/2018	651	1170
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	642	1030
9/23/2019		
9/24/2019		
9/25/2019	434	920
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	484	934

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 8:41 AM View: PL's - Interwell
Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWC-17	HGWC-18
5/19/2016		
5/20/2016		
5/23/2016	1010	
5/24/2016		1900
7/11/2016		
7/12/2016	976	1950
8/30/2016		
9/1/2016	1060	2000
10/19/2016		
10/20/2016		
10/24/2016		
10/25/2016	<25	1870
12/6/2016		
12/7/2016	866	
12/8/2016		1930
1/24/2017		
1/26/2017	1000	1950
3/21/2017		
3/22/2017	1080	
3/23/2017		2080
5/22/2017		
5/23/2017		
5/24/2017		
5/25/2017	1080	1970
10/3/2017		
10/4/2017	1210	2200
6/4/2018		
6/5/2018		1880
6/6/2018	1180	
10/1/2018		
10/2/2018		
10/3/2018	1250	2180
4/1/2019		
4/2/2019		
4/4/2019		
4/5/2019	1260	1610
9/23/2019		
9/24/2019		
9/25/2019	1280	1960
3/25/2020		
3/26/2020		
3/30/2020		
3/31/2020	1310	1860

FIGURE E.

Trend Test Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	HGWC-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP

Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0007668	9	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001791	45	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007135	-19	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001746	-37	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0004406	-14	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.001046	-21	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-14	-0.2096	-5	-48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-15	0.1514	41	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-16	0.2753	55	48	Yes	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-17	0.3065	30	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWC-18	-0.0127	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-1 (bg)	6.687	43	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.1393	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	3.531	39	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.131	-29	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.6566	-14	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.6134	15	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-14	-5.896	-7	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-15	17.5	53	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-16	15.21	66	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-17	35.54	56	48	Yes	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWC-18	16.36	31	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-1 (bg)	1.469	22	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.1372	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	-4	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.09359	-18	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.05984	-20	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-14	-115.1	-52	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-15	-21.33	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-16	14.55	83	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-17	20.15	59	48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWC-18	-29.64	-33	-48	No	14	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.04693	-50	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.054	-32	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.009832	-11	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.2248	-59	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.04139	-35	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.02795	-29	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-14	0.04005	42	63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWC-18	-0.03755	-48	-63	No	17	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-1 (bg)	-0.002837	-12	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-2 (bg)	0	29	63	No	17	58.82	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-3 (bg)	0.04945	43	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-4 (bg)	0.03355	49	63	No	17	52.94	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-5 (bg)	-0.003266	-16	-63	No	17	11.76	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWA-6 (bg)	0.03185	42	63	No	17	35.29	n/a	n/a	0.01	NP
Fluoride (mg/L)	HGWC-18	0.009528	7	63	No	17	5.882	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.572	44	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.136	35	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-37	-48	No	14	14.29	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.5503	22	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-14	88.31	32	48	No	14	0	n/a	n/a	0.01	NP

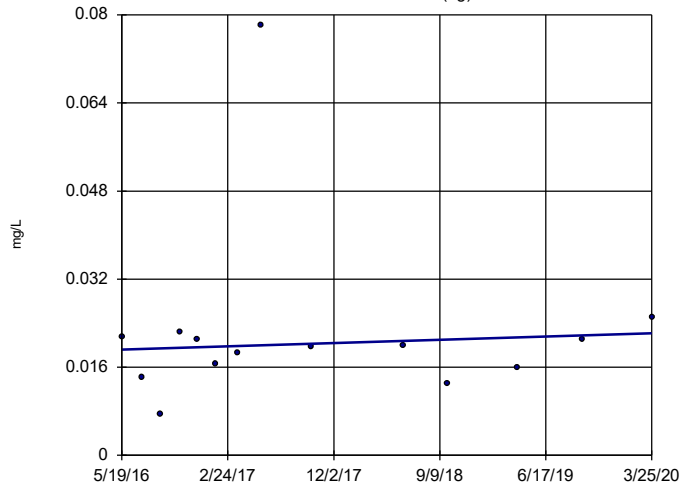
Trend Test Summary -All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 8:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Sulfate (mg/L)	HGWC-15	32.25	24	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-16	1.071	21	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-17	49.32	42	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWC-18	26.39	30	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	19.47	27	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.376	-14	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.137	9	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-34	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-5.489	-26	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	2.317	20	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-14	-238.3	-48	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-15	-35.1	-16	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-16	56.9	63	48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-17	96.37	70	48	Yes	14	7.143	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWC-18	0	0	48	No	14	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

HGWA-1 (bg)

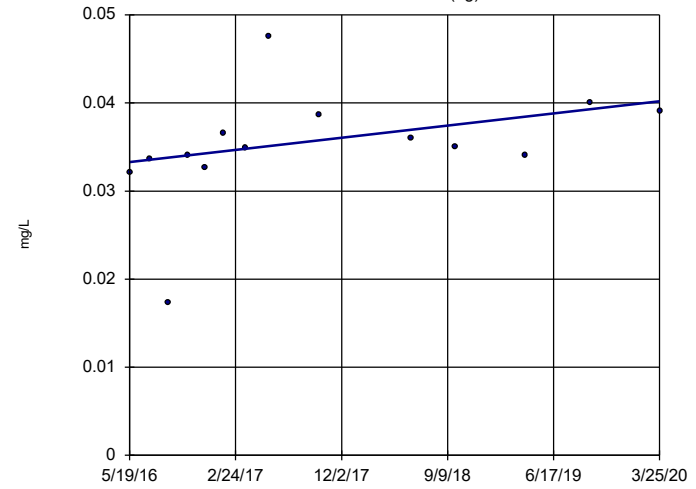


n = 14
 Slope = 0.0007668
 units per year.
 Mann-Kendall
 statistic = 9
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

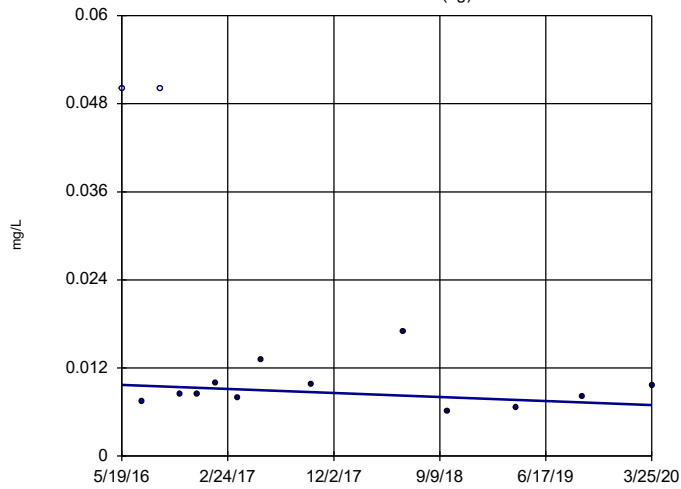


n = 14
 Slope = 0.001791
 units per year.
 Mann-Kendall
 statistic = 45
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

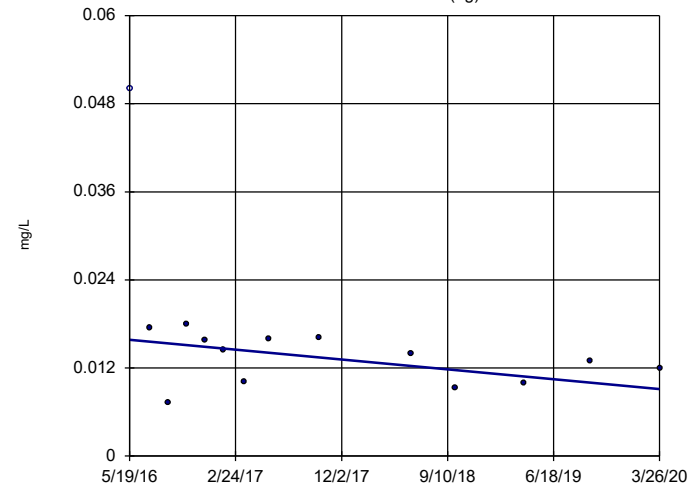


n = 14
 Slope = -0.0007135
 units per year.
 Mann-Kendall
 statistic = -19
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

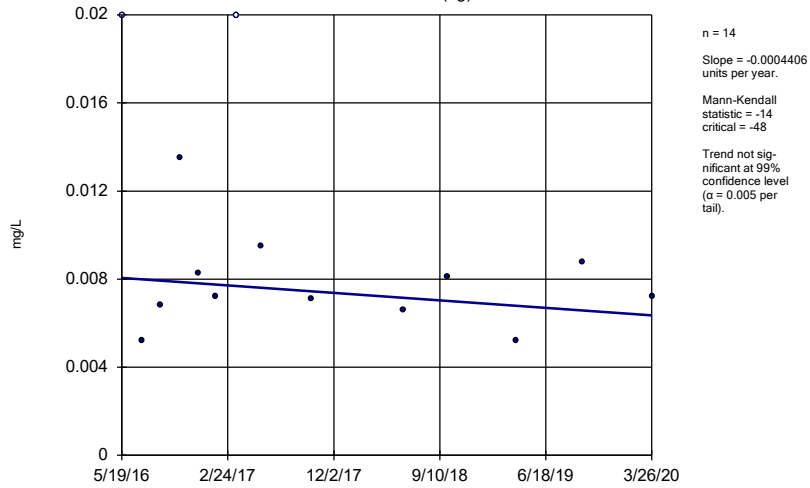


n = 14
 Slope = -0.001746
 units per year.
 Mann-Kendall
 statistic = -37
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

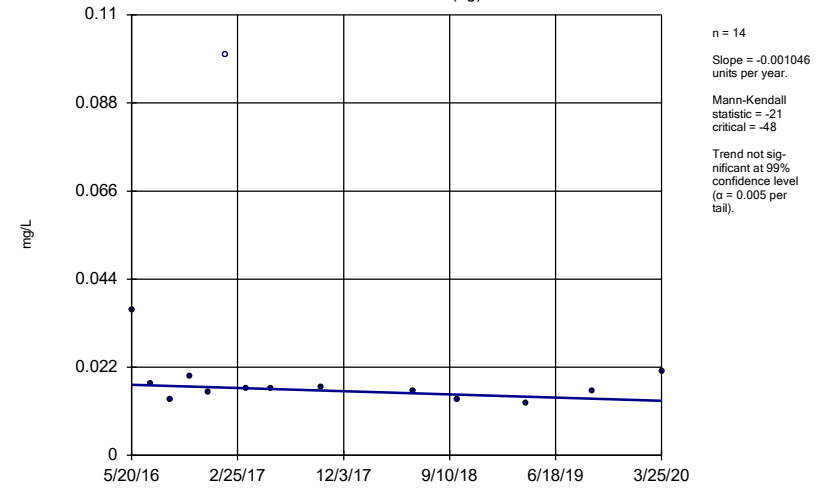
HGWA-5 (bg)



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

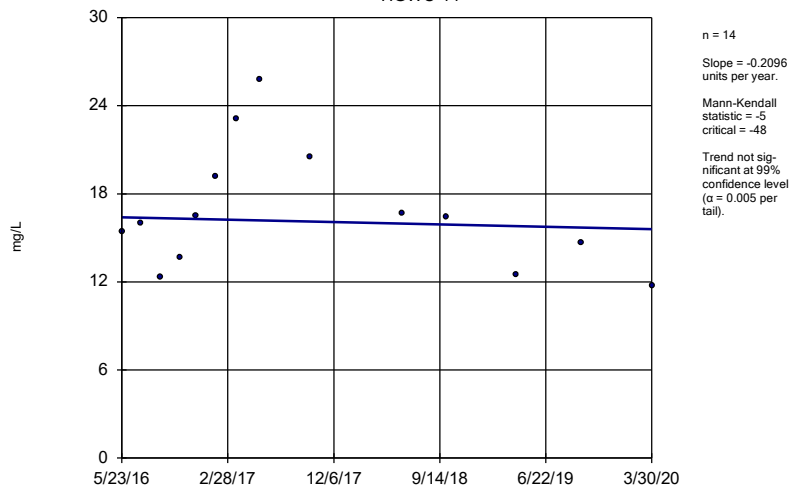
HGWA-6 (bg)



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

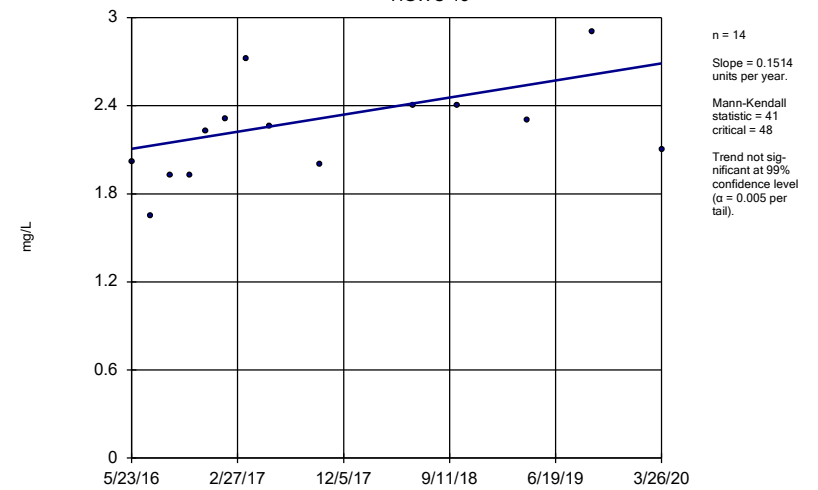
HGWC-14



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

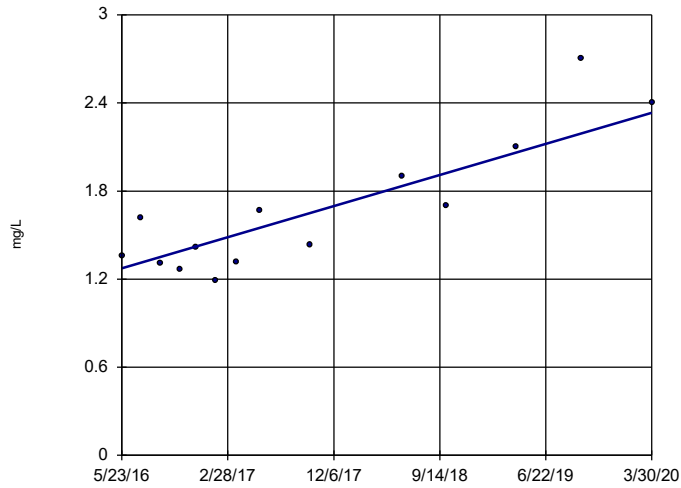
Sen's Slope Estimator

HGWC-15



Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

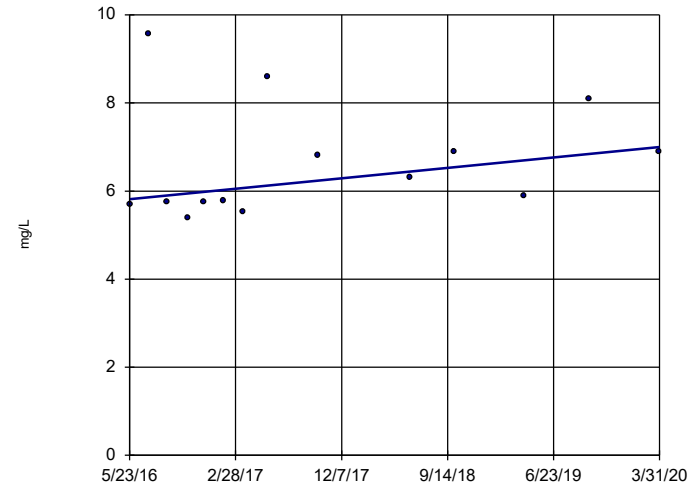
Sen's Slope Estimator
HGWC-16



n = 14
Slope = 0.2753
units per year.
Mann-Kendall
statistic = 55
critical = 48
Increasing trend
significant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

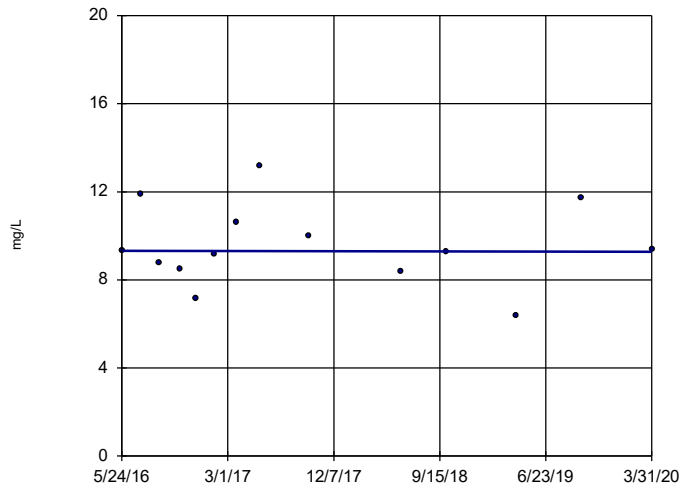
Sen's Slope Estimator
HGWC-17



n = 14
Slope = 0.3065
units per year.
Mann-Kendall
statistic = 30
critical = 48
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

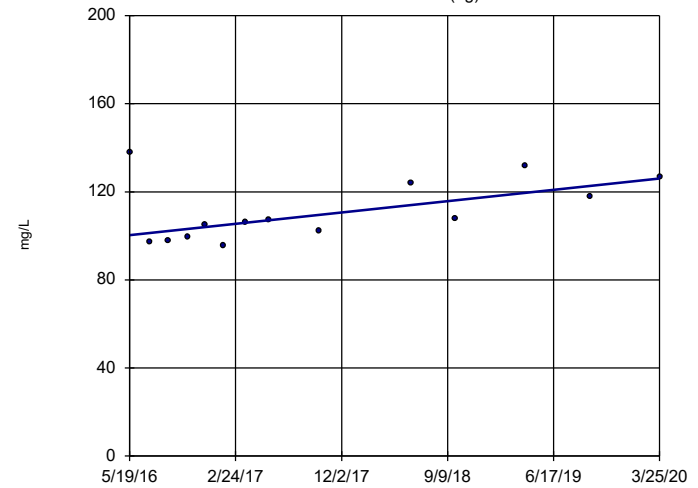
Sen's Slope Estimator
HGWC-18



n = 14
Slope = -0.0127
units per year.
Mann-Kendall
statistic = -1
critical = -48
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Boron Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-1 (bg)

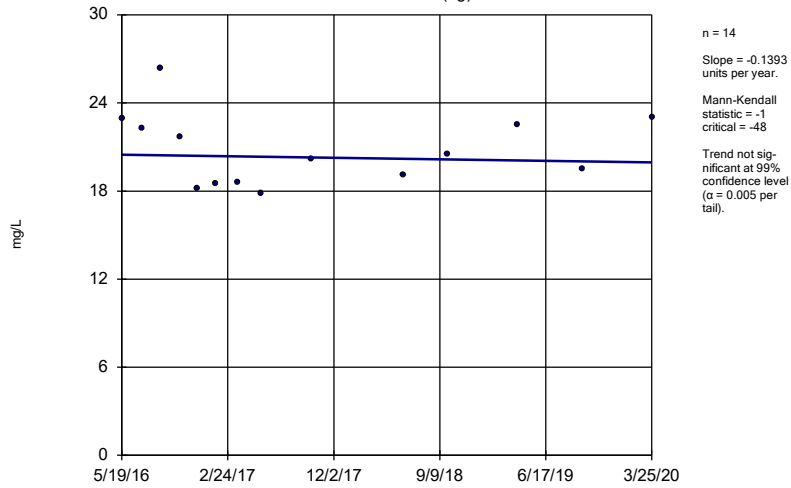


n = 14
Slope = 6.687
units per year.
Mann-Kendall
statistic = 43
critical = 48
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

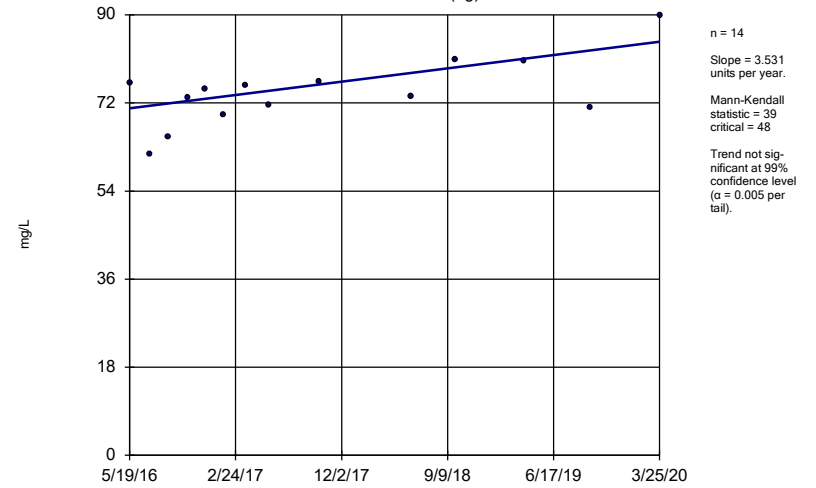
HGWA-2 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

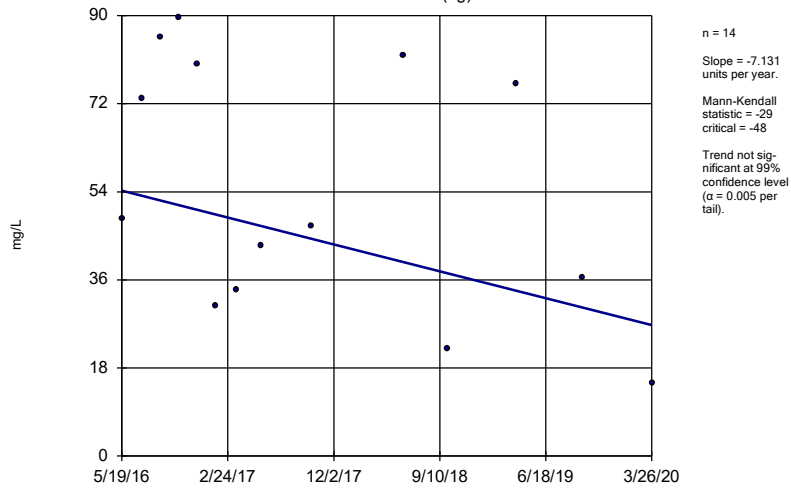
HGWA-3 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

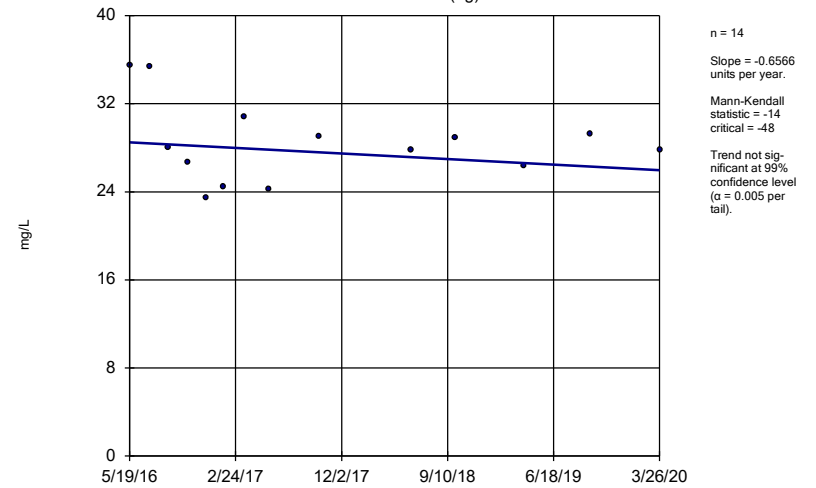
HGWA-4 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

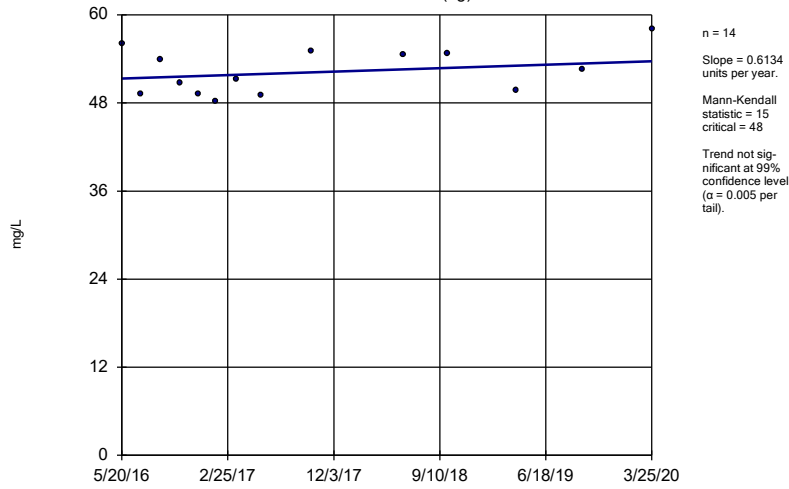
HGWA-5 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

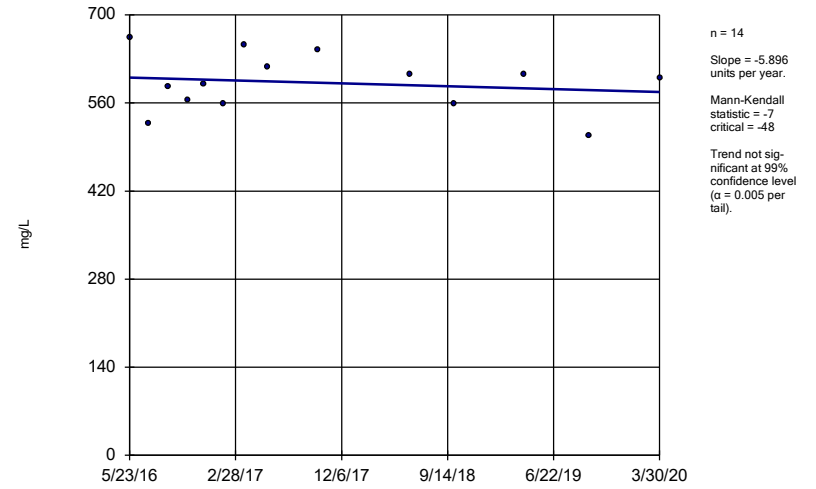
HGWA-6 (bg)



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

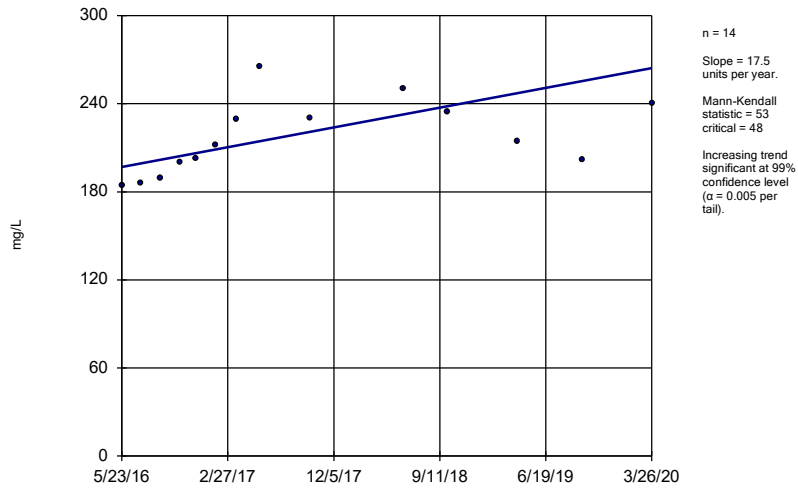
HGWC-14



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

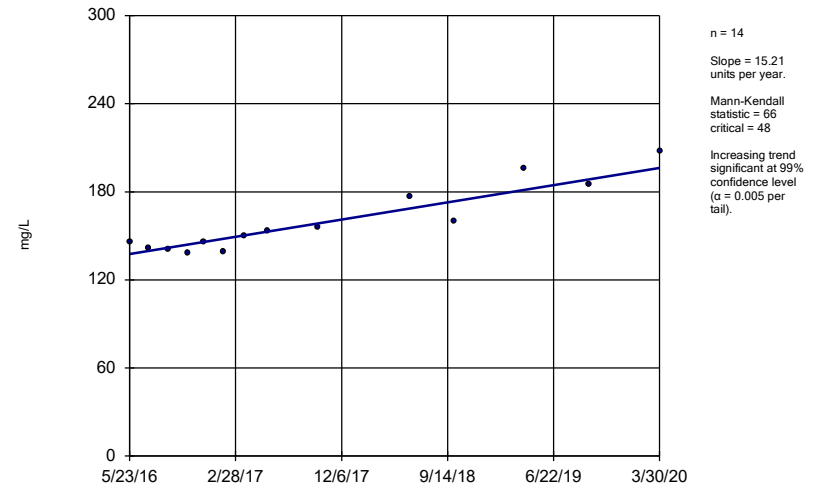
HGWC-15



Constituent: Calcium Analysis Run 8/11/2020 8:45 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

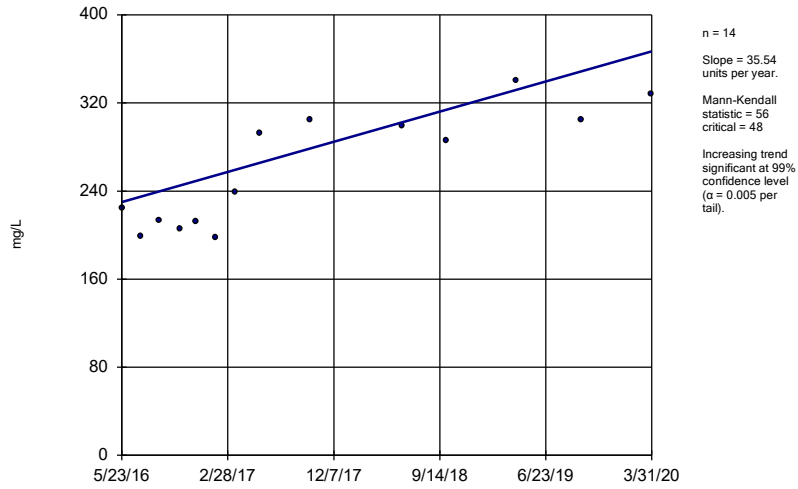
Sen's Slope Estimator

HGWC-16



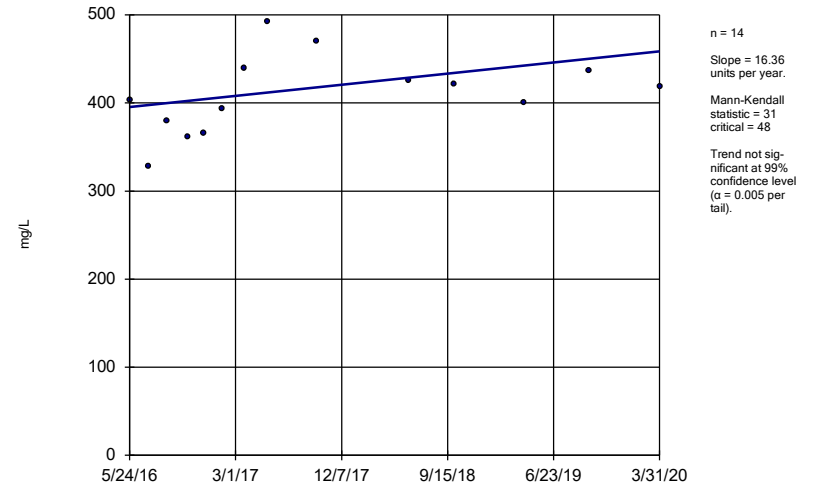
Constituent: Calcium Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-17



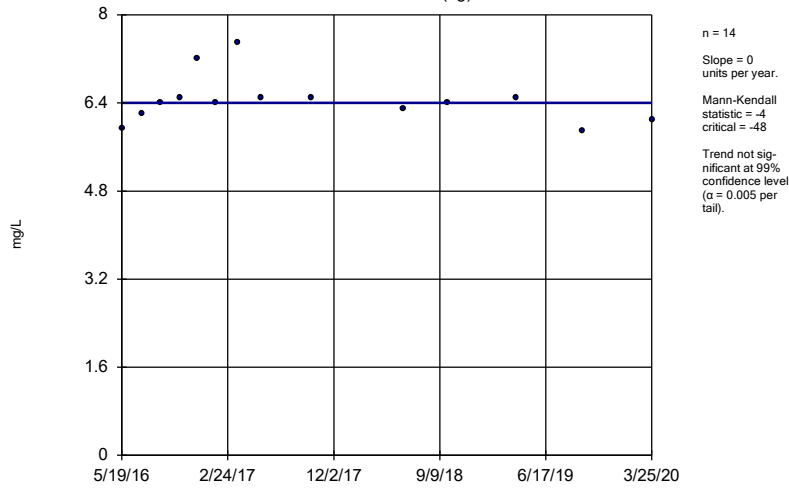
Constituent: Calcium Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-18



Sen's Slope Estimator

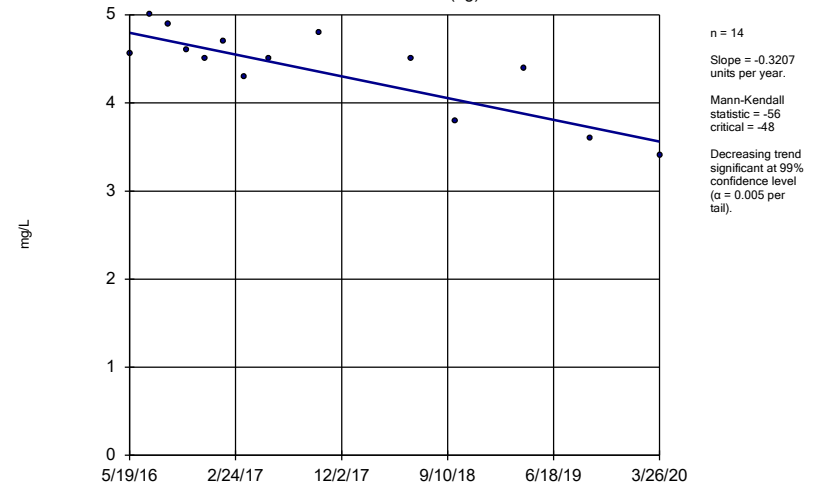
HGWA-3 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

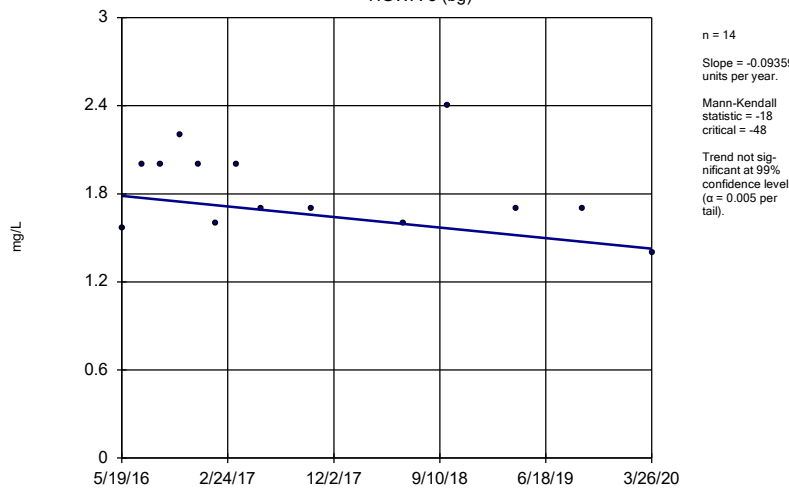
HGWA-4 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

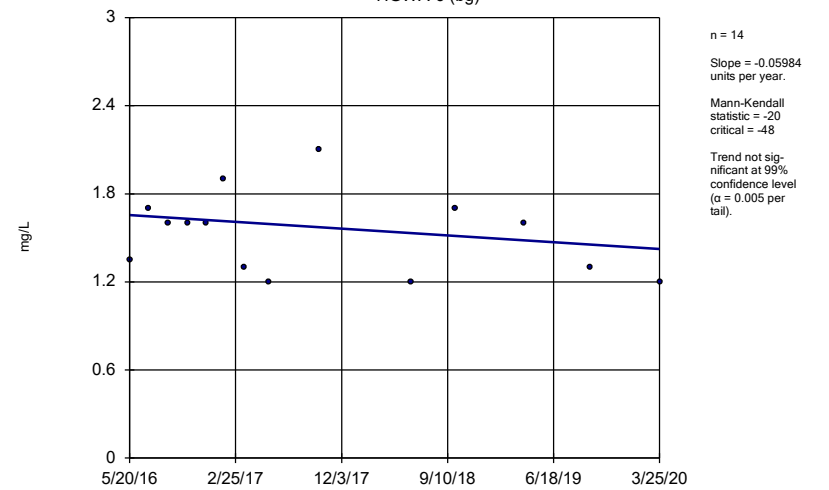
HGWA-5 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

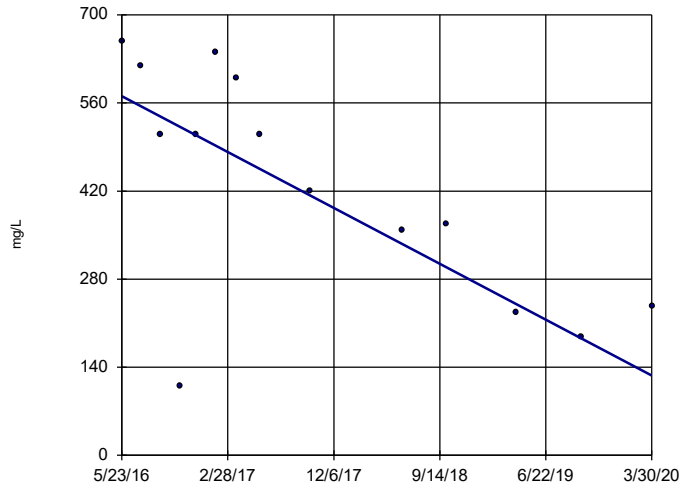
HGWA-6 (bg)



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-14

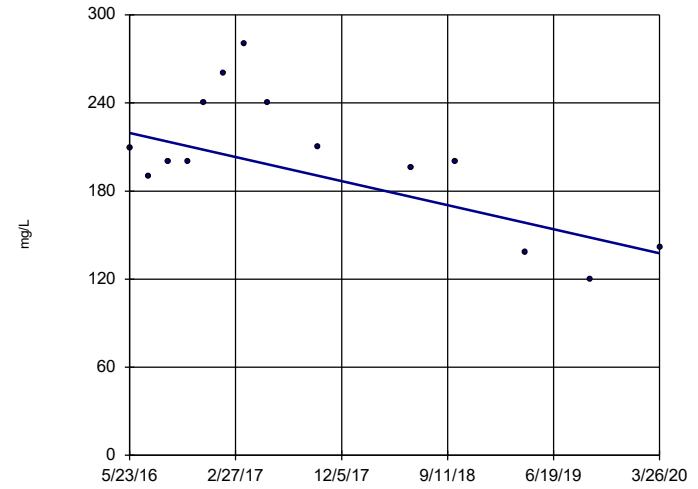


n = 14
 Slope = -115.1
 units per year.
 Mann-Kendall
 statistic = -52
 critical = -48
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-15

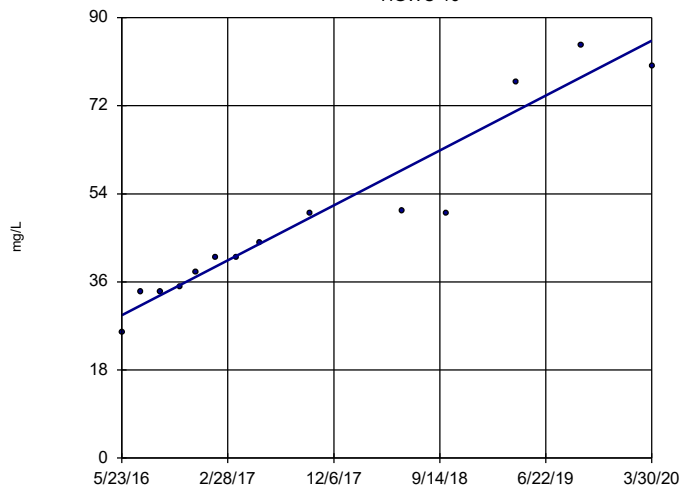


n = 14
 Slope = -21.33
 units per year.
 Mann-Kendall
 statistic = -27
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-16

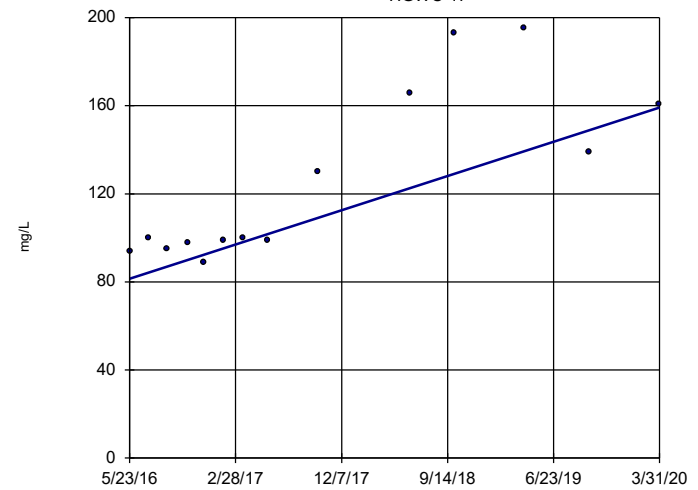


n = 14
 Slope = 14.55
 units per year.
 Mann-Kendall
 statistic = 83
 critical = 48
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-17

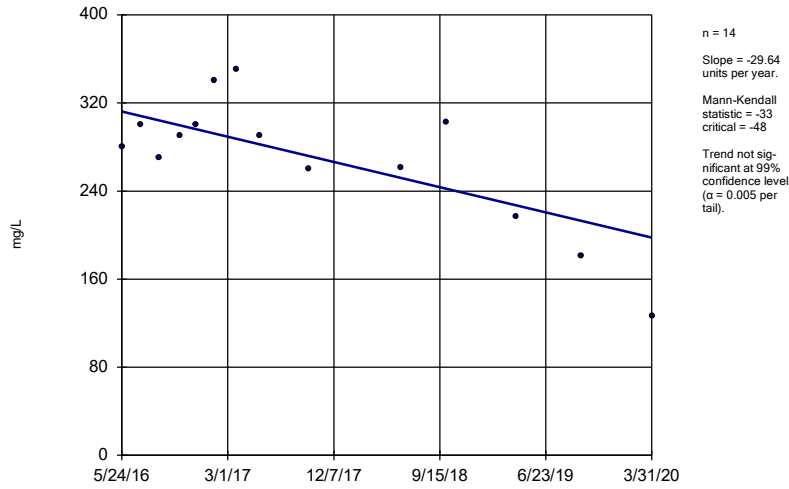


n = 14
 Slope = 20.15
 units per year.
 Mann-Kendall
 statistic = 59
 critical = 48
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-18



Constituent: Chloride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

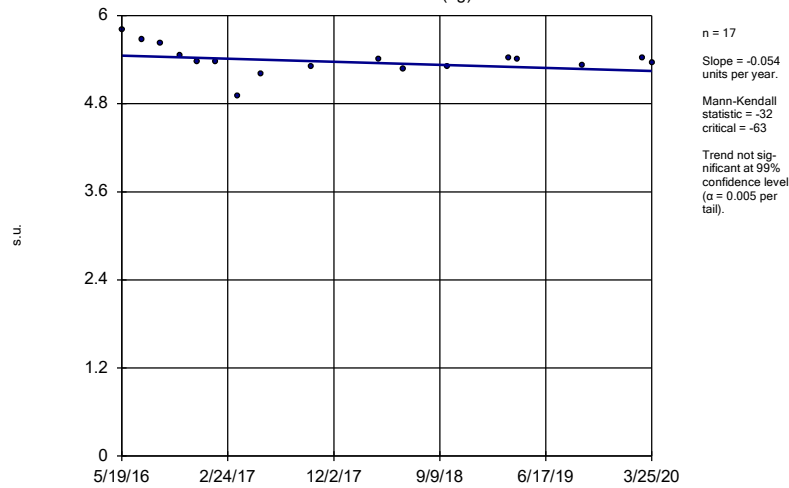
HGWA-1 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

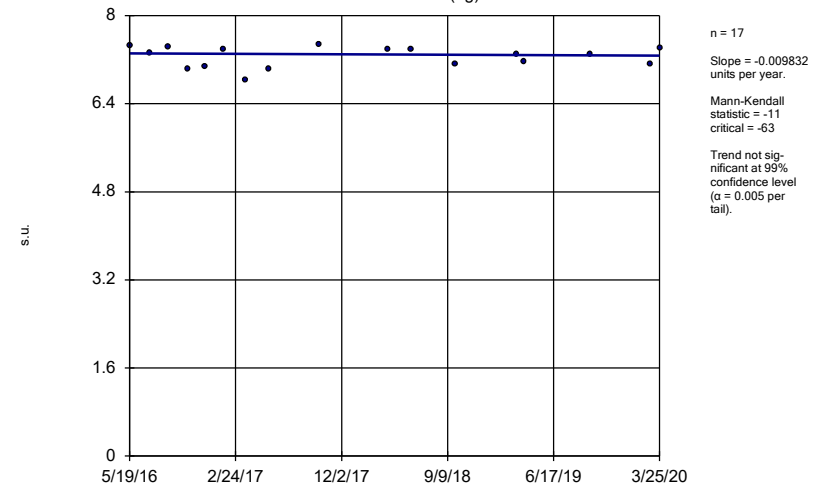
HGWA-2 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

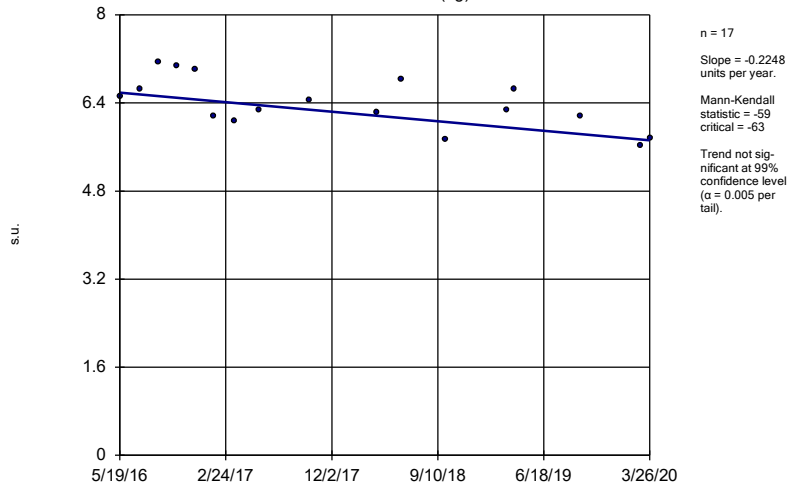
HGWA-3 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

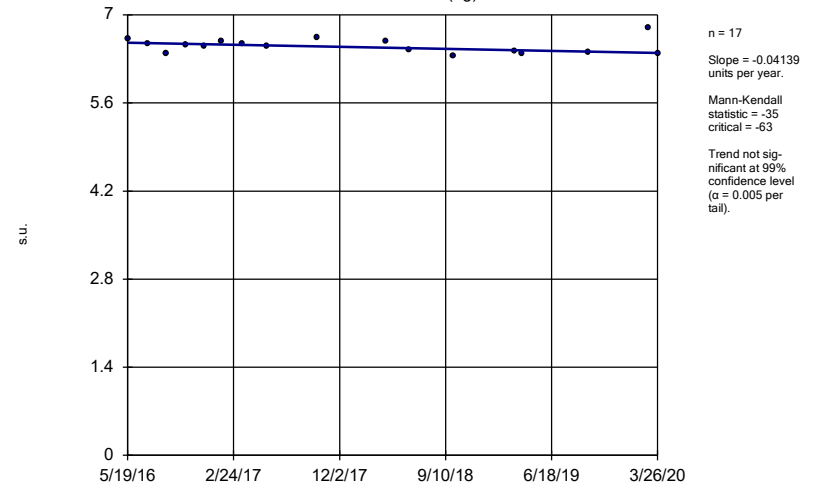
HGWA-4 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

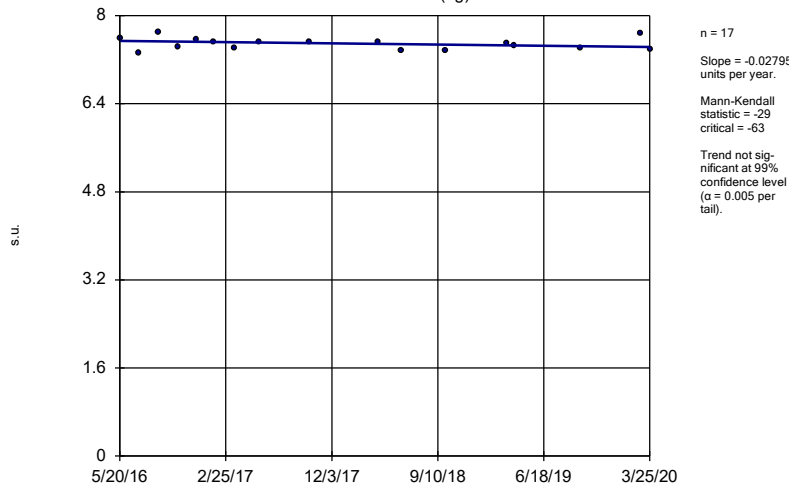
HGWA-5 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

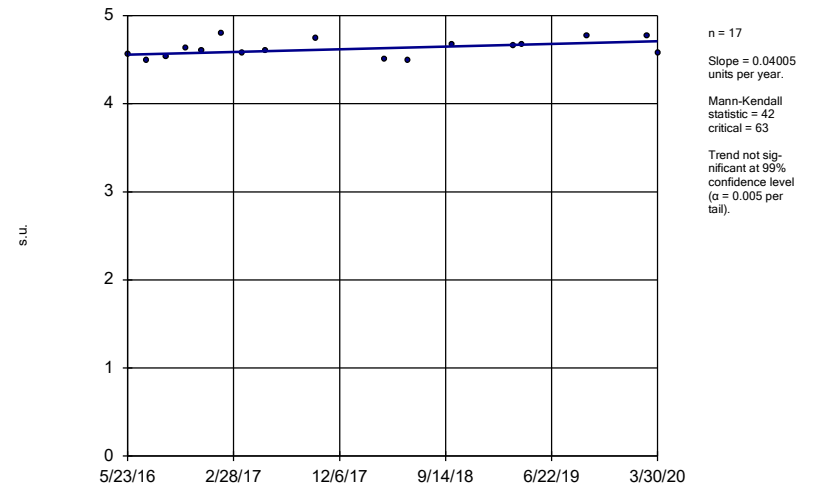
HGWA-6 (bg)



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

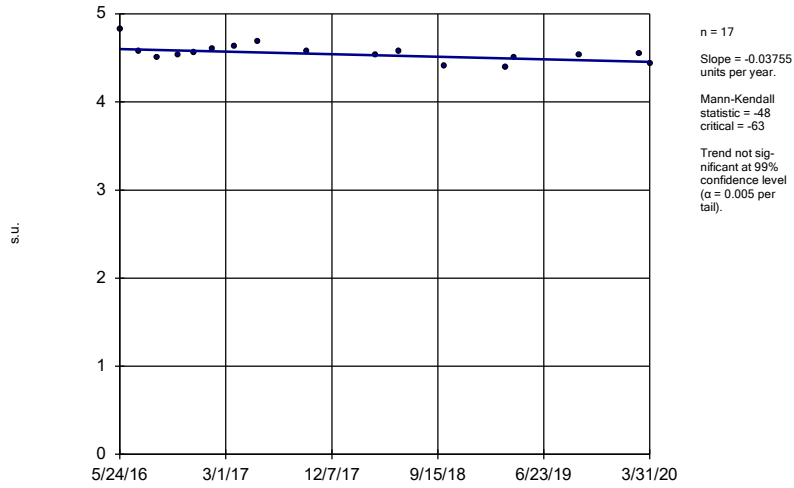
HGWC-14



Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-18

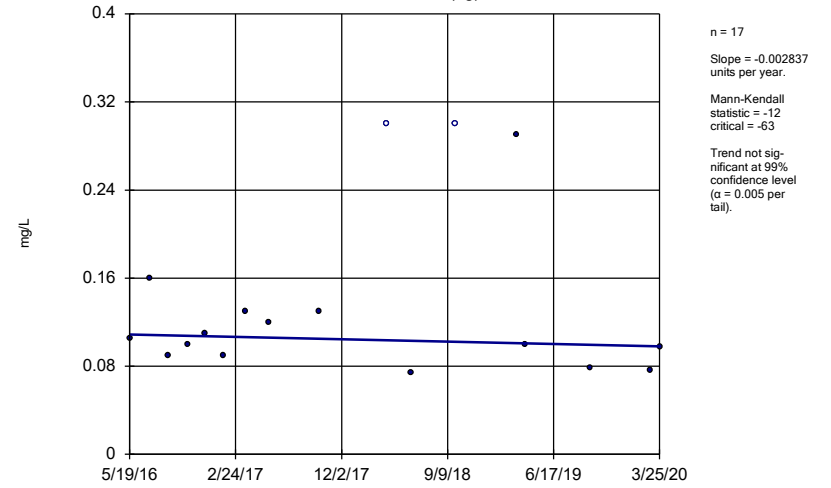


Constituent: Field pH Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-1 (bg)

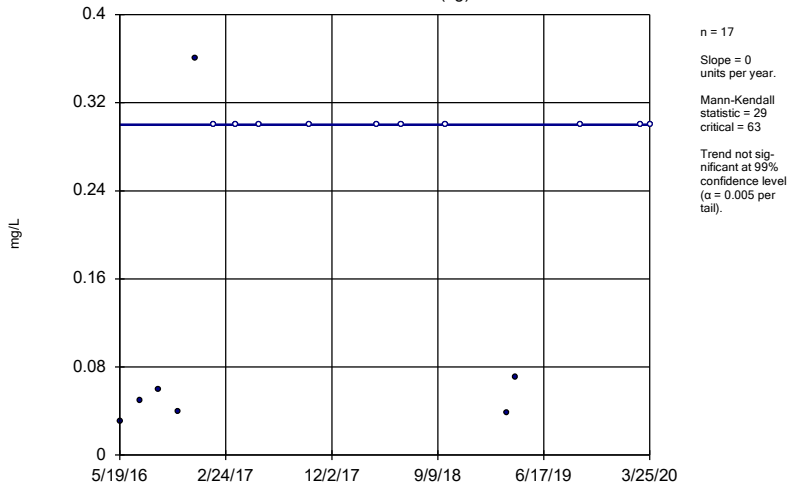


Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

HGWA-2 (bg)

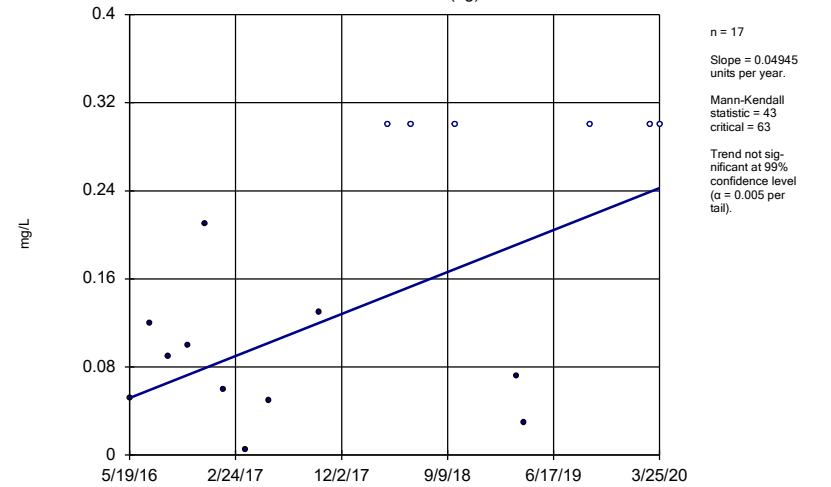


Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Hollow symbols indicate censored values.

Sen's Slope Estimator

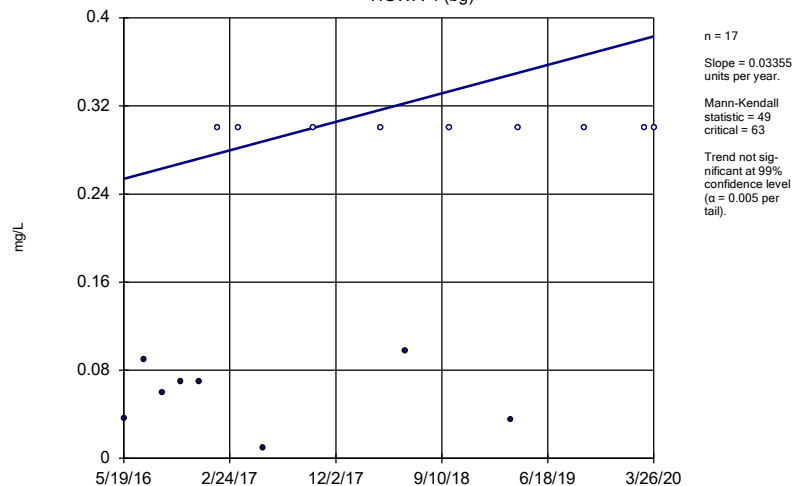
HGWA-3 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

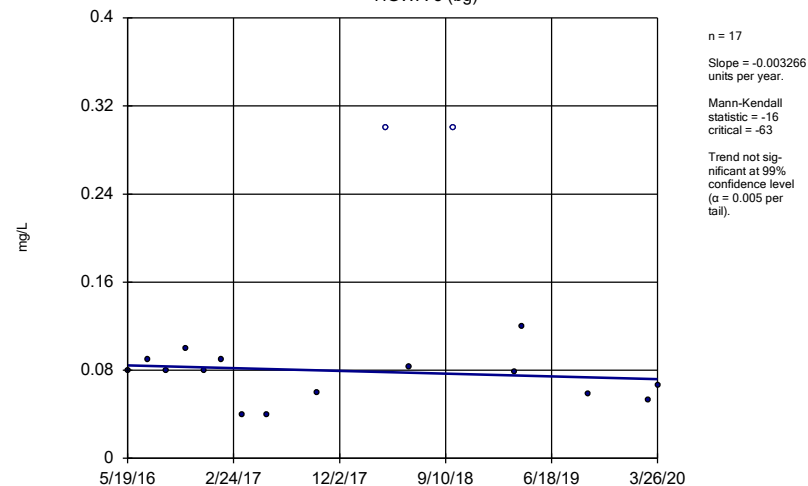
HGWA-4 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

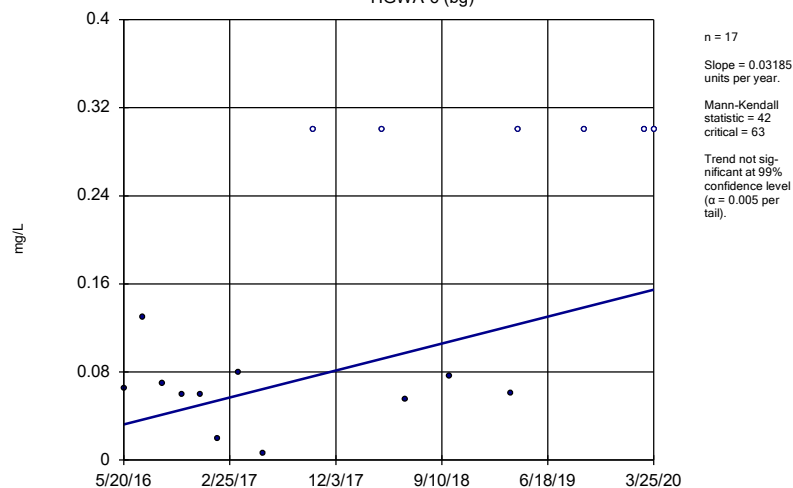
HGWA-5 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

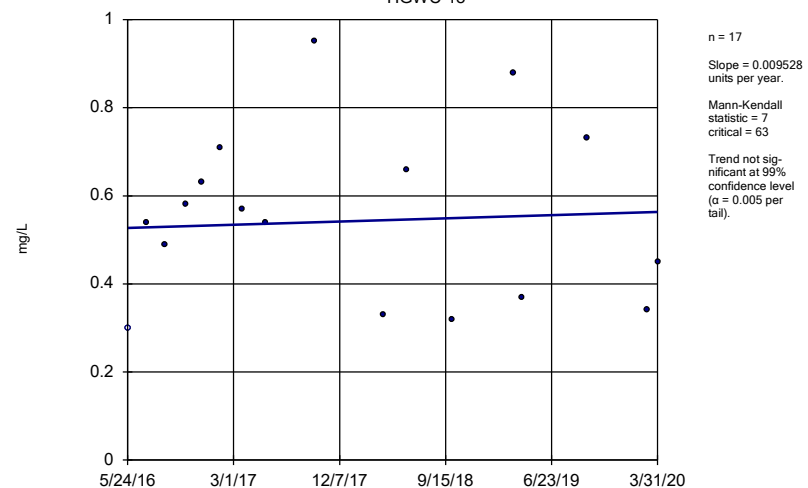
HGWA-6 (bg)



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

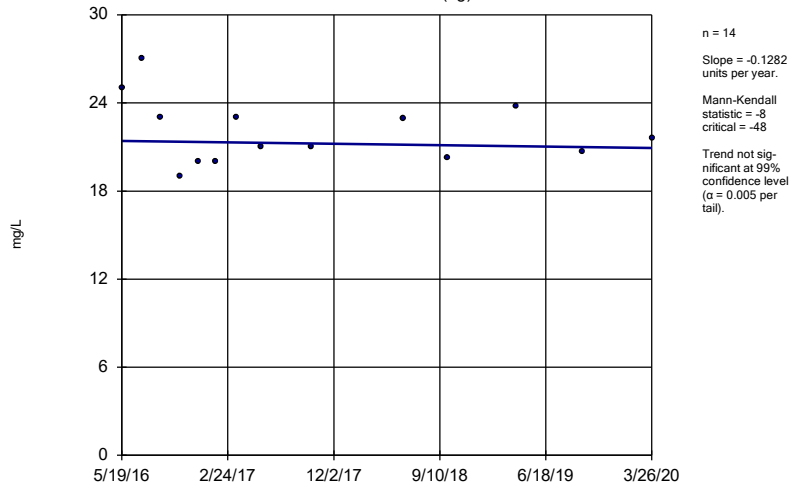
HGWC-18



Constituent: Fluoride Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

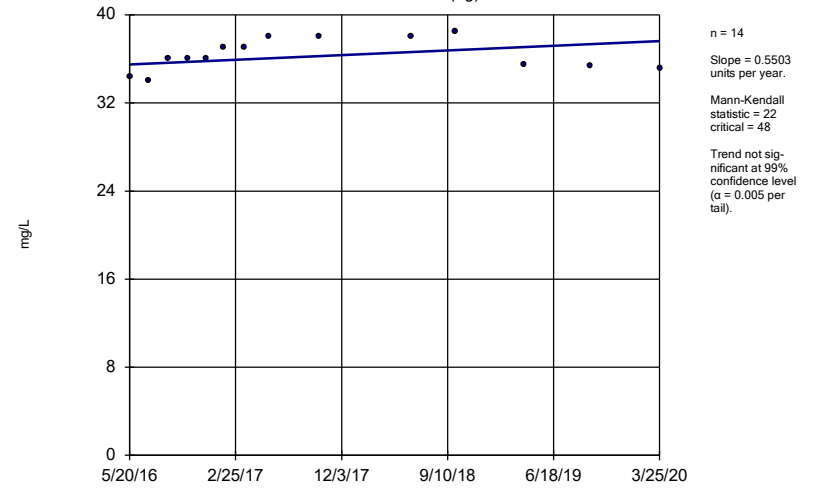
HGWA-5 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

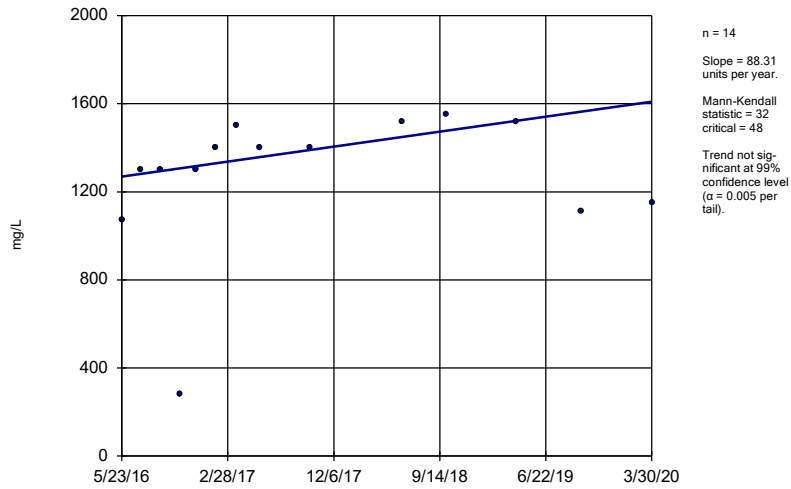
HGWA-6 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

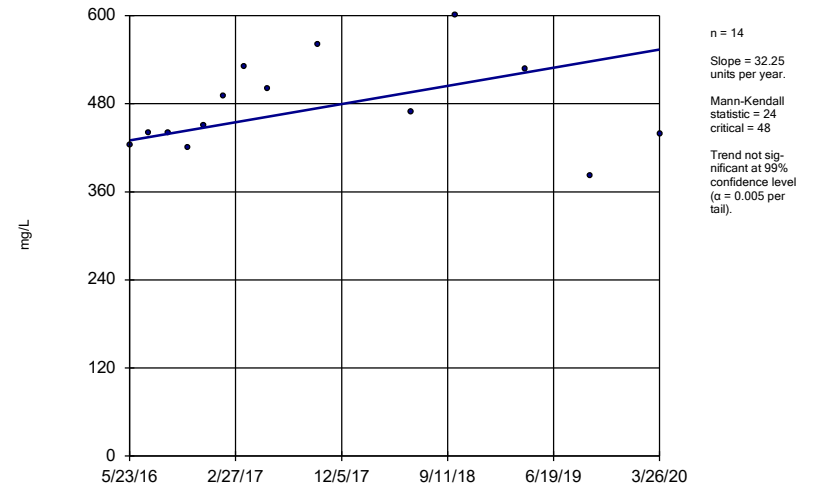
HGWC-14



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

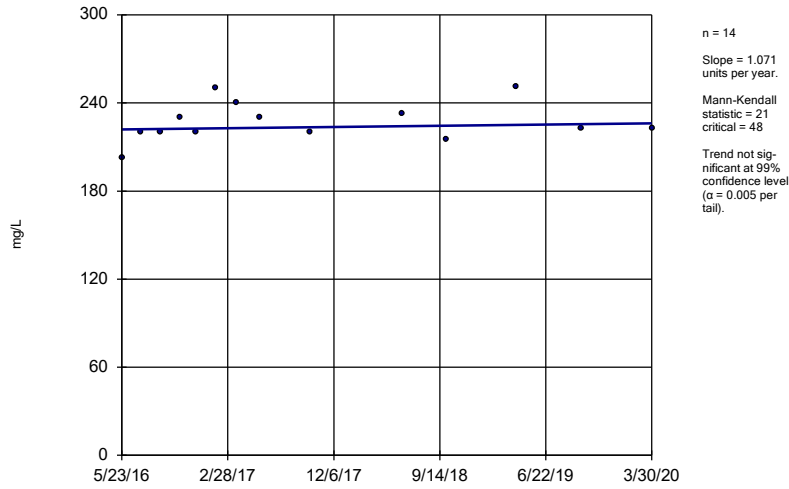
Sen's Slope Estimator

HGWC-15



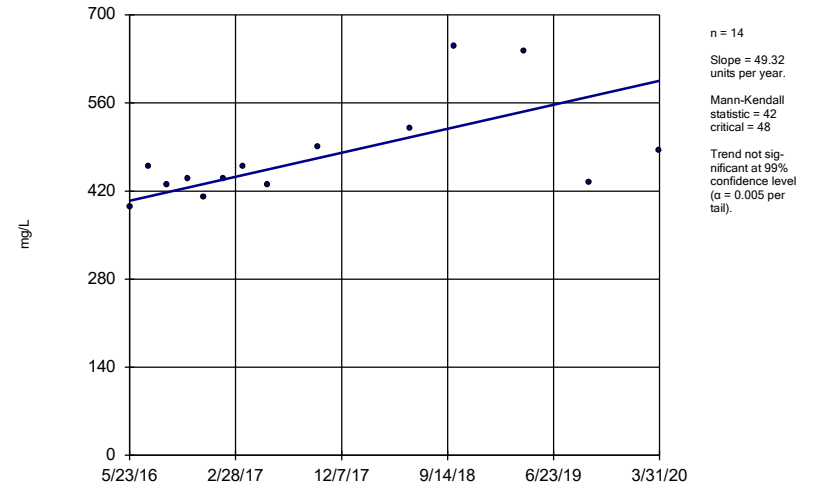
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-16



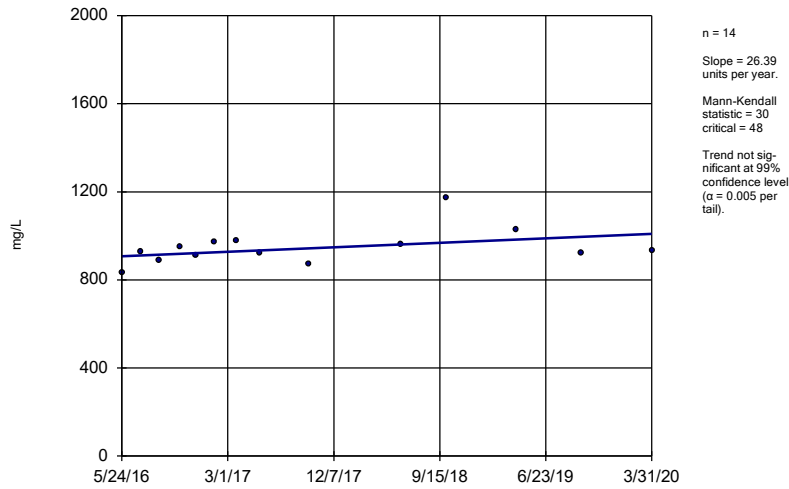
Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-17



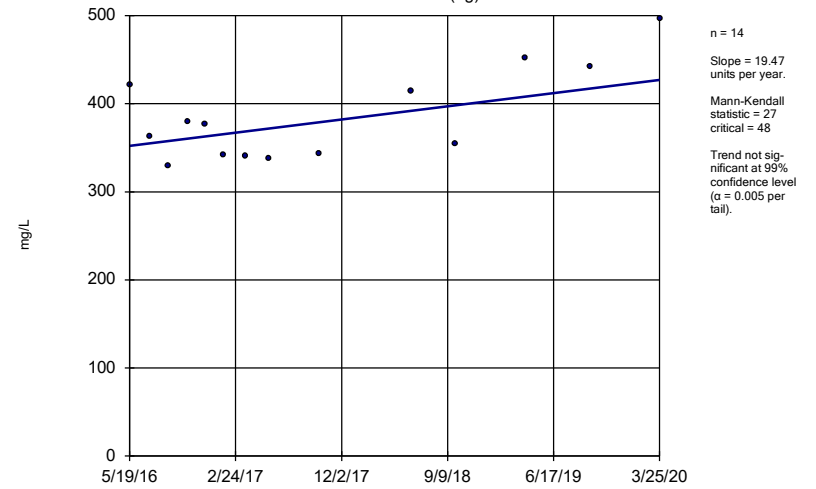
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Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWC-18



Constituent: Sulfate Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

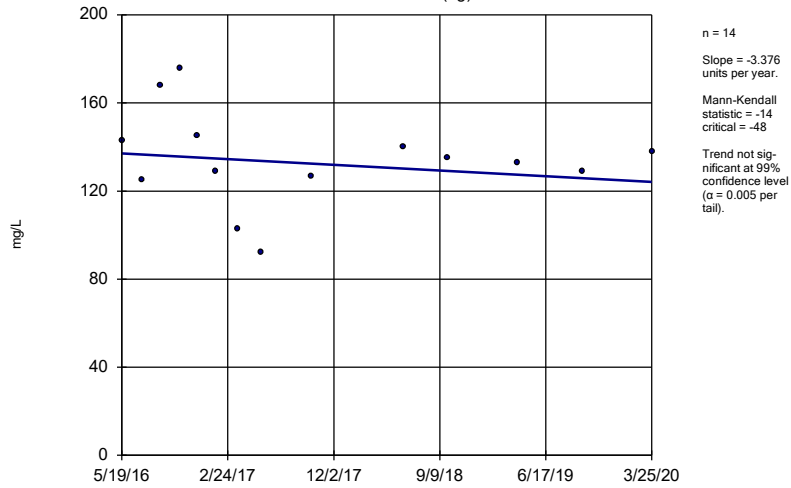
Sen's Slope Estimator
HGWA-1 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

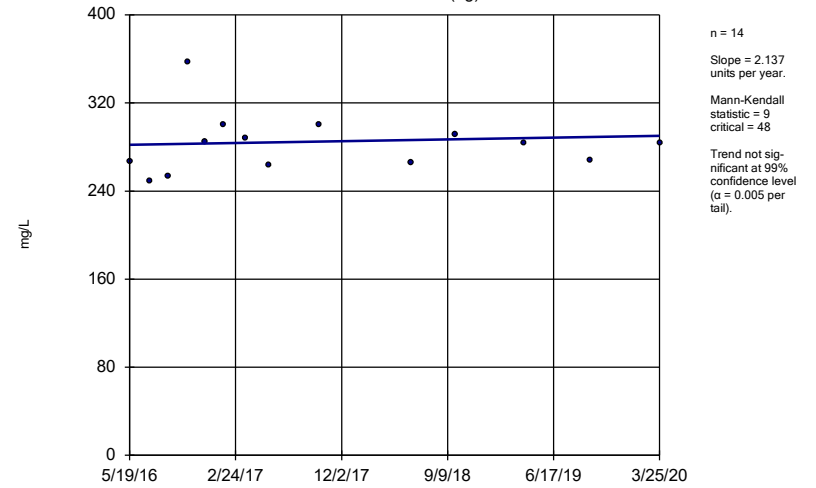
HGWA-2 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

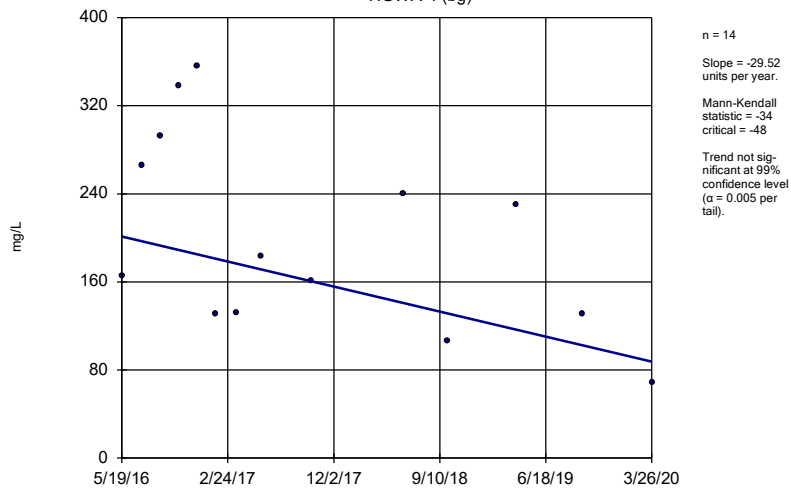
HGWA-3 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

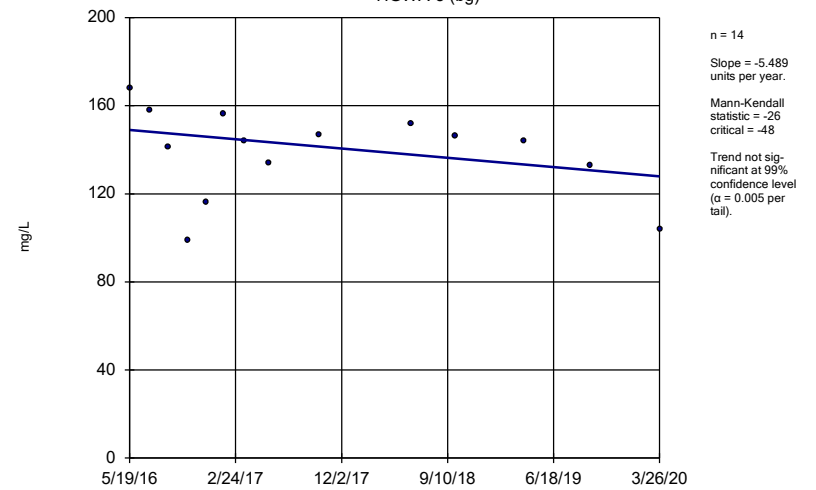
HGWA-4 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

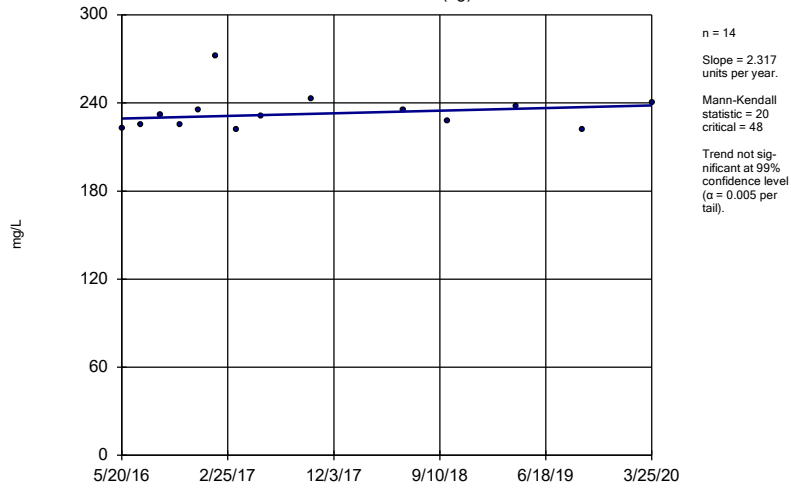
HGWA-5 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

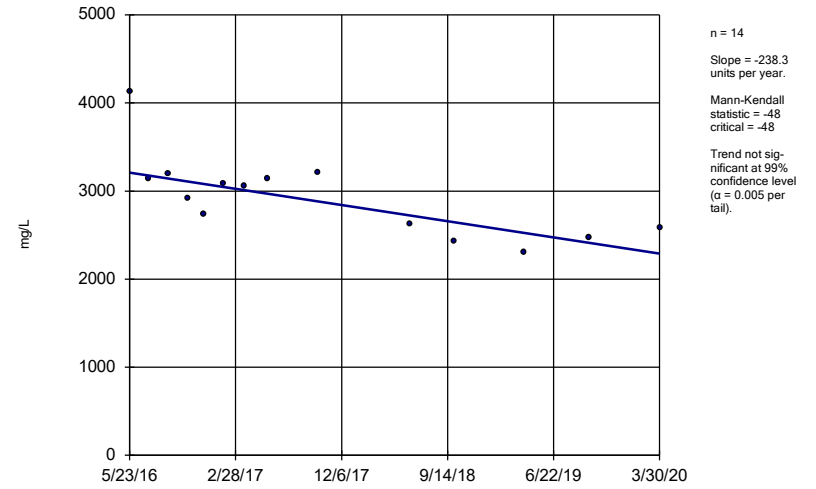
HGWA-6 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

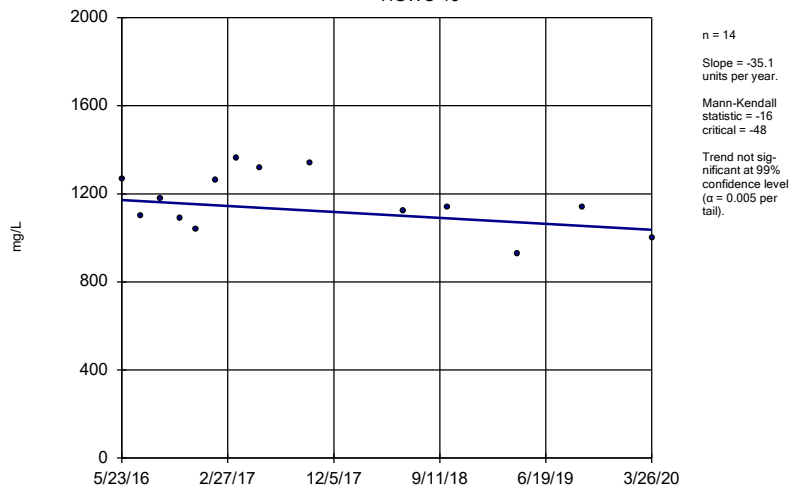
HGWC-14



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

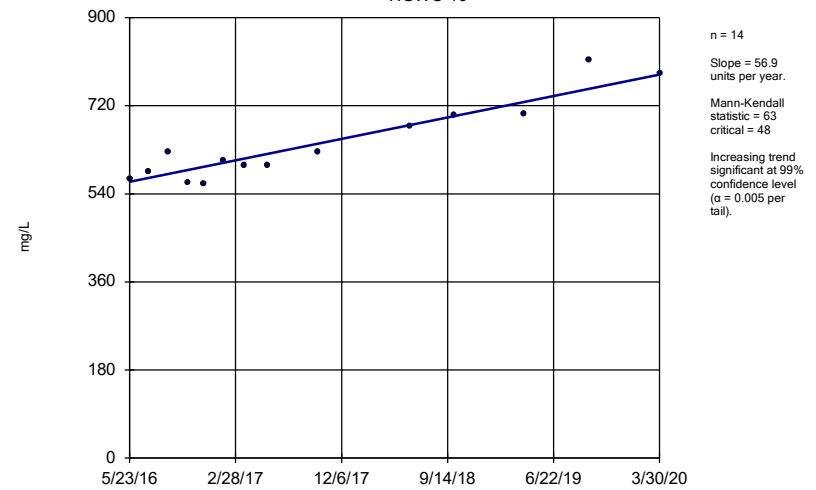
HGWC-15



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWC-16



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 8:46 AM View: Trend Tests - PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator HGWC-17

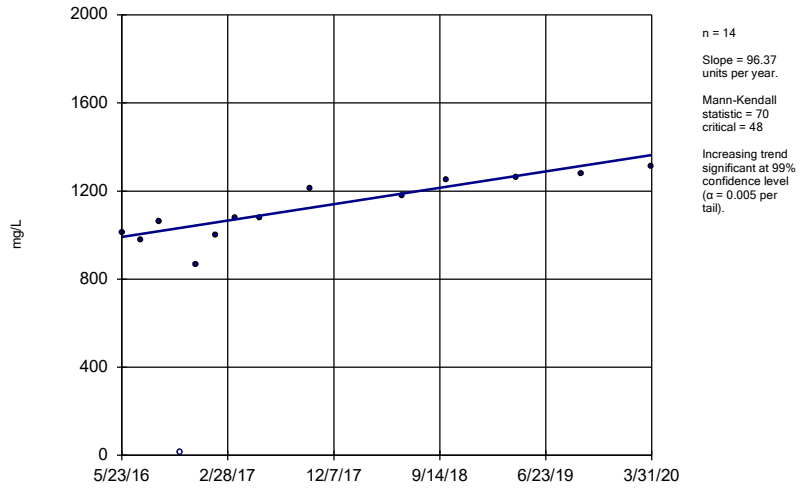


FIGURE F.

Tolerance Limit Summary Table - Appendix IV

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	69	n/a	n/a	94.2	n/a	n/a	0.02904	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	96	n/a	n/a	79.17	n/a	n/a	0.007269	NP Inter(NDs)
Barium (mg/L)	n/a	0.22	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	84	n/a	n/a	83.33	n/a	n/a	0.01345	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	84	n/a	n/a	86.9	n/a	n/a	0.01345	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	96	n/a	n/a	67.71	n/a	n/a	0.007269	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Fluoride (mg/L)	n/a	0.36	102	n/a	n/a	34.31	n/a	n/a	0.005343	NP Inter(normality)
Lead (mg/L)	n/a	0.005	84	n/a	n/a	80.95	n/a	n/a	0.01345	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	96	n/a	n/a	27.08	n/a	n/a	0.007269	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	66	n/a	n/a	87.88	n/a	n/a	0.03387	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	84	n/a	n/a	97.62	n/a	n/a	0.01345	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	96	n/a	n/a	98.96	n/a	n/a	0.007269	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	96	n/a	n/a	97.92	n/a	n/a	0.007269	NP Inter(NDs)

FIGURE G.

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

*MCL = Maximum Contaminant Level

*CCR = Coal Combustion Residuals

*GWPS = Groundwater Protection Standard

FIGURE H.

State Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.005	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.005	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.005	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.005	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.005	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.03	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.03	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.03	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.03	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.03	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.01	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.01	No 14	0.01	0	100	None	No	0.01	NP (NDs)

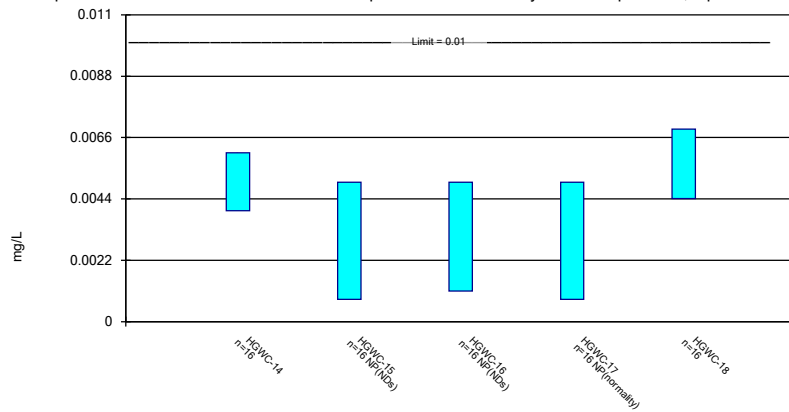
State Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:04 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No	16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No	16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No	16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No	16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No	16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No	16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No	16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

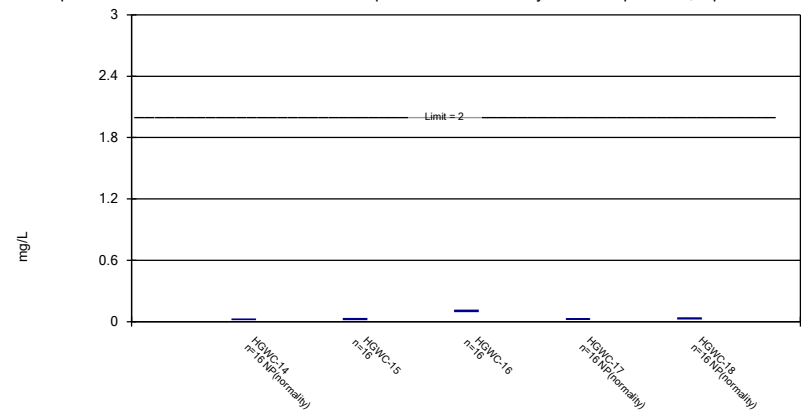
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

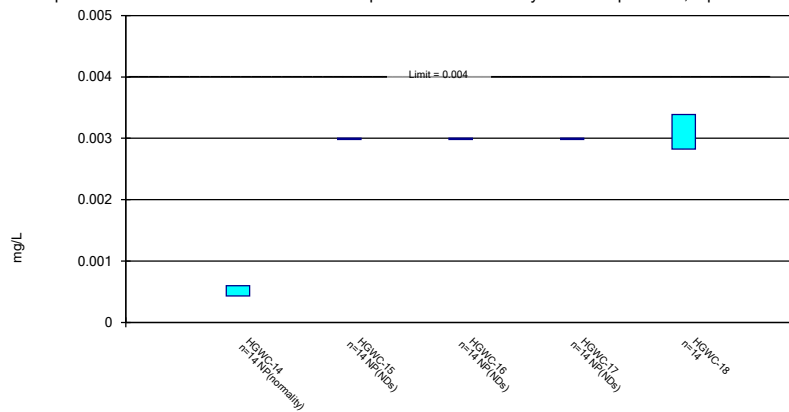
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

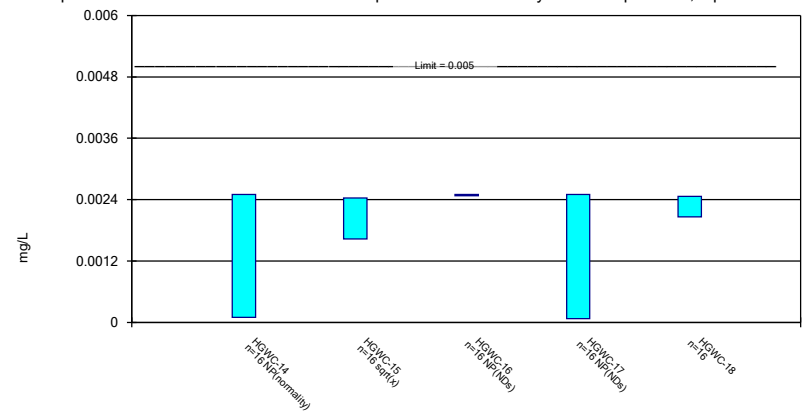
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

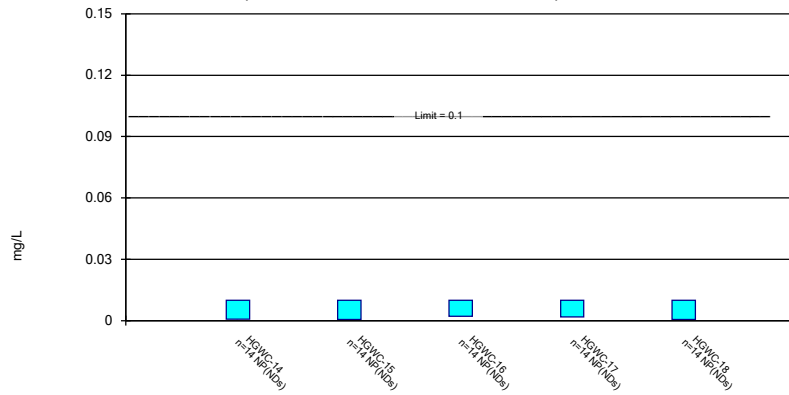
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

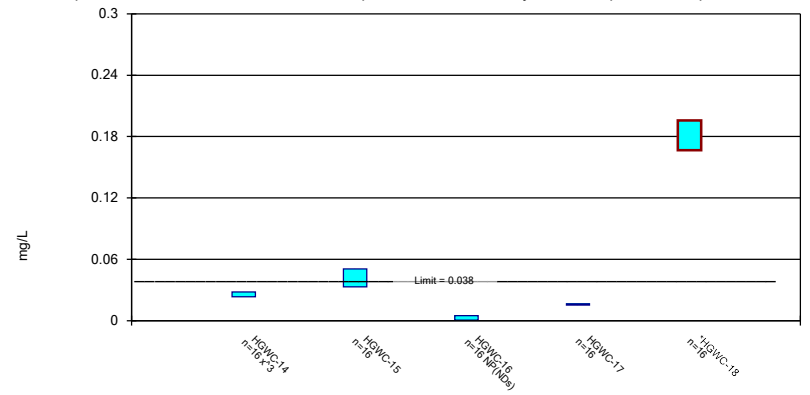
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

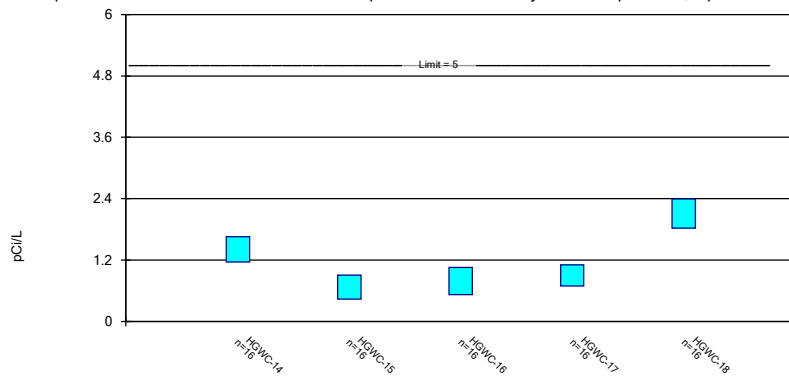
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric Confidence Interval

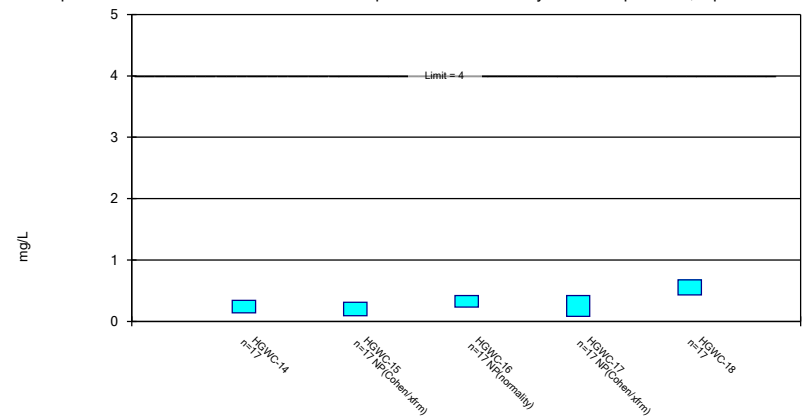
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

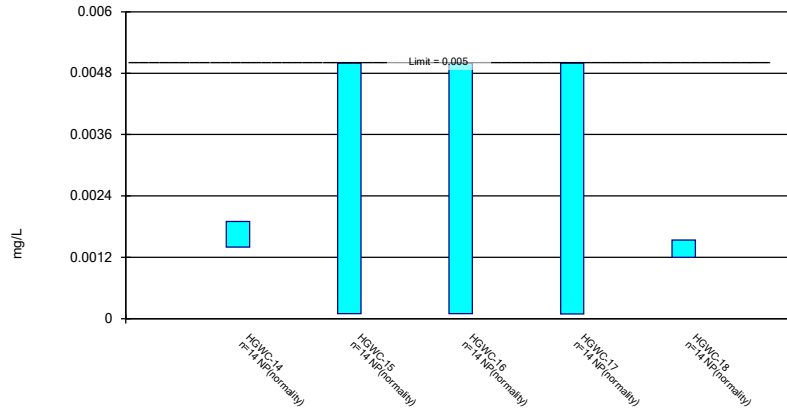
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

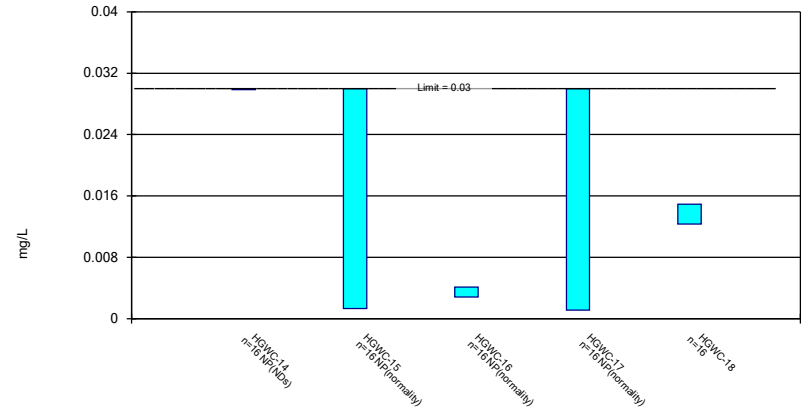
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

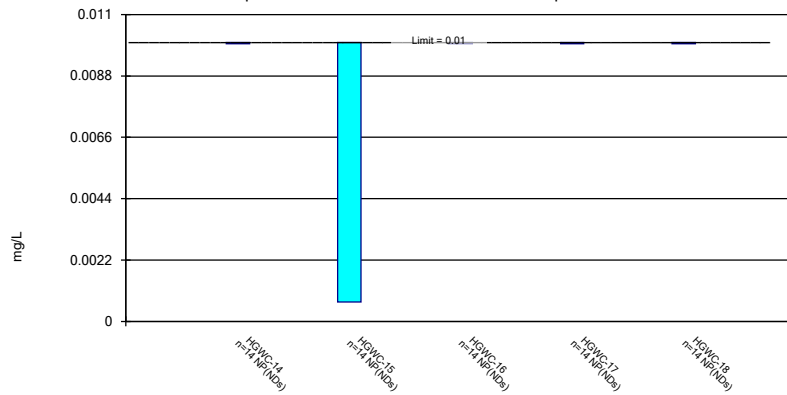
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

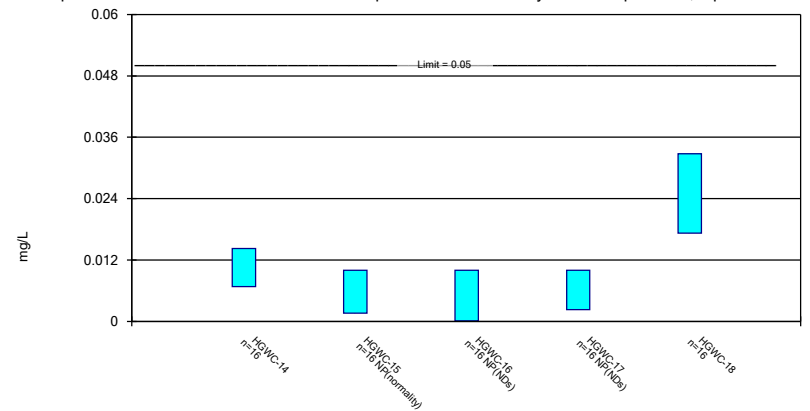
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

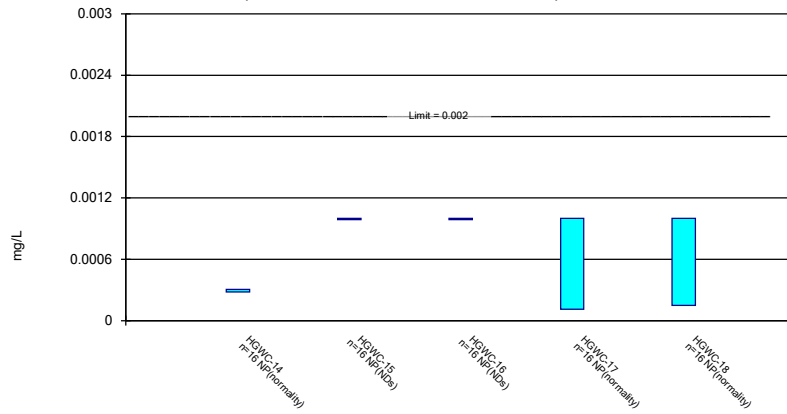
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 8/11/2020 9:02 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE I.

Federal Confidence Interval Summary - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.

Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	HGWC-14	0.006053	0.003982	0.01	No 16	0.005017	0.001592	12.5	None	No	0.01	Param.
Arsenic (mg/L)	HGWC-15	0.005	0.0008	0.01	No 16	0.004146	0.001839	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-16	0.005	0.0011	0.01	No 16	0.004169	0.001797	81.25	None	No	0.01	NP (NDs)
Arsenic (mg/L)	HGWC-17	0.005	0.0008	0.01	No 16	0.003948	0.001883	75	None	No	0.01	NP (normality)
Arsenic (mg/L)	HGWC-18	0.006903	0.004414	0.01	No 16	0.005659	0.001913	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-14	0.0238	0.019	2	No 16	0.02581	0.01989	6.25	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-15	0.03059	0.02137	2	No 16	0.02598	0.007082	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-16	0.1128	0.09802	2	No 16	0.1054	0.01133	0	None	No	0.01	Param.
Barium (mg/L)	HGWC-17	0.028	0.0222	2	No 16	0.02484	0.002548	0	None	No	0.01	NP (normality)
Barium (mg/L)	HGWC-18	0.0346	0.028	2	No 16	0.03476	0.01776	6.25	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-14	0.0006	0.00043	0.004	No 14	0.0008357	0.0009204	14.29	None	No	0.01	NP (normality)
Beryllium (mg/L)	HGWC-15	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-16	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-17	0.003	0.003	0.004	No 14	0.003	0	100	None	No	0.01	NP (NDs)
Beryllium (mg/L)	HGWC-18	0.003386	0.002825	0.004	No 14	0.003106	0.0003963	7.143	None	No	0.01	Param.
Cadmium (mg/L)	HGWC-14	0.0025	0.0001	0.005	No 16	0.001015	0.001189	37.5	None	No	0.01	NP (normality)
Cadmium (mg/L)	HGWC-15	0.002433	0.001632	0.005	No 16	0.002057	0.0006788	0	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	HGWC-16	0.0025	0.0025	0.005	No 16	0.0025	0	100	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-17	0.0025	0.00007	0.005	No 16	0.002348	0.0006075	93.75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	HGWC-18	0.002461	0.002064	0.005	No 16	0.002262	0.0003052	6.25	None	No	0.01	Param.
Chromium (mg/L)	HGWC-14	0.01	0.00066	0.1	No 14	0.008649	0.003436	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-15	0.01	0.0005	0.1	No 14	0.008636	0.003466	85.71	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-16	0.01	0.0021	0.1	No 14	0.008086	0.003819	78.57	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-17	0.01	0.0018	0.1	No 14	0.009414	0.002192	92.86	None	No	0.01	NP (NDs)
Chromium (mg/L)	HGWC-18	0.01	0.0005	0.1	No 14	0.008636	0.003468	85.71	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-14	0.02799	0.02334	0.038	No 16	0.02485	0.005897	6.25	None	x^3	0.01	Param.
Cobalt (mg/L)	HGWC-15	0.05047	0.0331	0.038	No 16	0.04179	0.01335	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-16	0.005	0.00037	0.038	No 16	0.004416	0.001597	87.5	None	No	0.01	NP (NDs)
Cobalt (mg/L)	HGWC-17	0.01647	0.01509	0.038	No 16	0.01578	0.001056	0	None	No	0.01	Param.
Cobalt (mg/L)	HGWC-18	0.1957	0.1667	0.038	Yes 16	0.1812	0.02233	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-14	1.657	1.162	5	No 16	1.409	0.3803	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-15	0.9032	0.4358	5	No 16	0.6695	0.3592	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-16	1.052	0.52	5	No 16	0.7859	0.4088	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-17	1.107	0.691	5	No 16	0.899	0.3197	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	HGWC-18	2.395	1.825	5	No 16	2.11	0.4386	0	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-14	0.3427	0.1379	4	No 17	0.2403	0.1635	17.65	None	No	0.01	Param.
Fluoride (mg/L)	HGWC-15	0.31	0.09	4	No 17	0.2271	0.137	35.29	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-16	0.42	0.23	4	No 17	0.261	0.1194	47.06	None	No	0.01	NP (normality)
Fluoride (mg/L)	HGWC-17	0.42	0.081	4	No 17	0.2777	0.2173	41.18	None	No	0.01	NP (Cohens/xfrm)
Fluoride (mg/L)	HGWC-18	0.6738	0.4309	4	No 17	0.5524	0.1938	5.882	None	No	0.01	Param.
Lead (mg/L)	HGWC-14	0.0019	0.0014	0.015	No 14	0.001851	0.0009337	7.143	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-15	0.005	0.0001	0.015	No 14	0.003316	0.002355	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-16	0.005	0.0001	0.015	No 14	0.002914	0.0025	57.14	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-17	0.005	0.000089	0.015	No 14	0.003248	0.002439	64.29	None	No	0.01	NP (normality)
Lead (mg/L)	HGWC-18	0.00154	0.0012	0.015	No 14	0.001646	0.0009815	7.143	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-14	0.03	0.03	0.04	No 16	0.03	0	100	None	No	0.01	NP (NDs)
Lithium (mg/L)	HGWC-15	0.03	0.0013	0.04	No 16	0.01305	0.01369	37.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-16	0.0041	0.0028	0.04	No 16	0.004962	0.006706	6.25	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-17	0.03	0.0011	0.04	No 16	0.01913	0.01449	62.5	None	No	0.01	NP (normality)
Lithium (mg/L)	HGWC-18	0.01494	0.01231	0.04	No 16	0.01363	0.002015	0	None	No	0.01	Param.
Molybdenum (mg/L)	HGWC-14	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-15	0.01	0.0007	0.1	No 14	0.009336	0.002486	92.86	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-16	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-17	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	HGWC-18	0.01	0.01	0.1	No 14	0.01	0	100	None	No	0.01	NP (NDs)

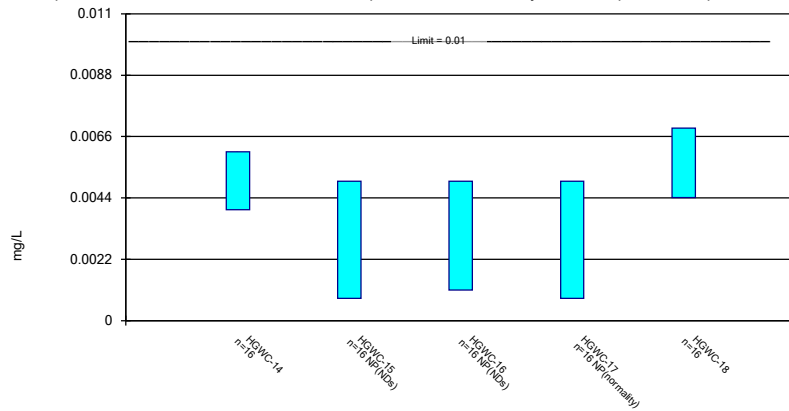
Federal Confidence Interval Summary - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 9:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium (mg/L)	HGWC-14	0.01423	0.006809	0.05	No	16	0.01052	0.005702	0	None	No	0.01	Param.
Selenium (mg/L)	HGWC-15	0.01	0.0016	0.05	No	16	0.007944	0.003751	75	None	No	0.01	NP (normality)
Selenium (mg/L)	HGWC-16	0.01	0.000089	0.05	No	16	0.009381	0.002478	93.75	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-17	0.01	0.0023	0.05	No	16	0.008362	0.003545	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	HGWC-18	0.03276	0.01722	0.05	No	16	0.02499	0.01194	6.25	None	No	0.01	Param.
Thallium (mg/L)	HGWC-14	0.000306	0.00028	0.002	No	16	0.0002979	0.00002985	0	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-15	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-16	0.001	0.001	0.002	No	16	0.001	0	100	None	No	0.01	NP (NDs)
Thallium (mg/L)	HGWC-17	0.001	0.00011	0.002	No	16	0.0006125	0.0004539	56.25	None	No	0.01	NP (normality)
Thallium (mg/L)	HGWC-18	0.001	0.00015	0.002	No	16	0.0005319	0.0004269	43.75	None	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

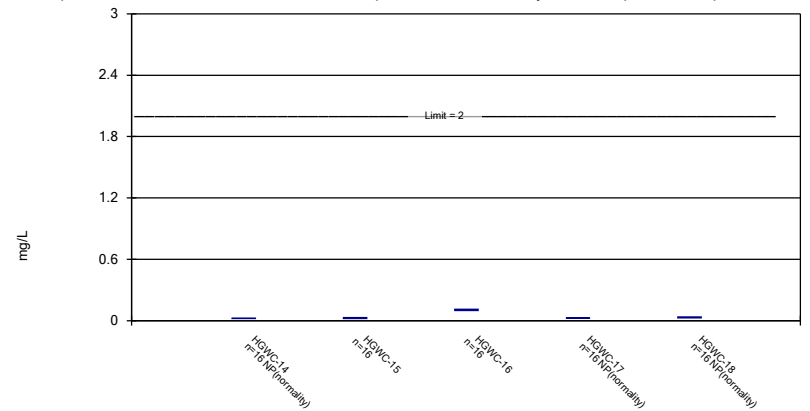
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Constituent: Arsenic Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

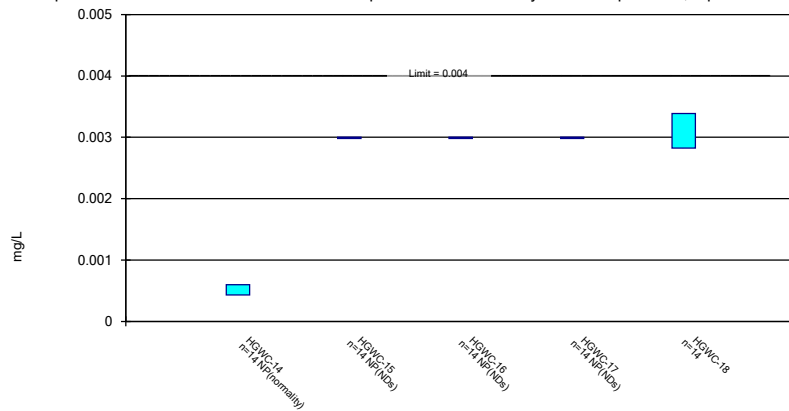
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

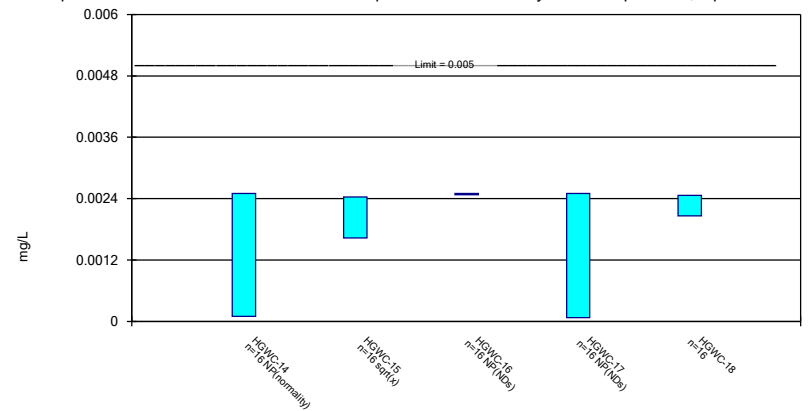
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

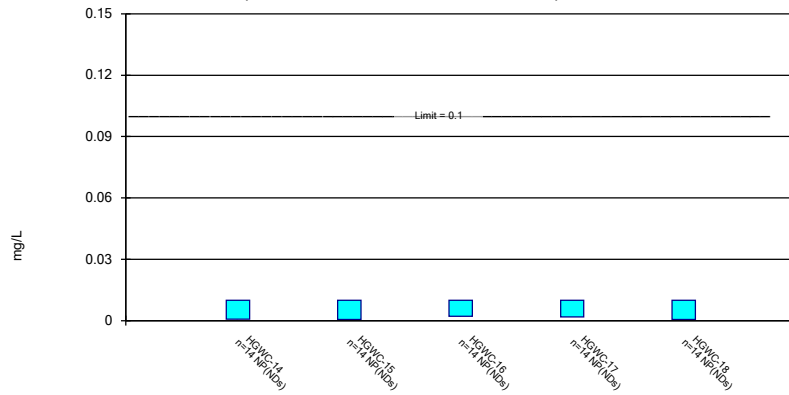
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

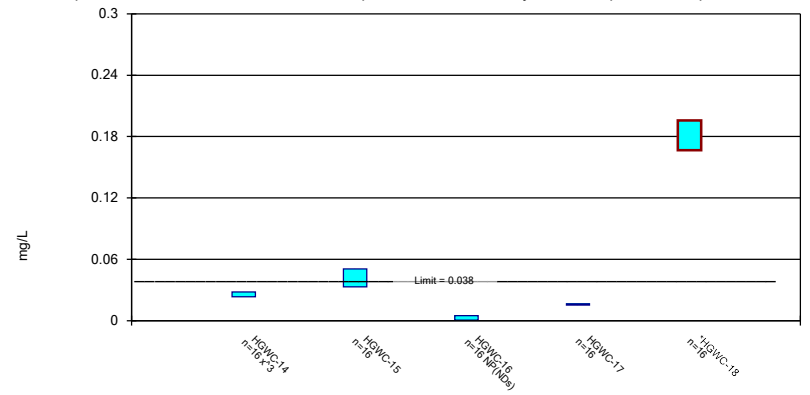
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Chromium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

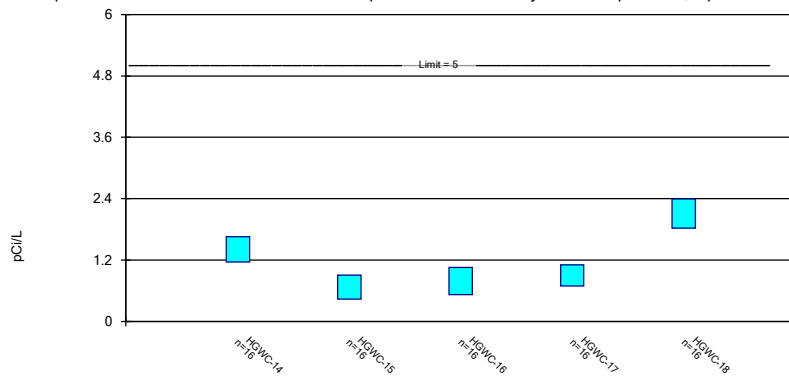
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric Confidence Interval

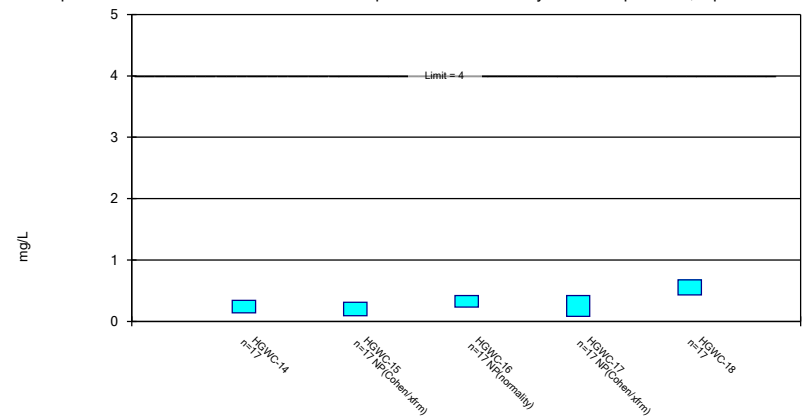
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

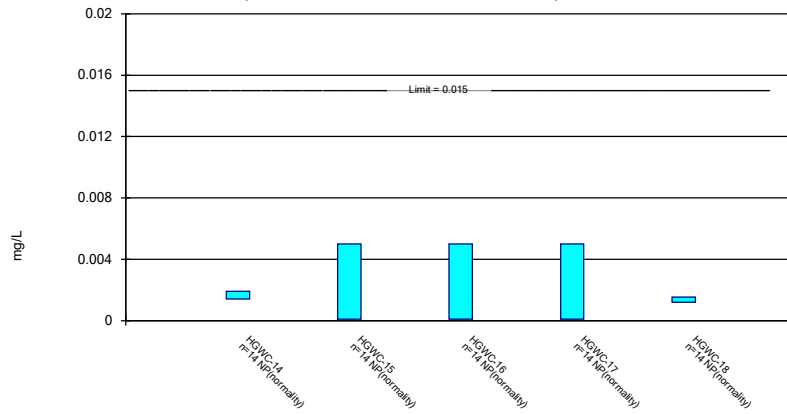
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

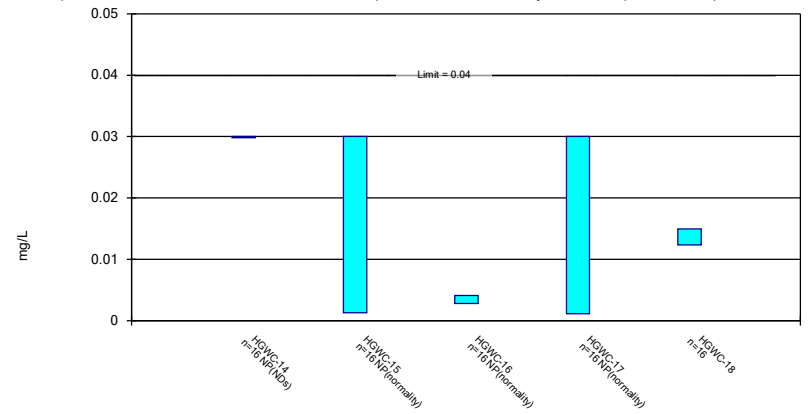
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

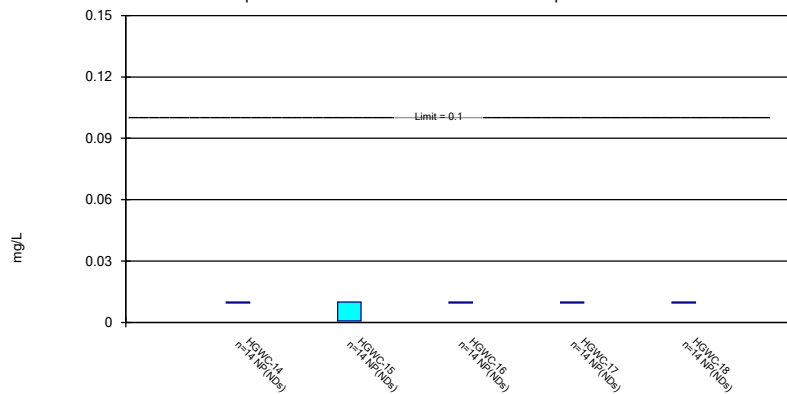
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

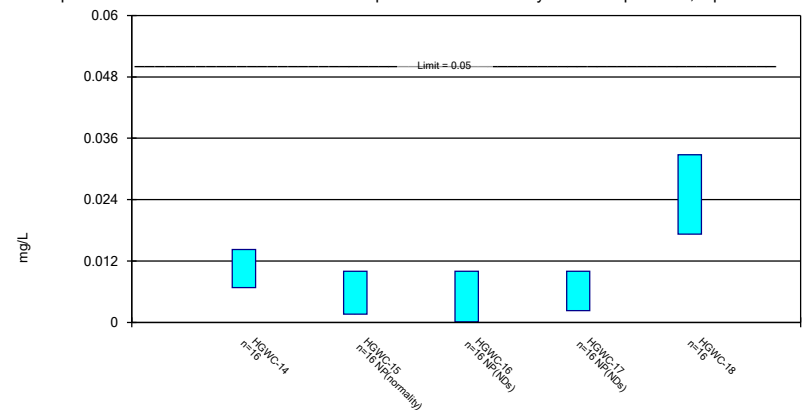
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Molybdenum Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

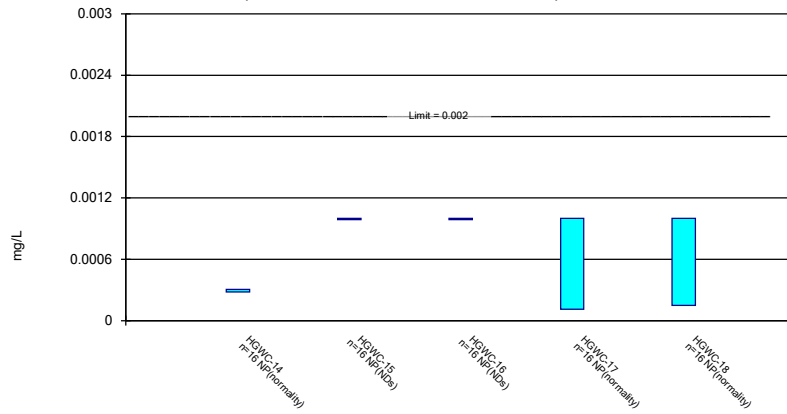
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

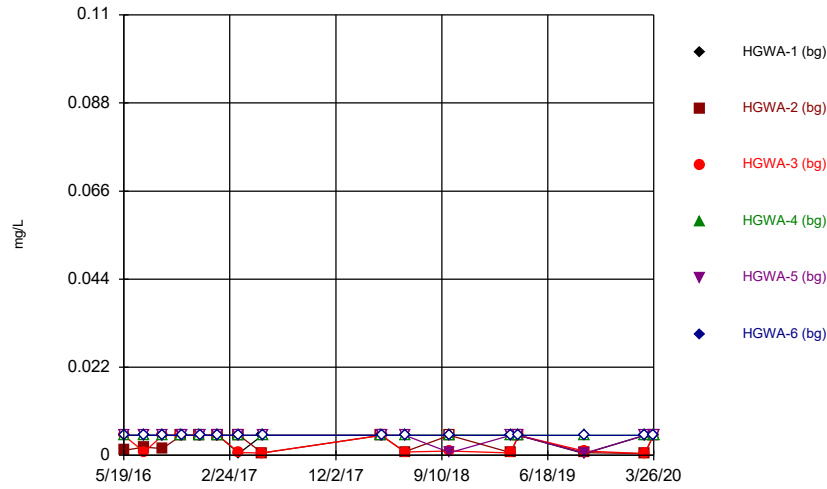


Constituent: Thallium Analysis Run 8/11/2020 9:07 AM View: Confidence Intervals - State
Plant Hammond Client: Southern Company Data: Hammond AP-2

ADDENDUM

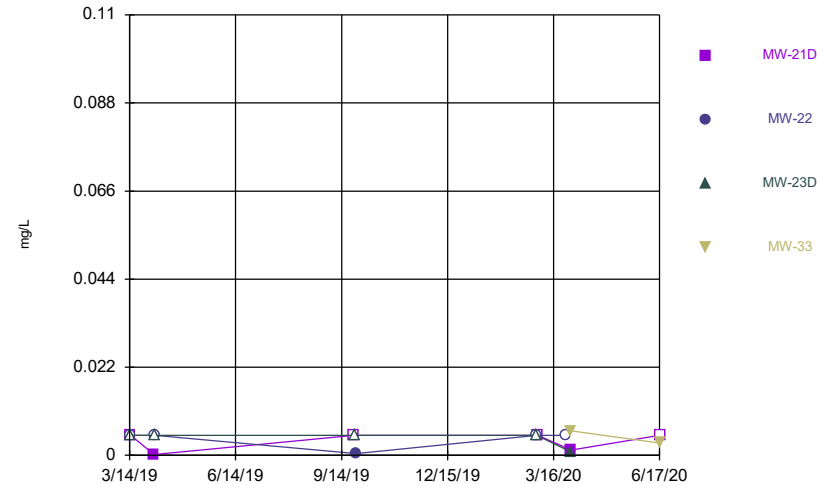
FIGURE A.

Time Series



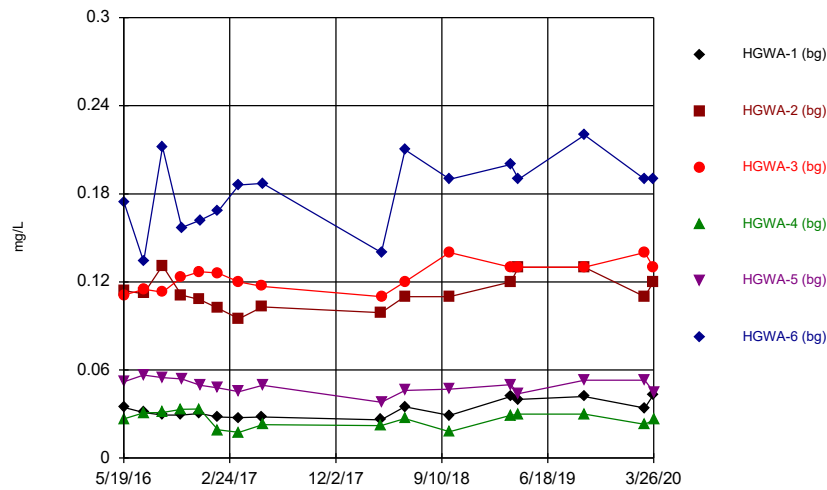
Constituent: Arsenic Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



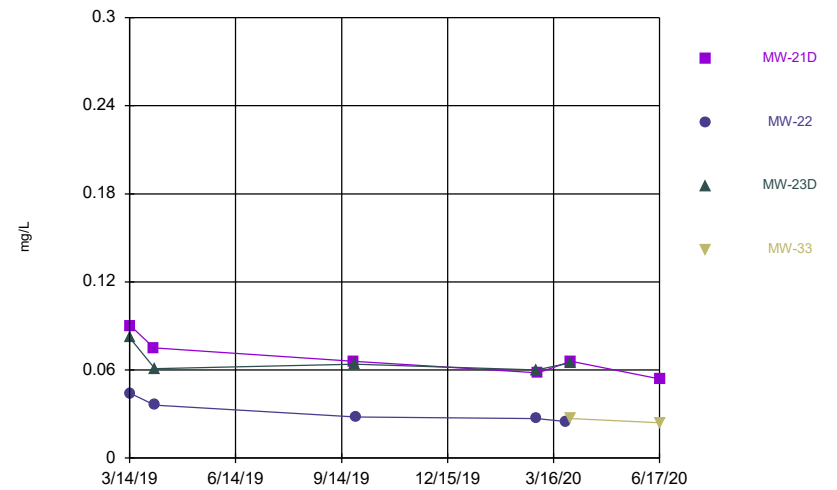
Constituent: Arsenic Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



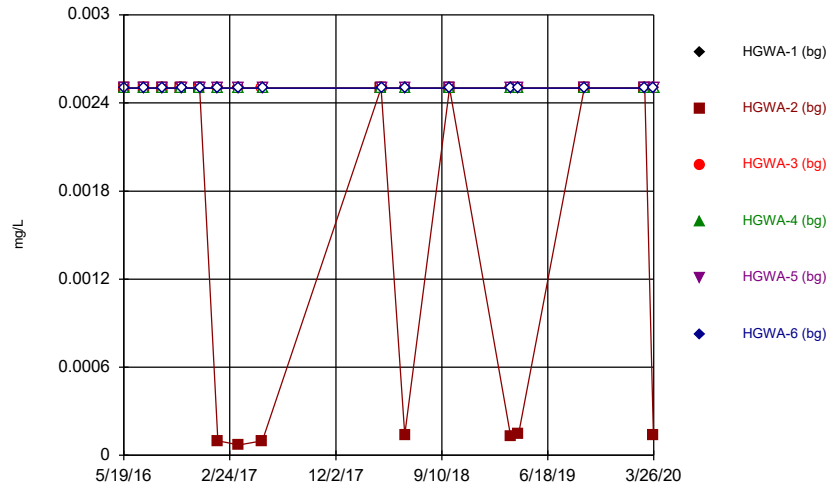
Constituent: Barium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



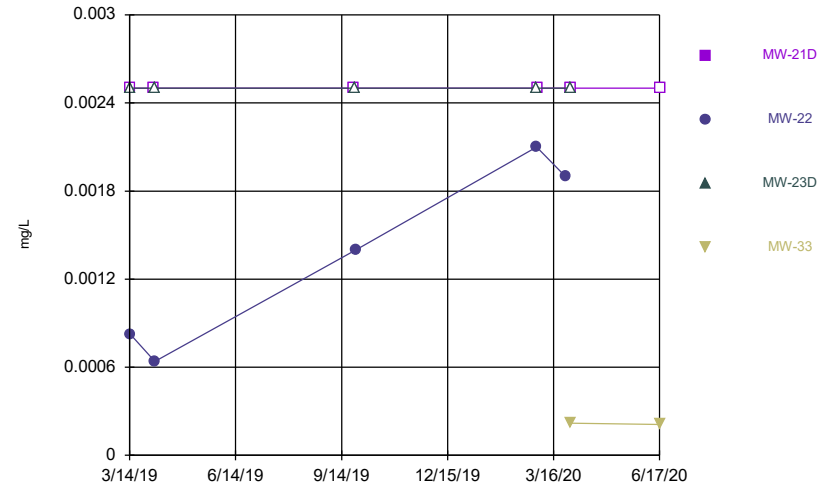
Constituent: Barium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



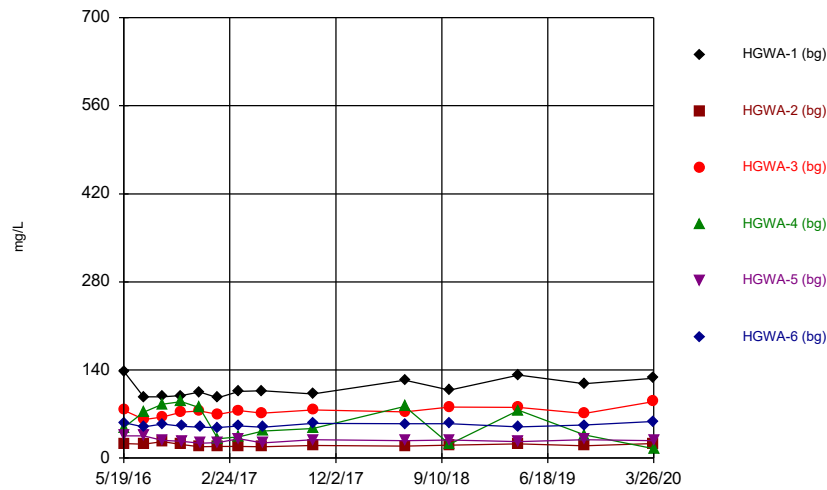
Constituent: Cadmium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



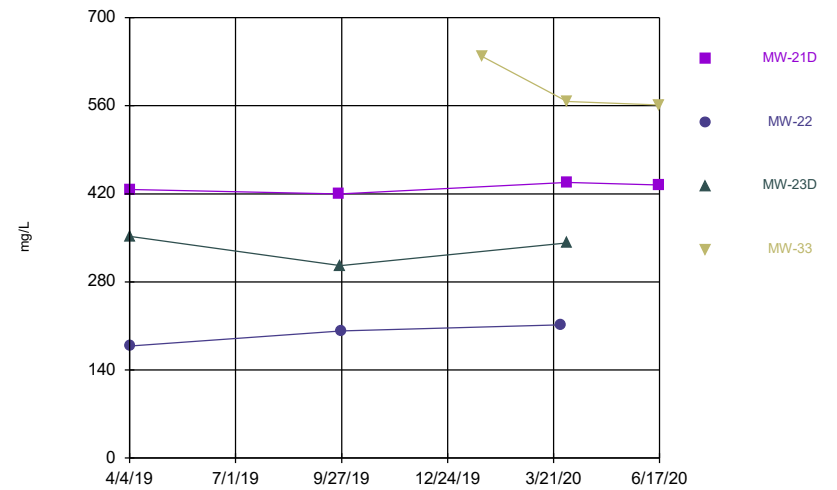
Constituent: Cadmium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



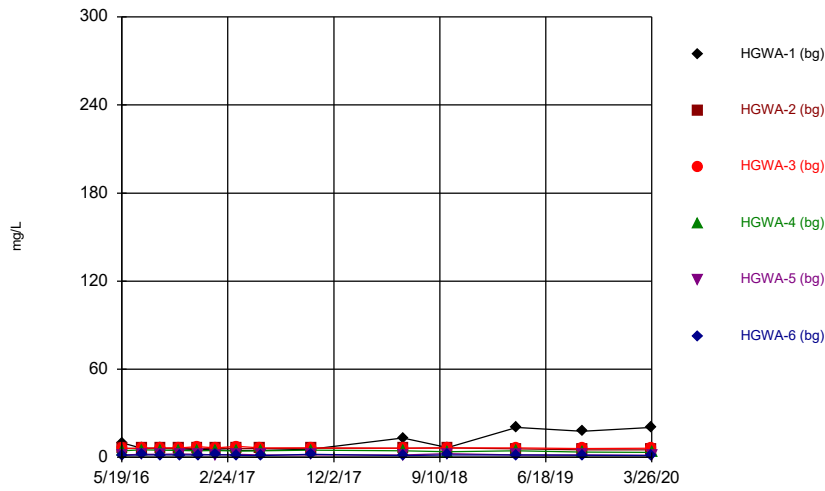
Constituent: Calcium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



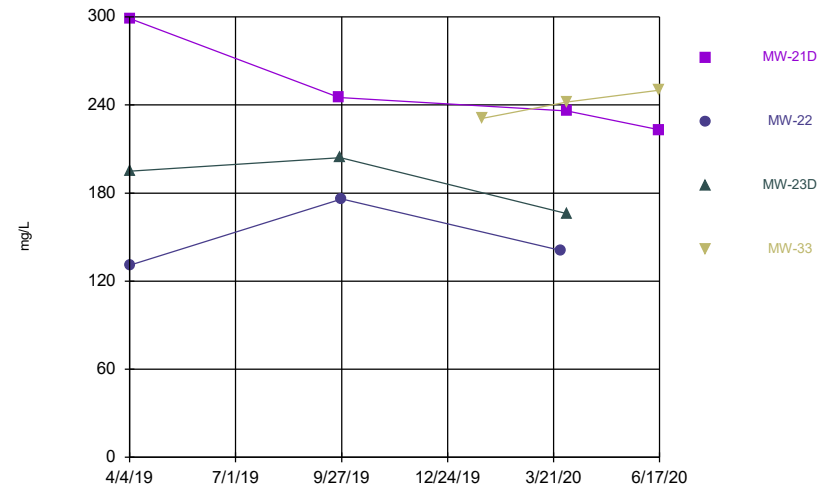
Constituent: Calcium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



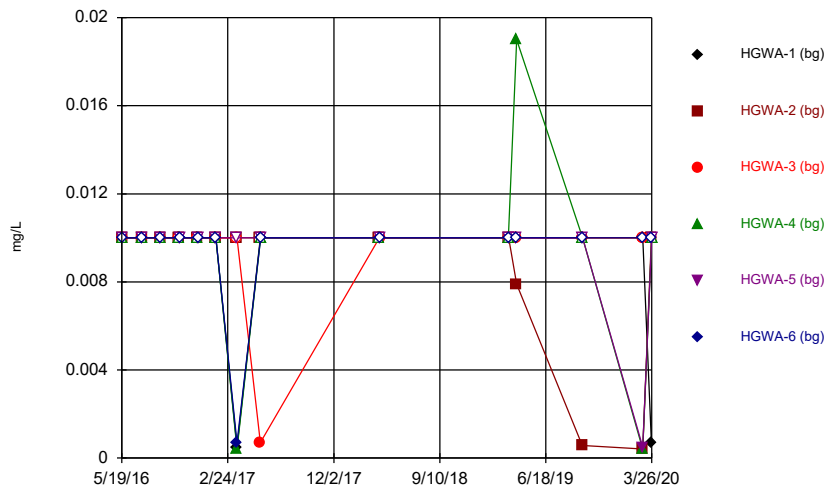
Constituent: Chloride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



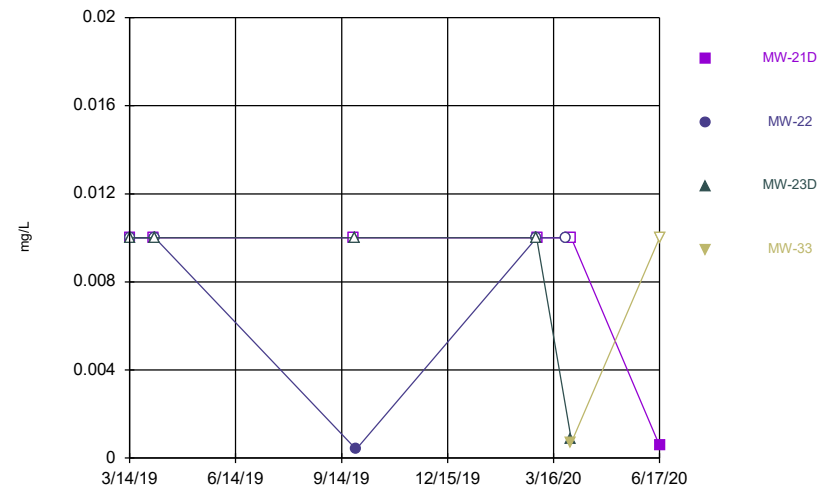
Constituent: Chloride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



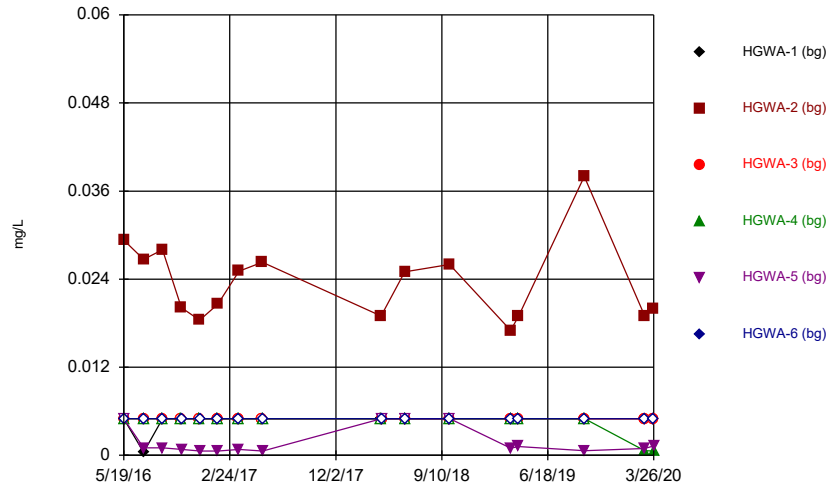
Constituent: Chromium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



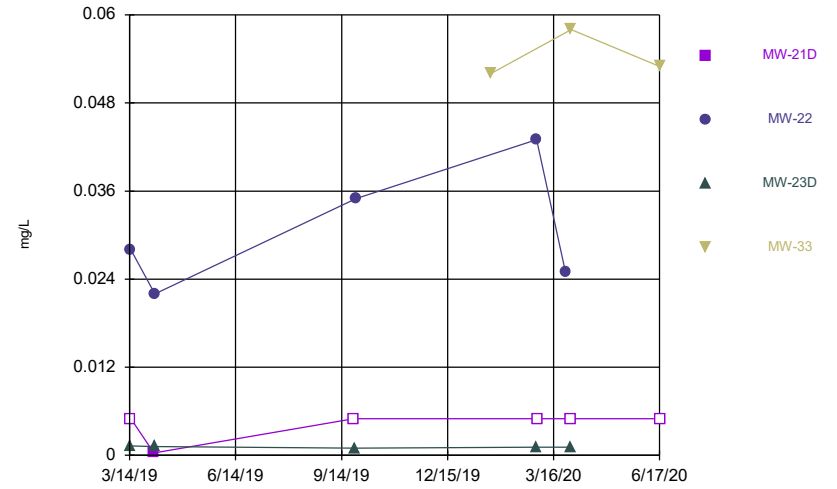
Constituent: Chromium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



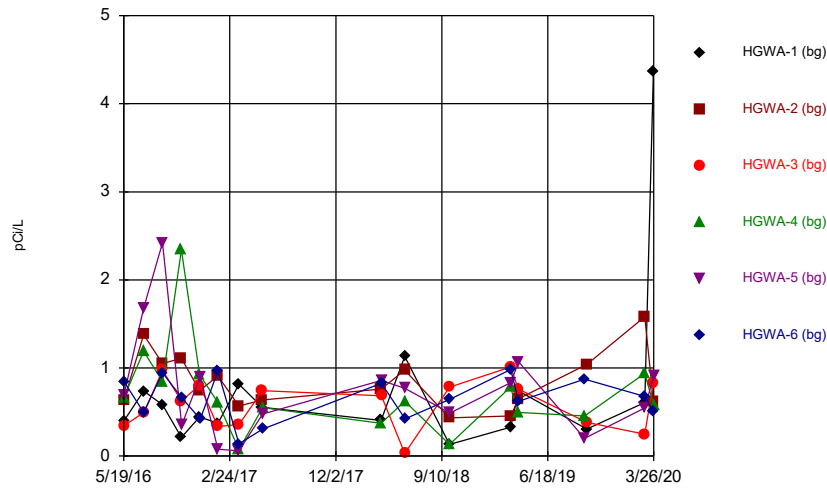
Constituent: Cobalt Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



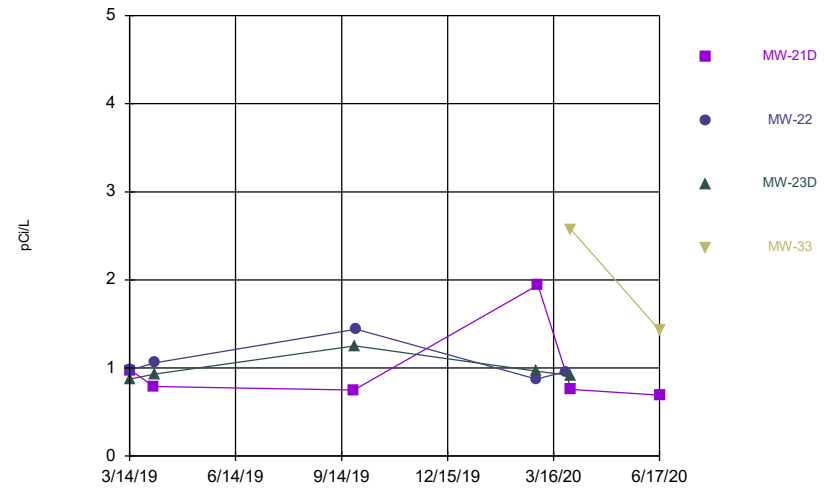
Constituent: Cobalt Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



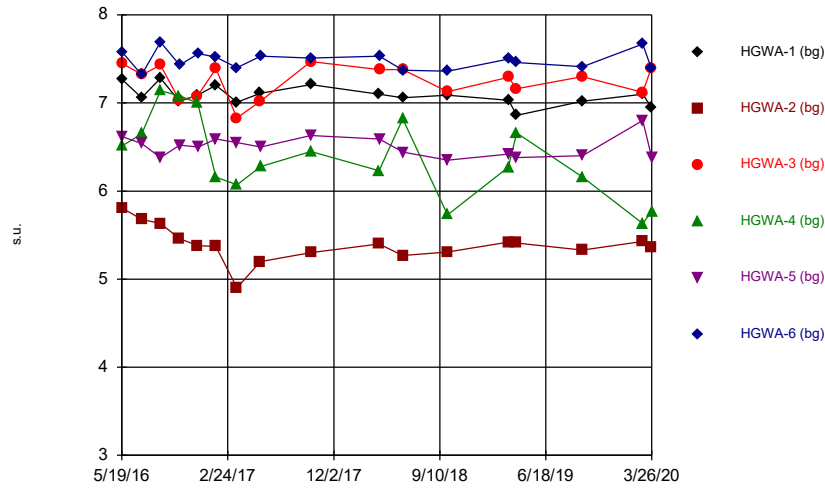
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



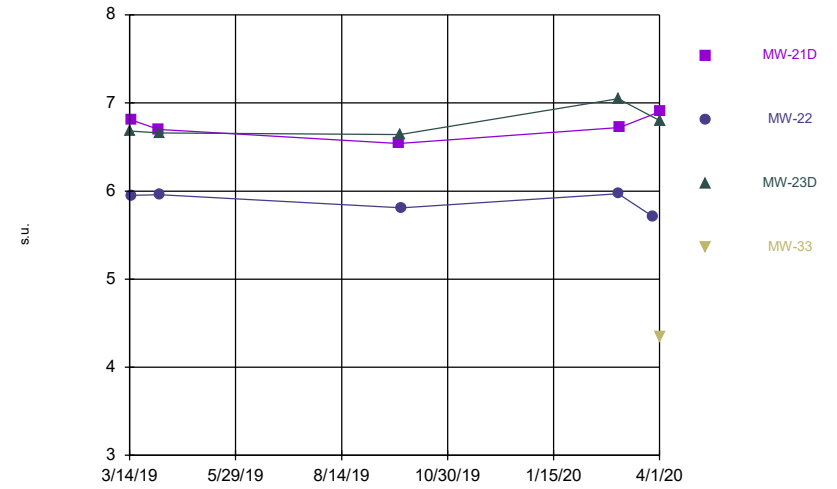
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



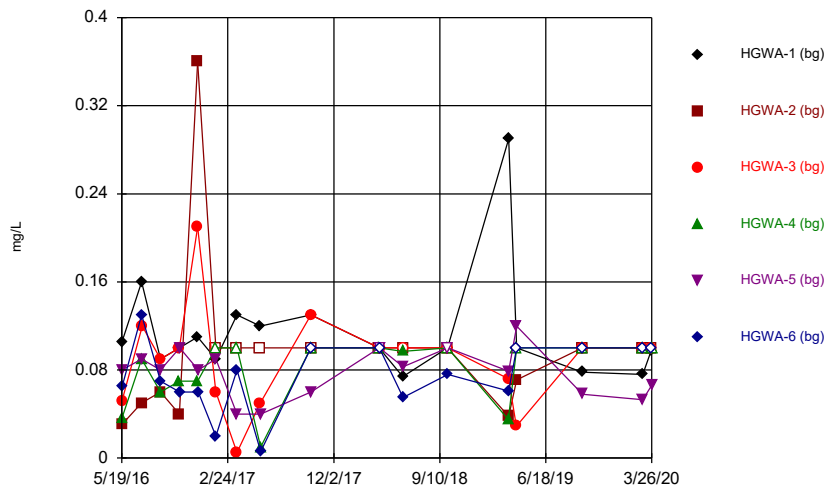
Constituent: Field pH Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



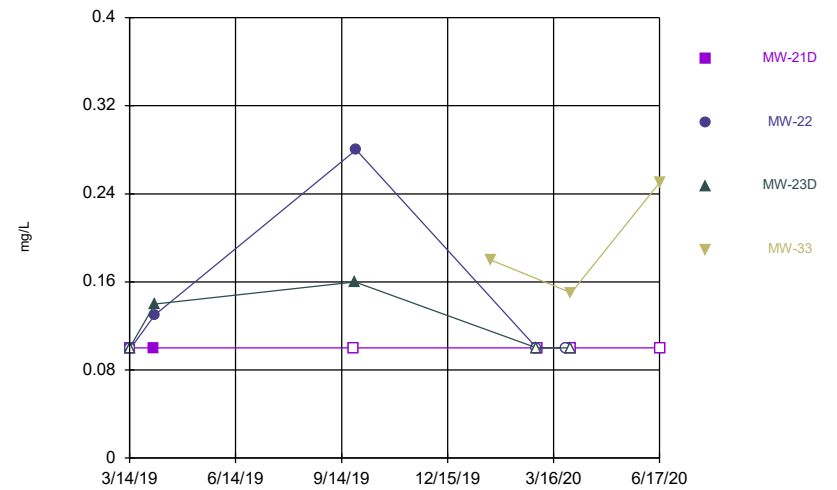
Constituent: Field pH Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



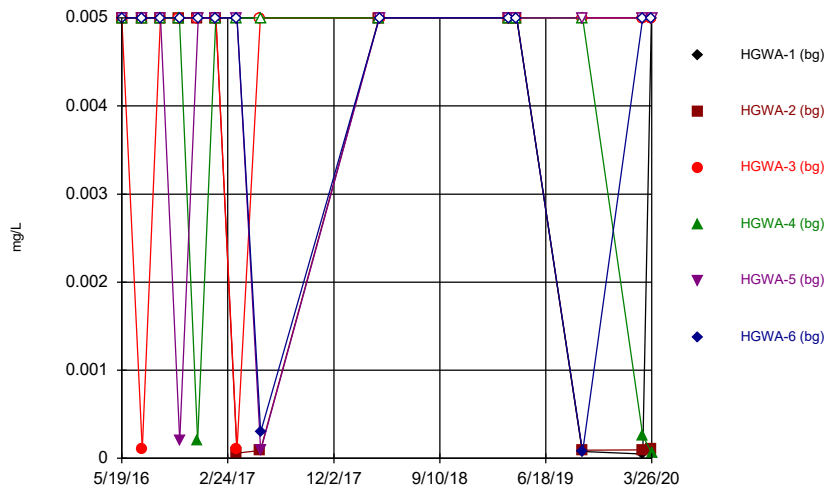
Constituent: Fluoride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



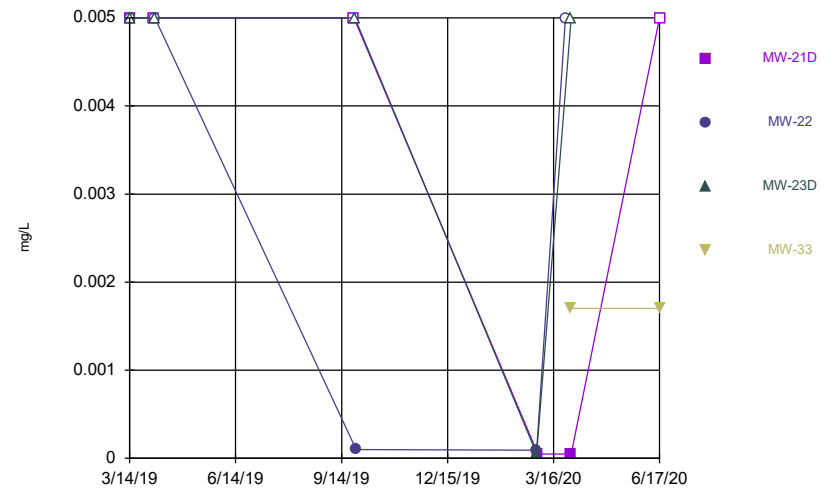
Constituent: Fluoride Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



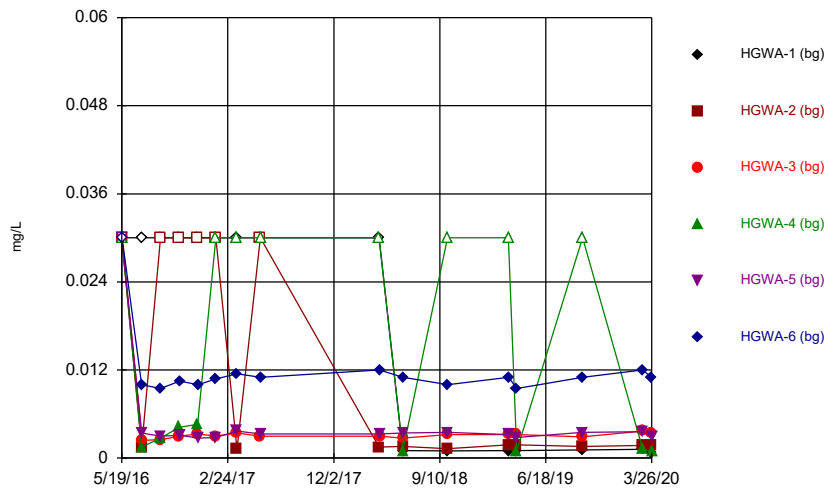
Constituent: Lead Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



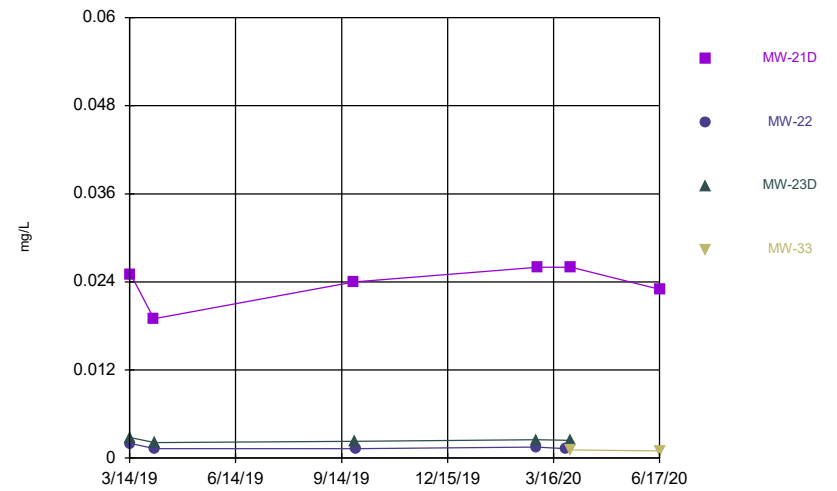
Constituent: Lead Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



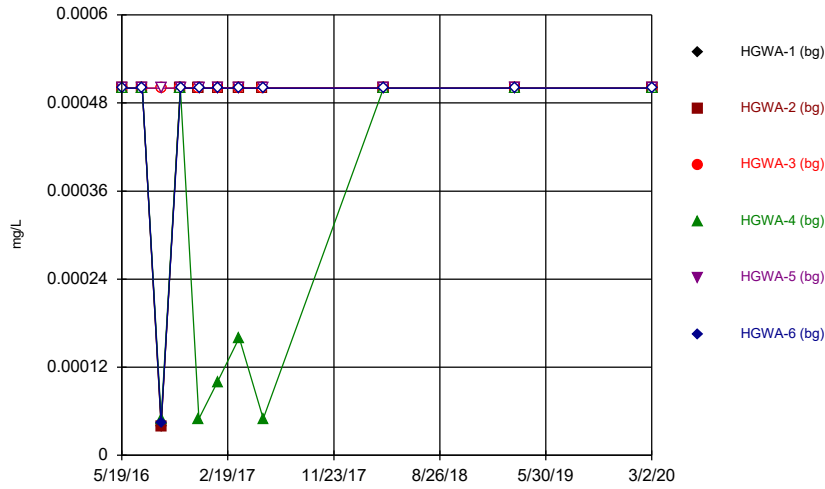
Constituent: Lithium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



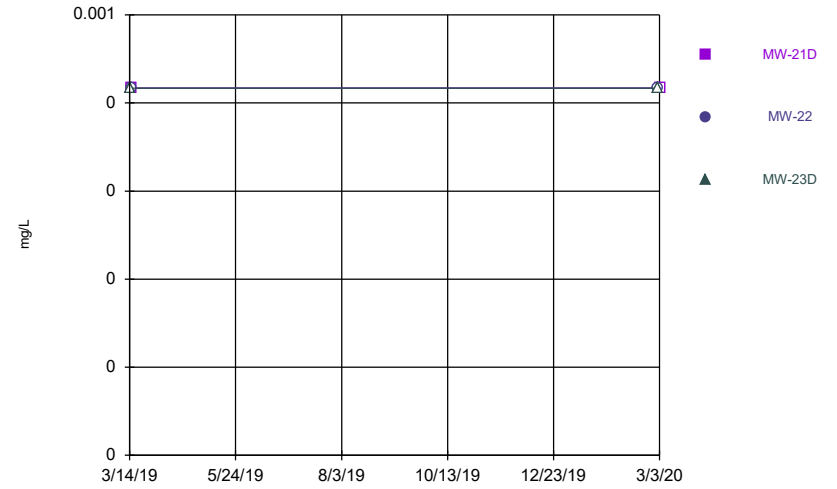
Constituent: Lithium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



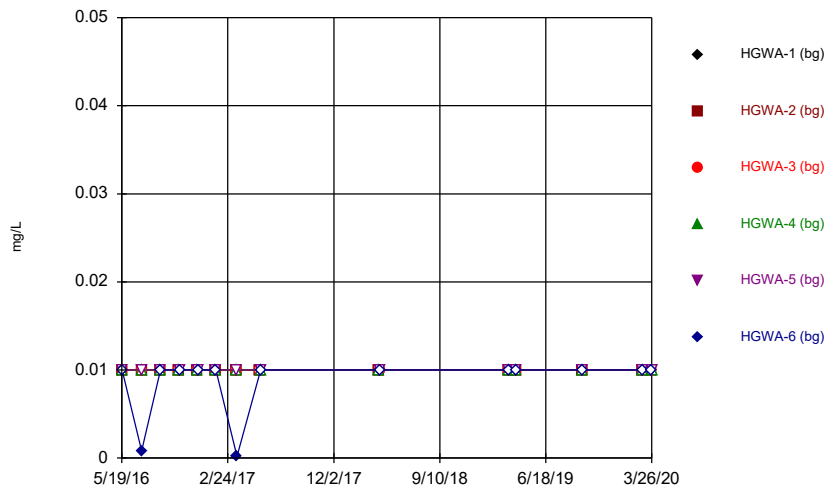
Constituent: Mercury Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



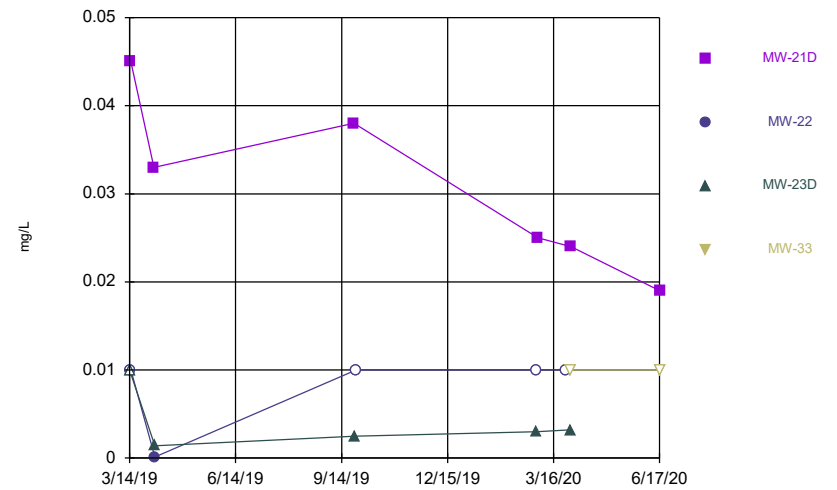
Constituent: Mercury Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



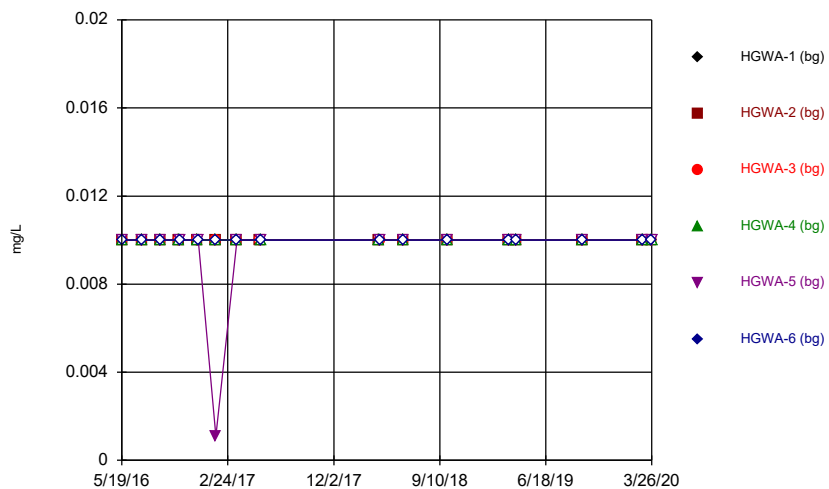
Constituent: Molybdenum Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



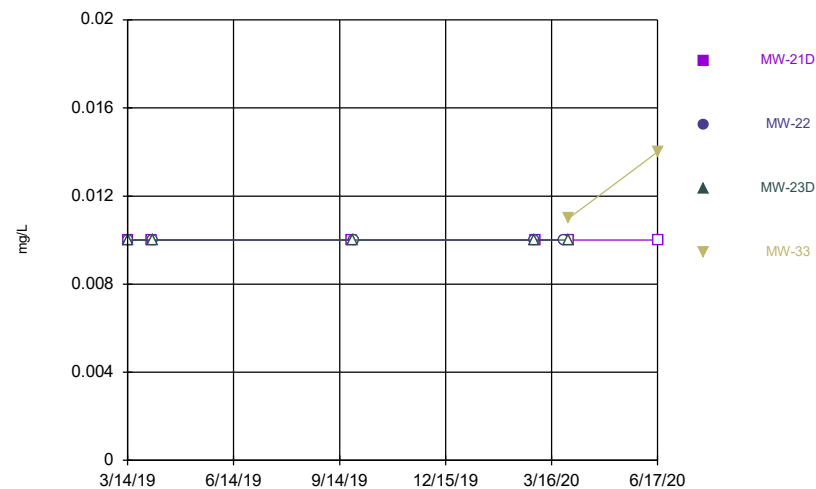
Constituent: Molybdenum Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



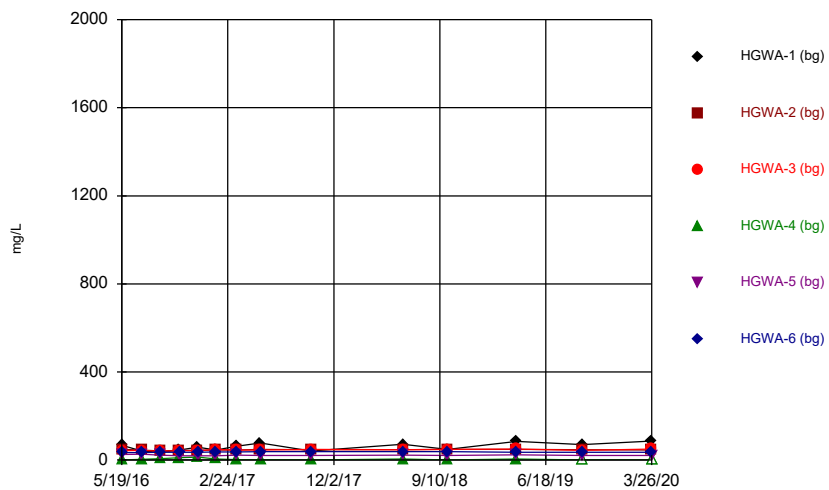
Constituent: Selenium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



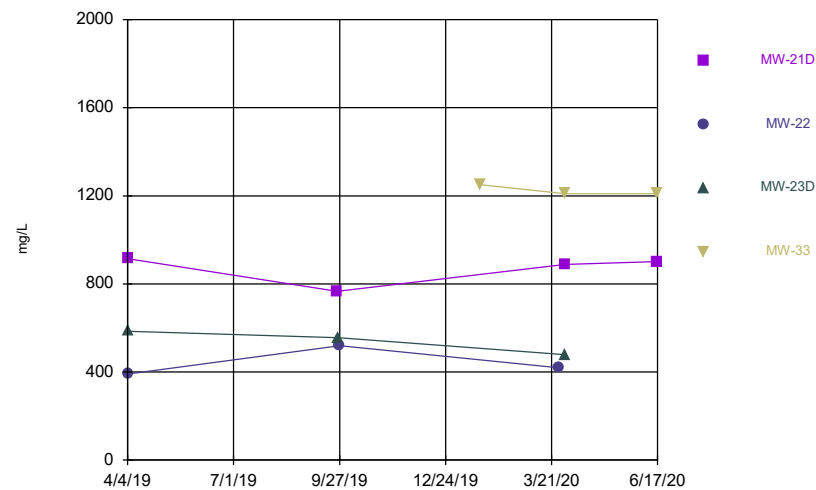
Constituent: Selenium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



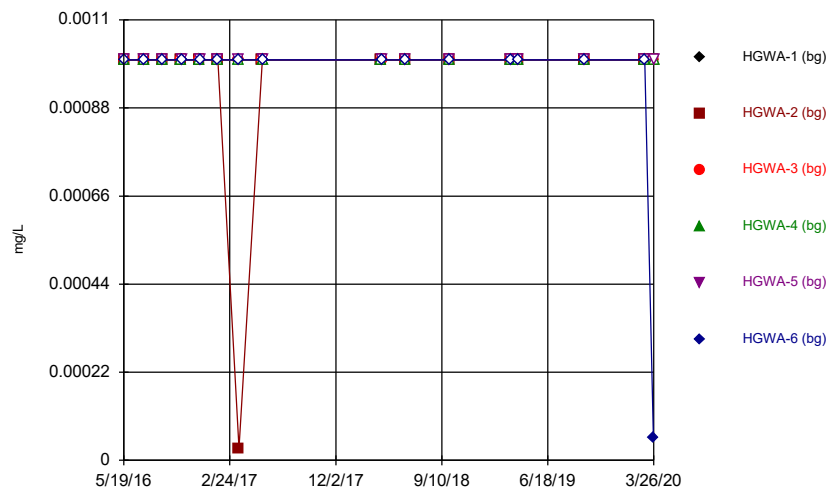
Constituent: Sulfate Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



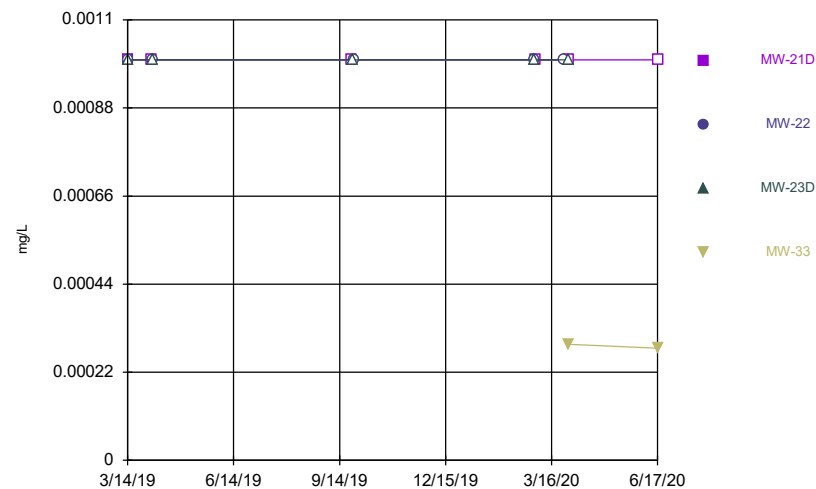
Constituent: Sulfate Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



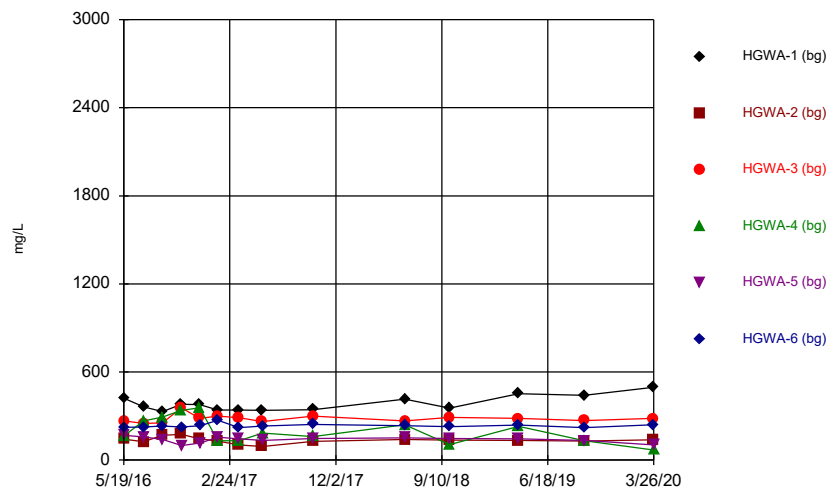
Constituent: Thallium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



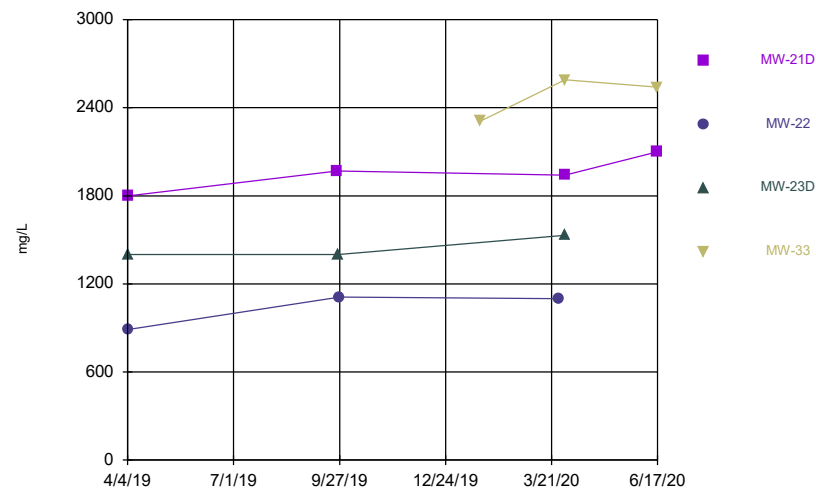
Constituent: Thallium Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 9:14 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.005	0.00127 (J)	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
7/11/2016	<0.005	0.002 (J)		<0.005	<0.005	<0.005			
7/12/2016			0.0008 (J)						
8/30/2016	<0.005	0.0017 (J)	<0.005	<0.005	<0.005	<0.005			
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					<0.005	<0.005			
12/6/2016	<0.005	<0.005	<0.005	<0.005					
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
3/21/2017	0.0005 (J)	<0.005	0.0007 (J)	<0.005	<0.005	<0.005			
5/22/2017	<0.005	0.0006 (J)	0.0006 (J)						
5/23/2017				<0.005	<0.005	<0.005			
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005			
6/4/2018	<0.005	0.00088 (J)	0.0008 (J)	<0.005					
6/5/2018					<0.005	<0.005			
10/1/2018	<0.005	<0.005	0.0011 (J)	<0.005					
10/2/2018					0.00064 (J)	<0.005			
3/11/2019				<0.005					
3/12/2019	<0.005	0.00069 (J)	0.00063 (J)		<0.005	<0.005			
3/14/2019									<0.005
3/15/2019							<0.005	<0.005	
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019							0.00019 (J)		
4/5/2019								<0.005	<0.005
9/23/2019	0.00046 (J)	0.00067 (J)	0.0011 (J)						
9/24/2019				<0.005	0.00055 (J)	<0.005			
9/25/2019							<0.005		
9/26/2019									<0.005
9/27/2019								0.00045 (J)	
3/2/2020	<0.005	0.00043 (J)	0.0004 (J)	<0.005	<0.005	<0.005		<0.005	<0.005
3/3/2020							<0.005		
3/25/2020	<0.005	<0.005	<0.005			<0.005			
3/26/2020				<0.005	<0.005				
3/27/2020								<0.005	
4/1/2020							0.0013 (J)		0.00082 (J)
6/17/2020							<0.005		

Time Series

Constituent: Arsenic (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0061
6/17/2020	0.0031 (J)

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.0346	0.114	0.111	0.0266	0.0519				
5/20/2016						0.174			
7/11/2016	0.0311	0.112		0.0309	0.0565	0.134			
7/12/2016			0.115						
8/30/2016	0.0293	0.131	0.113	0.031	0.0548	0.212			
10/19/2016	0.0293	0.111	0.123	0.0332					
10/20/2016					0.0539	0.157			
12/6/2016	0.0304	0.108	0.127	0.0334					
12/8/2016					0.0496	0.162			
1/24/2017	0.028	0.102	0.126	0.0192	0.0478	0.168			
3/21/2017	0.0275	0.095	0.12	0.0175	0.0453	0.186			
5/22/2017	0.0281	0.103	0.117						
5/23/2017				0.0227	0.0496	0.187			
4/2/2018	0.026	0.099		0.022					
4/3/2018			0.11		0.038	0.14			
6/4/2018	0.035	0.11	0.12	0.027					
6/5/2018					0.046	0.21			
10/1/2018	0.029	0.11	0.14	0.018					
10/2/2018					0.047	0.19			
3/11/2019				0.029					
3/12/2019	0.042	0.12	0.13		0.05	0.2			
3/14/2019									0.082
3/15/2019							0.09	0.044	
4/1/2019			0.13						
4/2/2019	0.04	0.13		0.03	0.044	0.19			
4/4/2019							0.075		
4/5/2019								0.036	0.061
9/23/2019	0.042	0.13	0.13						
9/24/2019				0.03	0.053	0.22			
9/25/2019							0.066		
9/26/2019									0.064
9/27/2019								0.028	
3/2/2020	0.034	0.11	0.14	0.023	0.053	0.19		0.027	0.06
3/3/2020							0.058		
3/25/2020	0.043	0.12	0.13			0.19			
3/26/2020				0.026	0.045				
3/27/2020								0.025	
4/1/2020							0.066		0.065
6/17/2020							0.054		

Time Series

Constituent: Barium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.027
6/17/2020	0.024

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.003	<0.003	<0.003	<0.003	<0.003				
5/20/2016						<0.003			
7/11/2016	<0.003	0.0001 (J)		<0.003	<0.003	<0.003			
7/12/2016			<0.003						
8/30/2016	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			
10/19/2016	<0.003	0.0001 (J)	<0.003	<0.003					
10/20/2016					<0.003	<0.003			
12/6/2016	<0.003	0.0002 (J)	<0.003	<0.003					
12/8/2016					<0.003	<0.003			
1/24/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
3/21/2017	<0.003	0.0001 (J)	<0.003	<0.003	<0.003	<0.003			
5/22/2017	<0.003	0.0001 (J)	<0.003						
5/23/2017				<0.003	<0.003	<0.003			
4/2/2018	<0.003	<0.003		<0.003					
4/3/2018			<0.003		<0.003	<0.003			
3/11/2019				5E-05 (J)					
3/12/2019	<0.003	0.00017 (J)	<0.003		<0.003	<0.003			
3/14/2019									<0.003
3/15/2019							<0.003	<0.003	
4/1/2019			<0.003						
4/2/2019	<0.003	0.00015 (J)		<0.003	<0.003	<0.003			
4/4/2019							<0.003		
4/5/2019								<0.003	<0.003
9/23/2019	<0.003	0.00011 (J)	<0.003						
9/24/2019				<0.003	<0.003	<0.003			
9/25/2019							<0.003		
9/26/2019									<0.003
9/27/2019								<0.003	
3/2/2020	<0.003	0.00014 (J)	<0.003	0.00019 (J)	<0.003	<0.003		<0.003	<0.003
3/3/2020							<0.003		
3/25/2020	<0.003	0.00016 (J)	<0.003			<0.003			
3/26/2020				7.6E-05 (J)	<0.003				
3/27/2020								<0.003	
4/1/2020							<0.003		<0.003
6/17/2020							<0.003		

Time Series

Constituent: Beryllium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0011 (J)
6/17/2020	0.00099 (J)

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.0214 (J)	0.0321 (J)	<0.04	<0.04	<0.04				
5/20/2016						0.0363 (J)			
7/11/2016	0.0142 (J)	0.0337 (J)		0.0175 (J)	0.0052 (J)	0.0179 (J)			
7/12/2016			0.0074 (J)						
8/30/2016	0.0074 (J)	0.0173 (J)	<0.04	0.0072 (J)	0.0068 (J)	0.014 (J)			
10/19/2016	0.0224 (J)	0.0341 (J)	0.0085 (J)	0.018 (J)					
10/20/2016					0.0135 (J)	0.0197 (J)			
12/6/2016	0.0211 (J)	0.0326 (J)	0.0085 (J)	0.0158 (J)					
12/8/2016					0.0083 (J)	0.0159 (J)			
1/24/2017	0.0165 (J)	0.0365 (J)	0.01 (J)	0.0145 (J)	0.0072 (J)	<0.04			
3/21/2017	0.0187 (J)	0.0349 (J)	0.0079 (J)	0.0101 (J)	<0.04	0.0166 (J)			
5/22/2017	0.0782	0.0475	0.0131 (J)						
5/23/2017				0.0159 (J)	0.0095 (J)	0.0167 (J)			
10/3/2017	0.0198 (J)	0.0386 (J)	0.0097 (J)	0.0162 (J)	0.0071 (J)	0.017 (J)			
6/4/2018	0.02 (J)	0.036 (J)	0.017 (J)	0.014 (J)					
6/5/2018					0.0066 (J)	0.016 (J)			
10/1/2018	0.013 (J)	0.035 (J)	0.0061 (J)	0.0093 (J)					
10/2/2018					0.0081 (J)	0.014 (J)			
4/1/2019			0.0066 (J)						
4/2/2019	0.016 (J)	0.034 (J)		0.01 (J)	0.0052 (J)	0.013 (J)			
4/4/2019							5.2		
4/5/2019								2.1	3
9/23/2019	0.021 (J)	0.04 (J)	0.0081 (J)						
9/24/2019				0.013 (J)	0.0088 (J)	0.016 (J)			
9/25/2019							6.4		
9/26/2019									3.8
9/27/2019								2.9	
3/25/2020	0.025 (J)	0.039 (J)	0.0096 (J)			0.021 (J)			
3/26/2020				0.012 (J)	0.0072 (J)				
3/27/2020								2.4	
4/1/2020							6.3		3.5
6/17/2020							5.8		

Time Series

Constituent: Boron (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	11.2
4/1/2020	11.6
6/17/2020	10.3

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025				
5/20/2016						<0.0025			
7/11/2016	<0.0025	<0.0025		<0.0025	<0.0025	<0.0025			
7/12/2016			<0.0025						
8/30/2016	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			
10/19/2016	<0.0025	<0.0025	<0.0025	<0.0025					
10/20/2016					<0.0025	<0.0025			
12/6/2016	<0.0025	<0.0025	<0.0025	<0.0025					
12/8/2016					<0.0025	<0.0025			
1/24/2017	<0.0025	0.0001 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
3/21/2017	<0.0025	7E-05 (J)	<0.0025	<0.0025	<0.0025	<0.0025			
5/22/2017	<0.0025	0.0001 (J)	<0.0025						
5/23/2017				<0.0025	<0.0025	<0.0025			
4/2/2018	<0.0025	<0.0025		<0.0025					
4/3/2018			<0.0025		<0.0025	<0.0025			
6/4/2018	<0.0025	0.00014 (J)	<0.0025	<0.0025					
6/5/2018					<0.0025	<0.0025			
10/1/2018	<0.0025	<0.0025	<0.0025	<0.0025					
10/2/2018					<0.0025	<0.0025			
3/11/2019				<0.0025					
3/12/2019	<0.0025	0.00013 (J)	<0.0025		<0.0025	<0.0025			
3/14/2019									<0.0025
3/15/2019							<0.0025	0.00082 (J)	
4/1/2019			<0.0025						
4/2/2019	<0.0025	0.00015 (J)		<0.0025	<0.0025	<0.0025			
4/4/2019							<0.0025		
4/5/2019								0.00064 (J)	<0.0025
9/23/2019	<0.0025	<0.0025	<0.0025						
9/24/2019				<0.0025	<0.0025	<0.0025			
9/25/2019							<0.0025		
9/26/2019									<0.0025
9/27/2019								0.0014 (J)	
3/2/2020	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		0.0021 (J)	<0.0025
3/3/2020							<0.0025		
3/25/2020	<0.0025	0.00014 (J)	<0.0025			<0.0025			
3/26/2020				<0.0025	<0.0025				
3/27/2020								0.0019 (J)	
4/1/2020							<0.0025		<0.0025
6/17/2020							<0.0025		

Time Series

Constituent: Cadmium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.00022 (J)
6/17/2020	0.00021 (J)

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	138	22.9	76.2	48.4	35.5				
5/20/2016						56.1			
7/11/2016	97.2	22.3		73	35.4	49.3			
7/12/2016			61.5						
8/30/2016	97.5	26.4	65.1	85.7	28	53.9			
10/19/2016	99.2	21.7	73.2	89.7					
10/20/2016					26.7	50.7			
12/6/2016	105	18.2	74.9	80					
12/8/2016					23.5	49.2			
1/24/2017	95.7	18.5	69.6	30.8	24.5	48.3			
3/21/2017	106	18.6	75.7	34	30.8	51.3			
5/22/2017	107	17.8	71.5						
5/23/2017				43	24.2	49.1			
10/3/2017	102	20.2	76.3	46.9	29	55.1			
6/4/2018	124	19.1	73.4	81.9					
6/5/2018					27.8	54.5			
10/1/2018	108	20.5 (J)	80.9	22 (J)					
10/2/2018					28.9	54.7			
4/1/2019			80.5						
4/2/2019	132	22.5 (J)		76	26.3	49.7			
4/4/2019							427		
4/5/2019								178	352
9/23/2019	118	19.5	71						
9/24/2019				36.6	29.3	52.5			
9/25/2019							420		
9/26/2019									306
9/27/2019								202	
3/25/2020	127	23	89.8			58.1			
3/26/2020				14.9	27.8				
3/27/2020								212	
4/1/2020							438		342
6/17/2020							434		

Time Series

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

1/22/2020	638
4/1/2020	567
6/17/2020	561

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	9.94	6.14	5.93	4.56	1.57				
5/20/2016						1.35			
7/11/2016	6.3	5.9		5	2	1.7			
7/12/2016			6.2						
8/30/2016	6	6.2	6.4	4.9	2	1.6			
10/19/2016	5.8	6.1	6.5	4.6					
10/20/2016					2.2	1.6			
12/6/2016	5.4	6	7.2	4.5					
12/8/2016					2	1.6			
1/24/2017	5.2	6.1	6.4	4.7	1.6	1.9			
3/21/2017	4.6	5.9	7.5	4.3	2	1.3			
5/22/2017	4.6	5.9	6.5						
5/23/2017				4.5	1.7	1.2			
10/3/2017	5.6	6.3	6.5	4.8	1.7	2.1			
6/4/2018	13.1	6.1	6.3	4.5					
6/5/2018					1.6	1.2			
10/1/2018	6.6	6.4	6.4	3.8					
10/2/2018					2.4	1.7			
4/1/2019			6.5						
4/2/2019	20.3	5.8		4.4	1.7	1.6			
4/4/2019							299		
4/5/2019								131	195
9/23/2019	17.7	5.1	5.9						
9/24/2019				3.6	1.7	1.3			
9/25/2019							245		
9/26/2019									204
9/27/2019								176	
3/25/2020	20.4	5.2	6.1			1.2			
3/26/2020				3.4	1.4				
3/27/2020								141	
4/1/2020							236		166
6/17/2020							223		

Time Series

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	231
4/1/2020	242
6/17/2020	250

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01						
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/21/2017	0.0005 (J)	<0.01	<0.01	0.0004 (J)	<0.01	0.0007 (J)			
5/22/2017	<0.01	<0.01	0.0007 (J)						
5/23/2017				<0.01	<0.01	<0.01			
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01			
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019									<0.01
3/15/2019							<0.01	<0.01	
4/1/2019			<0.01						
4/2/2019	<0.01	0.0079 (J)		0.019	<0.01	<0.01			
4/4/2019							<0.01		
4/5/2019								<0.01	<0.01
9/23/2019	<0.01	0.00058 (J)	<0.01						
9/24/2019				<0.01	<0.01	<0.01			
9/25/2019							<0.01		
9/26/2019									<0.01
9/27/2019								0.0004 (J)	
3/2/2020	<0.01	0.00041 (J)	<0.01	0.0004 (J)	0.0005 (J)	<0.01		<0.01	<0.01
3/3/2020							<0.01		
3/25/2020	0.00072 (J)	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01				
3/27/2020								<0.01	
4/1/2020							<0.01		0.00086 (J)
6/17/2020							0.00057 (J)		

Time Series

Constituent: Chromium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.00069 (J)
6/17/2020	<0.01

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.005	0.0293	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
7/11/2016	0.0004 (J)	0.0267		<0.005	0.001 (J)	<0.005			
7/12/2016			<0.005						
8/30/2016	<0.005	0.028	<0.005	<0.005	0.001 (J)	<0.005			
10/19/2016	<0.005	0.0201	<0.005	<0.005					
10/20/2016					0.0008 (J)	<0.005			
12/6/2016	<0.005	0.0184	<0.005	<0.005					
12/8/2016					0.0006 (J)	<0.005			
1/24/2017	<0.005	0.0206	<0.005	<0.005	0.0006 (J)	<0.005			
3/21/2017	<0.005	0.0251	<0.005	<0.005	0.0008 (J)	<0.005			
5/22/2017	<0.005	0.0263	<0.005						
5/23/2017				<0.005	0.0006 (J)	<0.005			
4/2/2018	<0.005	0.019		<0.005					
4/3/2018			<0.005		<0.005	<0.005			
6/4/2018	<0.005	0.025	<0.005	<0.005					
6/5/2018					<0.005	<0.005			
10/1/2018	<0.005	0.026	<0.005	<0.005					
10/2/2018					<0.005	<0.005			
3/11/2019				<0.005					
3/12/2019	<0.005	0.017	<0.005		0.00099 (J)	<0.005			
3/14/2019									0.0013 (J)
3/15/2019							<0.005	0.028	
4/1/2019			<0.005						
4/2/2019	<0.005	0.019		<0.005	0.0012 (J)	<0.005			
4/4/2019							0.00034 (J)		
4/5/2019								0.022	0.0012 (J)
9/23/2019	<0.005	0.038	<0.005						
9/24/2019				<0.005	0.00063 (J)	<0.005			
9/25/2019							<0.005		
9/26/2019									0.00098 (J)
9/27/2019								0.035	
3/2/2020	<0.005	0.019	<0.005	0.00063 (J)	0.00093 (J)	<0.005		0.043	0.0011 (J)
3/3/2020							<0.005		
3/25/2020	<0.005	0.02	<0.005			<0.005			
3/26/2020				0.00058 (J)	0.0013 (J)				
3/27/2020								0.025	
4/1/2020							<0.005		0.0011 (J)
6/17/2020							<0.005		

Time Series

Constituent: Cobalt (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	0.052
4/1/2020	0.058
6/17/2020	0.053

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.397 (U)	0.627 (U)	0.342 (U)	0.662 (U)	0.685 (U)				
5/20/2016						0.843 (U)			
7/11/2016	0.738 (U)	1.38		1.19	1.68	0.494 (U)			
7/12/2016			0.499 (U)						
8/30/2016	0.581 (U)	1.05 (U)	0.976 (U)	0.847 (U)	2.42	0.946 (U)			
10/19/2016	0.213 (U)	1.11 (U)	0.626 (U)	2.34					
10/20/2016					0.351 (U)	0.664 (U)			
12/6/2016	0.444 (U)	0.741 (U)	0.805 (U)	0.925 (U)					
12/8/2016					0.905 (U)	0.421 (U)			
1/24/2017	0.373 (U)	0.908 (U)	0.336 (U)	0.607 (U)	0.0774 (U)	0.965 (U)			
3/21/2017	0.816 (U)	0.567 (U)	0.358 (U)	0.074 (U)	0.0599 (U)	0.139 (U)			
5/22/2017	0.554 (U)	0.638 (U)	0.744 (U)						
5/23/2017				0.55 (U)	0.477 (U)	0.308 (U)			
4/2/2018	0.405 (U)	0.761 (U)		0.371 (U)					
4/3/2018			0.684 (U)		0.858 (U)	0.828 (U)			
6/4/2018	1.13 (U)	0.975 (U)	0.0291 (U)	0.622 (U)					
6/5/2018					0.767 (U)	0.424 (U)			
10/1/2018	0.132 (U)	0.434 (U)	0.781 (U)	0.132 (U)					
10/2/2018					0.489 (U)	0.643 (U)			
3/11/2019				0.781 (U)					
3/12/2019	0.327 (U)	0.454 (U)	1.01 (U)		0.833 (U)	0.982 (U)			
3/14/2019									0.872 (U)
3/15/2019							0.972 (U)	0.977	
4/1/2019			0.76 (U)						
4/2/2019	0.739 (U)	0.651 (U)		0.494 (U)	1.07 (U)	0.621 (U)			
4/4/2019							0.791 (U)		
4/5/2019								1.06 (U)	0.932 (U)
9/24/2019				0.455 (U)	0.201 (U)	0.874 (U)			
9/25/2019							0.751 (U)		
9/26/2019									1.25
9/27/2019								1.44 (U)	
9/30/2019	0.306 (U)	1.04 (U)	0.384 (U)						
3/2/2020	0.61 (U)	1.58	0.249 (U)	0.937 (U)	0.547 (U)	0.676 (U)		0.872 (U)	0.964 (U)
3/3/2020							1.94		
3/25/2020	4.36	0.621 (U)	0.833 (U)			0.509 (U)			
3/26/2020				0.578 (U)	0.907 (U)				
3/27/2020								0.96 (U)	
4/1/2020							0.758 (U)		0.914 (U)
6/17/2020							0.691 (U)		

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
4/1/2020	2.57
6/17/2020	1.43 (U)

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	7.27	5.81	7.45	6.51	6.62				
5/20/2016						7.58			
7/11/2016	7.06	5.68		6.65	6.54	7.32			
7/12/2016			7.32						
8/30/2016	7.28	5.63	7.43	7.14	6.38	7.69			
10/19/2016	7.02	5.46	7.03	7.08					
10/20/2016					6.52	7.43			
12/6/2016	7.09	5.38	7.08	7					
12/8/2016					6.5	7.56			
1/24/2017	7.2	5.37	7.39	6.16	6.59	7.52			
3/21/2017	7.01	4.9	6.83	6.07	6.55	7.4			
5/22/2017	7.11	5.2	7.02						
5/23/2017				6.28	6.5	7.53			
10/3/2017	7.21	5.3	7.47	6.45	6.63	7.51			
4/2/2018	7.1	5.4		6.23					
4/3/2018			7.38		6.59	7.53			
6/4/2018	7.06	5.27	7.38	6.82					
6/5/2018					6.44	7.37			
10/1/2018	7.09	5.31	7.13	5.73					
10/2/2018					6.35	7.36			
3/11/2019				6.27					
3/12/2019	7.03	5.42	7.29		6.42	7.5			
3/14/2019									6.68
3/15/2019							6.81	5.95	
4/1/2019			7.16						
4/2/2019	6.86	5.41		6.66	6.38	7.46			
4/4/2019							6.7		
4/5/2019								5.96	6.66
9/23/2019	7.02	5.33	7.3						
9/24/2019				6.16	6.4	7.41			
9/25/2019							6.54		
9/26/2019									6.64
9/27/2019								5.81	
3/2/2020	7.1	5.43	7.12	5.63	6.8	7.67		5.97	7.05
3/3/2020							6.72		
3/25/2020	6.95	5.36	7.4			7.39			
3/26/2020				5.77	6.38				
3/27/2020								5.71	
4/1/2020							6.9		6.8

Time Series

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
4/1/2020	4.35

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	0.105 (J)	0.0303 (J)	0.0513 (J)	0.036 (J)	0.08 (J)				
5/20/2016						0.065 (J)			
7/11/2016	0.16 (J)	0.05 (J)		0.09 (J)	0.09 (J)	0.13 (J)			
7/12/2016			0.12 (J)						
8/30/2016	0.09 (J)	0.06 (J)	0.09 (J)	0.06 (J)	0.08 (J)	0.07 (J)			
10/19/2016	0.1 (J)	0.04 (J)	0.1 (J)	0.07 (J)					
10/20/2016					0.1 (J)	0.06 (J)			
12/6/2016	0.11 (J)	0.36	0.21 (J)	0.07 (J)					
12/8/2016					0.08 (J)	0.06 (J)			
1/24/2017	0.09 (J)	<0.1	0.06 (J)	<0.1	0.09 (J)	0.02 (J)			
3/21/2017	0.13 (J)	<0.1	0.005 (J)	<0.1	0.04 (J)	0.08 (J)			
5/22/2017	0.12 (J)	<0.1	0.05 (J)						
5/23/2017				0.01 (J)	0.04 (J)	0.006 (J)			
10/3/2017	0.13 (J)	<0.1	0.13 (J)	<0.1	0.06 (J)	<0.1			
4/2/2018	<0.1	<0.1		<0.1					
4/3/2018			<0.1		<0.1	<0.1			
6/4/2018	0.074 (J)	<0.1	<0.1	0.097 (J)					
6/5/2018					0.083 (J)	0.055 (J)			
10/1/2018	<0.1	<0.1	<0.1	<0.1					
10/2/2018					<0.1	0.076 (J)			
3/11/2019				0.035 (J)					
3/12/2019	0.29 (J)	0.038 (J)	0.072 (J)		0.079 (J)	0.061 (J)			
3/14/2019									<0.1
3/15/2019							<0.1	<0.1	
4/1/2019			0.029 (J)						
4/2/2019	0.1 (J)	0.071 (J)		<0.1	0.12 (J)	<0.1			
4/4/2019							0.1 (J)		
4/5/2019								0.13 (J)	0.14 (J)
9/23/2019	0.078 (J)	<0.1	<0.1						
9/24/2019				<0.1	0.058 (J)	<0.1			
9/25/2019							<0.1		
9/26/2019									0.16 (J)
9/27/2019								0.28 (J)	
3/2/2020	0.076 (J)	<0.1	<0.1	<0.1	0.053 (J)	<0.1		<0.1	<0.1
3/3/2020							<0.1		
3/25/2020	0.098 (J)	<0.1	<0.1			<0.1			
3/26/2020				<0.1	0.066 (J)				
3/27/2020								<0.1	
4/1/2020							<0.1		<0.1
6/17/2020							<0.1		

Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	0.18 (J)
4/1/2020	0.15 (J)
6/17/2020	0.25

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.005	<0.005	<0.005	<0.005	<0.005				
5/20/2016						<0.005			
7/11/2016	<0.005	<0.005		<0.005	<0.005	<0.005			
7/12/2016			0.0001 (J)						
8/30/2016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
10/19/2016	<0.005	<0.005	<0.005	<0.005					
10/20/2016					0.0002 (J)	<0.005			
12/6/2016	<0.005	<0.005	<0.005	0.0002 (J)					
12/8/2016					<0.005	<0.005			
1/24/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
3/21/2017	<0.005	6E-05 (J)	0.0001 (J)	<0.005	<0.005	<0.005			
5/22/2017	<0.005	9E-05 (J)	<0.005						
5/23/2017				<0.005	9E-05 (J)	0.0003 (J)			
4/2/2018	<0.005	<0.005		<0.005					
4/3/2018			<0.005		<0.005	<0.005			
3/11/2019				<0.005					
3/12/2019	<0.005	<0.005	<0.005		<0.005	<0.005			
3/14/2019									<0.005
3/15/2019							<0.005	<0.005	
4/1/2019			<0.005						
4/2/2019	<0.005	<0.005		<0.005	<0.005	<0.005			
4/4/2019							<0.005		
4/5/2019								<0.005	<0.005
9/23/2019	7.8E-05 (J)	9.2E-05 (J)	<0.005						
9/24/2019				<0.005	<0.005	7.1E-05 (J)			
9/25/2019							<0.005		
9/26/2019									<0.005
9/27/2019								0.0001 (J)	
3/2/2020	4.8E-05 (J)	9.5E-05 (J)	<0.005	0.00026 (J)	<0.005	<0.005		9.4E-05 (J)	5.1E-05 (J)
3/3/2020							4.7E-05 (J)		
3/25/2020	<0.005	0.00011 (J)	<0.005			<0.005			
3/26/2020				5.9E-05 (J)	<0.005				
3/27/2020								<0.005	
4/1/2020							4.8E-05 (J)		<0.005
6/17/2020							<0.005		

Time Series

Constituent: Lead (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0017 (J)
6/17/2020	0.0017 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.03	<0.03	<0.03	<0.03	<0.03				
5/20/2016						<0.03			
7/11/2016	<0.03	0.0014 (J)		0.0015 (J)	0.0034 (J)	0.01 (J)			
7/12/2016			0.0024 (J)						
8/30/2016	<0.03	<0.03	0.0025 (J)	0.0027 (J)	0.003 (J)	0.0095 (J)			
10/19/2016	<0.03	<0.03	0.003 (J)	0.0042 (J)					
10/20/2016					0.0031 (J)	0.0105 (J)			
12/6/2016	<0.03	<0.03	0.0033 (J)	0.0046 (J)					
12/8/2016					0.0027 (J)	0.01 (J)			
1/24/2017	<0.03	<0.03	0.003 (J)	<0.03	0.0028 (J)	0.0108 (J)			
3/21/2017	<0.03	0.0012 (J)	0.0034 (J)	<0.03	0.0037 (J)	0.0115 (J)			
5/22/2017	<0.03	<0.03	0.003 (J)						
5/23/2017				<0.03	0.0033 (J)	0.011 (J)			
4/2/2018	<0.03	0.0015 (J)		<0.03					
4/3/2018			0.003 (J)		0.0033 (J)	0.012 (J)			
6/4/2018	0.001 (J)	0.0016 (J)	0.0027 (J)	0.00097 (J)					
6/5/2018					0.0034 (J)	0.011 (J)			
10/1/2018	0.00099 (J)	0.0013 (J)	0.0032 (J)	<0.03					
10/2/2018					0.0035 (J)	0.01 (J)			
3/11/2019				<0.03					
3/12/2019	0.001 (J)	0.0018 (J)	0.0032 (J)		0.0032 (J)	0.011 (J)			
3/14/2019									0.0028 (J)
3/15/2019							0.025 (J)	0.002 (J)	
4/1/2019			0.0032 (J)						
4/2/2019	0.001 (J)	0.0018 (J)		0.00098 (J)	0.0028 (J)	0.0095 (J)			
4/4/2019							0.019 (J)		
4/5/2019								0.0013 (J)	0.0021 (J)
9/23/2019	0.0011 (J)	0.0016 (J)	0.0029 (J)						
9/24/2019				<0.03	0.0035 (J)	0.011 (J)			
9/25/2019							0.024 (J)		
9/26/2019									0.0023 (J)
9/27/2019								0.0013 (J)	
3/2/2020	0.0012 (J)	0.0017 (J)	0.0037 (J)	0.0012 (J)	0.0036 (J)	0.012		0.0015 (J)	0.0025 (J)
3/3/2020							0.026 (J)		
3/25/2020	0.00083 (J)	0.0017 (J)	0.0035 (J)			0.011 (J)			
3/26/2020				0.00095 (J)	0.0029 (J)				
3/27/2020								0.0013 (J)	
4/1/2020							0.026 (J)		0.0024 (J)
6/17/2020							0.023 (J)		

Time Series

Constituent: Lithium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.0011 (J)
6/17/2020	0.00097 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
5/20/2016						<0.0005			
7/11/2016	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			
7/12/2016			<0.0005						
8/30/2016	4E-05 (J)	4E-05 (J)	<0.0005	5E-05 (J)	<0.0005	4.4E-05 (J)			
10/19/2016	<0.0005	<0.0005	<0.0005	<0.0005					
10/20/2016					<0.0005	<0.0005			
12/6/2016	<0.0005	<0.0005	<0.0005	5E-05 (J)					
12/8/2016					<0.0005	<0.0005			
1/24/2017	<0.0005	<0.0005	<0.0005	0.0001 (J)	<0.0005	<0.0005			
3/21/2017	<0.0005	<0.0005	<0.0005	0.00016 (J)	<0.0005	<0.0005			
5/22/2017	<0.0005	<0.0005	<0.0005						
5/23/2017				5E-05 (J)	<0.0005	<0.0005			
4/2/2018	<0.0005	<0.0005		<0.0005					
4/3/2018			<0.0005		<0.0005	<0.0005			
3/11/2019				<0.0005					
3/12/2019	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005			
3/14/2019									<0.0005
3/15/2019							<0.0005	<0.0005	
3/2/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
3/3/2020							<0.0005		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
7/11/2016	<0.01	<0.01		<0.01	<0.01	0.0008 (J)			
7/12/2016			<0.01						
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	0.0002 (J)			
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01			
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019									<0.01
3/15/2019							0.045	<0.01	
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019							0.033		
4/5/2019								0.00013 (J)	0.0014 (J)
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01			
9/25/2019							0.038		
9/26/2019									0.0025 (J)
9/27/2019								<0.01	
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	0.003 (J)
3/3/2020							0.025		
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01				
3/27/2020								<0.01	
4/1/2020							0.024		0.0032 (J)
6/17/2020							0.019		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	<0.01
6/17/2020	<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.01	<0.01	<0.01	<0.01	<0.01				
5/20/2016						<0.01			
7/11/2016	<0.01	<0.01		<0.01	<0.01	<0.01			
7/12/2016			<0.01						
8/30/2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
10/19/2016	<0.01	<0.01	<0.01	<0.01					
10/20/2016					<0.01	<0.01			
12/6/2016	<0.01	<0.01	<0.01	<0.01					
12/8/2016					<0.01	<0.01			
1/24/2017	<0.01	<0.01	<0.01	<0.01	0.0011 (J)	<0.01			
3/21/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
5/22/2017	<0.01	<0.01	<0.01						
5/23/2017				<0.01	<0.01	<0.01			
4/2/2018	<0.01	<0.01		<0.01					
4/3/2018			<0.01		<0.01	<0.01			
6/4/2018	<0.01	<0.01	<0.01	<0.01					
6/5/2018					<0.01	<0.01			
10/1/2018	<0.01	<0.01	<0.01	<0.01					
10/2/2018					<0.01	<0.01			
3/11/2019				<0.01					
3/12/2019	<0.01	<0.01	<0.01		<0.01	<0.01			
3/14/2019									<0.01
3/15/2019							<0.01	<0.01	
4/1/2019			<0.01						
4/2/2019	<0.01	<0.01		<0.01	<0.01	<0.01			
4/4/2019							<0.01		
4/5/2019								<0.01	<0.01
9/23/2019	<0.01	<0.01	<0.01						
9/24/2019				<0.01	<0.01	<0.01			
9/25/2019							<0.01		
9/26/2019									<0.01
9/27/2019								<0.01	
3/2/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01
3/3/2020							<0.01		
3/25/2020	<0.01	<0.01	<0.01			<0.01			
3/26/2020				<0.01	<0.01				
3/27/2020								<0.01	
4/1/2020							<0.01		<0.01
6/17/2020							<0.01		

Time Series

Constituent: Selenium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
4/1/2020	0.011
6/17/2020	0.014

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	66.9	48.6	42.3	1.22	25				
5/20/2016						34.4			
7/11/2016	41	45		3.7	27	34			
7/12/2016			44						
8/30/2016	36	42	40	6.8	23	36			
10/19/2016	46	44	43	11					
10/20/2016					19	36			
12/6/2016	59	44	43	13					
12/8/2016					20	36			
1/24/2017	46	46	48	5.7	20	37			
3/21/2017	63	46	45	1.7	23	37			
5/22/2017	77	48	46						
5/23/2017				1.5	21	38			
10/3/2017	42	47	48	1.3	21	38			
6/4/2018	71.8	47.8	46.6	4.9					
6/5/2018					22.9	38			
10/1/2018	49.1	48.1	48.6	0.59 (J)					
10/2/2018					20.3	38.5			
4/1/2019			50.4						
4/2/2019	84.3	48.7		4.9	23.8	35.5			
4/4/2019							915		
4/5/2019								392	585
9/23/2019	70.2	47.2	43.9						
9/24/2019				<1	20.7	35.4			
9/25/2019							767		
9/26/2019									556
9/27/2019								520	
3/25/2020	85.9	46.3	50.5			35.1			
3/26/2020				<1	21.6				
3/27/2020								419	
4/1/2020							889		478
6/17/2020							901		

Time Series

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	1250
4/1/2020	1210
6/17/2020	1210

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	<0.001	<0.001	<0.001	<0.001	<0.001				
5/20/2016						<0.001			
7/11/2016	<0.001	<0.001		<0.001	<0.001	<0.001			
7/12/2016			<0.001						
8/30/2016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
10/19/2016	<0.001	<0.001	<0.001	<0.001					
10/20/2016					<0.001	<0.001			
12/6/2016	<0.001	<0.001	<0.001	<0.001					
12/8/2016					<0.001	<0.001			
1/24/2017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
3/21/2017	<0.001	3E-05 (J)	<0.001	<0.001	<0.001	<0.001			
5/22/2017	<0.001	<0.001	<0.001						
5/23/2017				<0.001	<0.001	<0.001			
4/2/2018	<0.001	<0.001		<0.001					
4/3/2018			<0.001		<0.001	<0.001			
6/4/2018	<0.001	<0.001	<0.001	<0.001					
6/5/2018					<0.001	<0.001			
10/1/2018	<0.001	<0.001	<0.001	<0.001					
10/2/2018					<0.001	<0.001			
3/11/2019				<0.001					
3/12/2019	<0.001	<0.001	<0.001		<0.001	<0.001			
3/14/2019									<0.001
3/15/2019							<0.001	<0.001	
4/1/2019			<0.001						
4/2/2019	<0.001	<0.001		<0.001	<0.001	<0.001			
4/4/2019							<0.001		
4/5/2019								<0.001	<0.001
9/23/2019	<0.001	<0.001	<0.001						
9/24/2019				<0.001	<0.001	<0.001			
9/25/2019							<0.001		
9/26/2019									<0.001
9/27/2019								<0.001	
3/2/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
3/3/2020							<0.001		
3/25/2020	<0.001	<0.001	<0.001			5.7E-05 (J)			
3/26/2020				<0.001	<0.001				
3/27/2020								<0.001	
4/1/2020							<0.001		<0.001
6/17/2020							<0.001		

Time Series

Constituent: Thallium (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

4/1/2020	0.00029 (J)
6/17/2020	0.00028 (J)

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-2 (bg)	HGWA-3 (bg)	HGWA-4 (bg)	HGWA-5 (bg)	HGWA-6 (bg)	MW-21D	MW-22	MW-23D
5/19/2016	421	143	267	165	168				
5/20/2016						223			
7/11/2016	363	125		266	158	225			
7/12/2016			249						
8/30/2016	330	168	254	292	141	232			
10/19/2016	380	176	357	338					
10/20/2016					99	225			
12/6/2016	377	145	285	356					
12/8/2016					116	235			
1/24/2017	342	129	300	131	156	272			
3/21/2017	340	103	288	132	144	222			
5/22/2017	338	92	263						
5/23/2017				183	134	231			
10/3/2017	343	127	300	161	147	243			
6/4/2018	415	140	266	240					
6/5/2018					152	235			
10/1/2018	354	135	291	106					
10/2/2018					146	228			
4/1/2019			284						
4/2/2019	452	133		230	144	238			
4/4/2019							1800		
4/5/2019								890	1400
9/23/2019	442	129	268						
9/24/2019				131	133	222			
9/25/2019							1970		
9/26/2019									1400
9/27/2019								1110	
3/25/2020	496	138	284			240			
3/26/2020				69	104				
3/27/2020								1100	
4/1/2020							1940		1530
6/17/2020							2100		

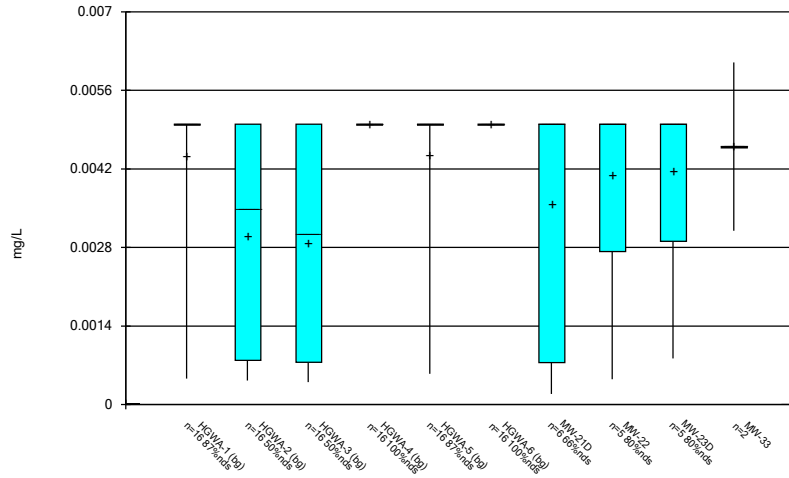
Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 9:16 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

	MW-33
1/22/2020	2310
4/1/2020	2590
6/17/2020	2540

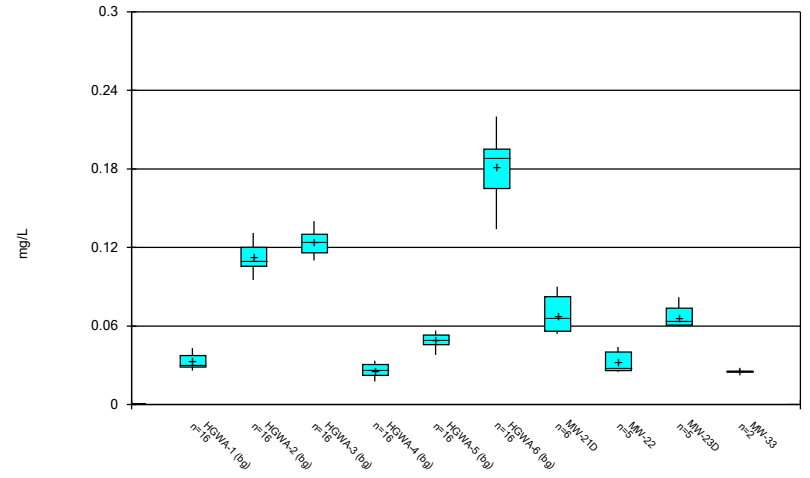
FIGURE B.

Box & Whiskers Plot



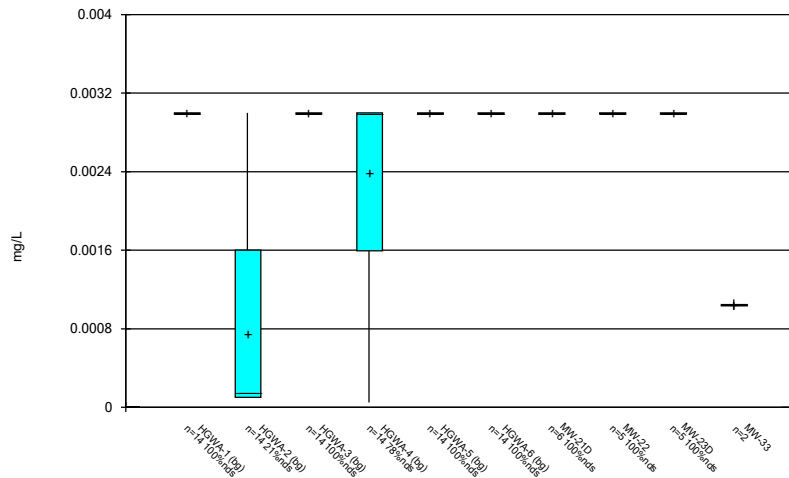
Constituent: Arsenic Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



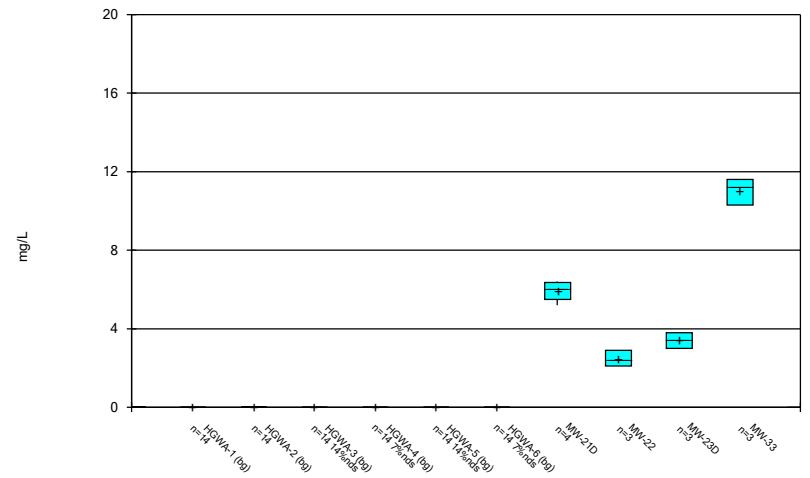
Constituent: Barium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



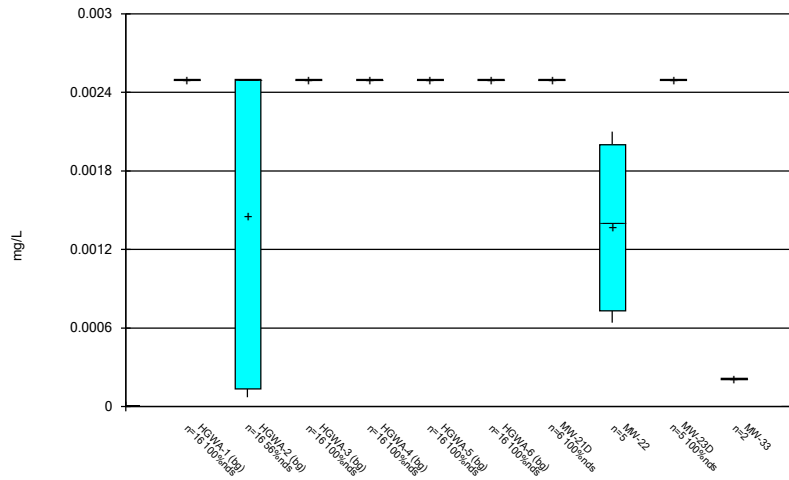
Constituent: Beryllium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



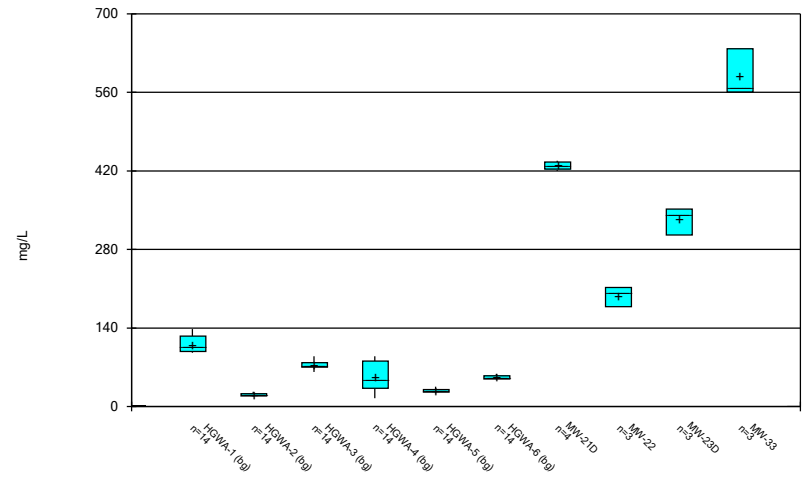
Constituent: Boron Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



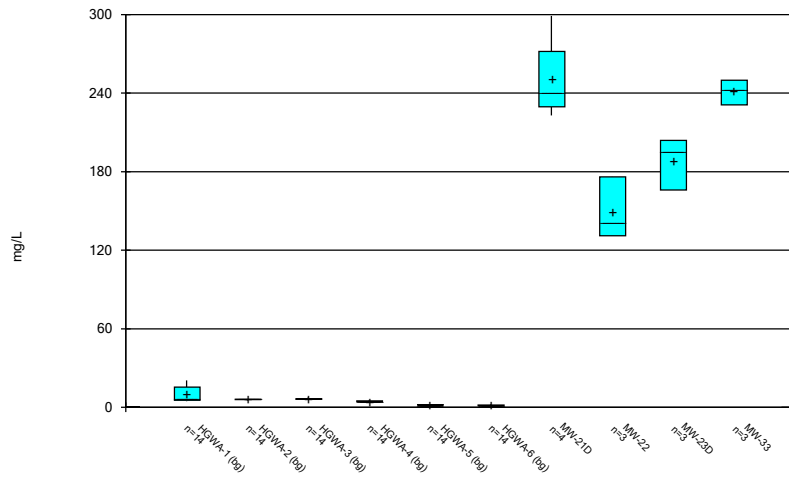
Constituent: Cadmium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



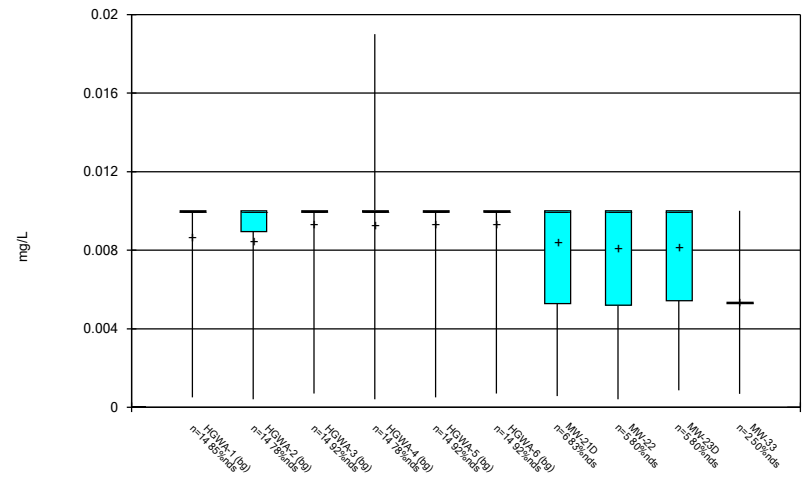
Constituent: Calcium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



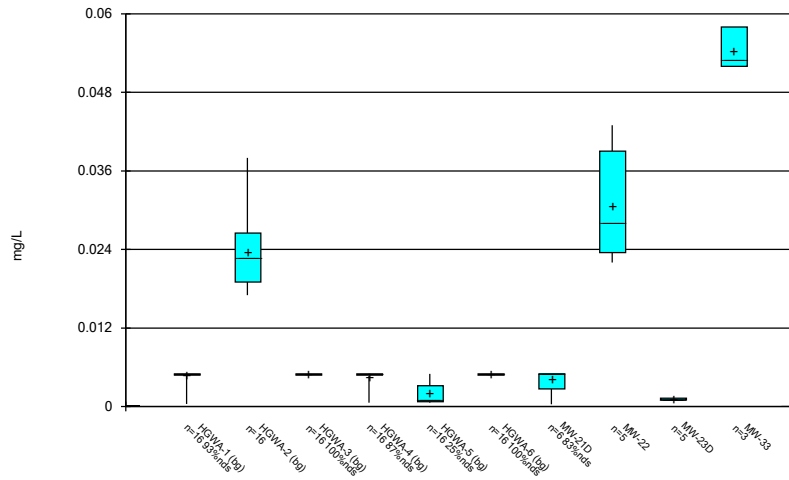
Constituent: Chloride Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



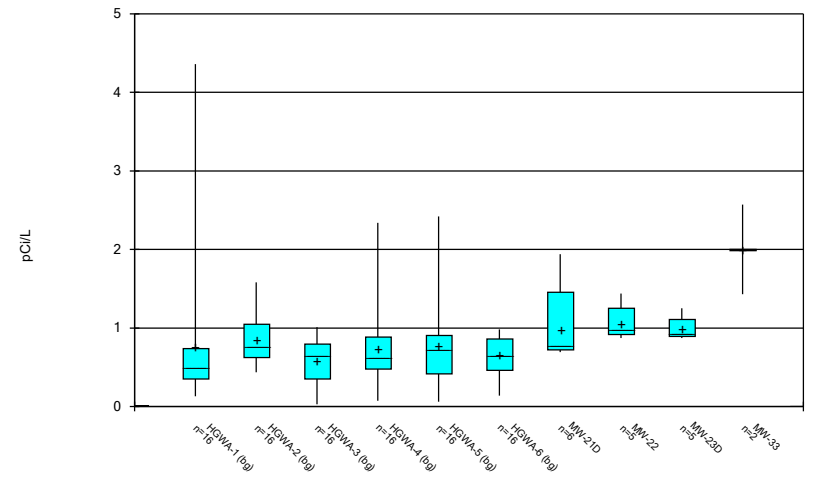
Constituent: Chromium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



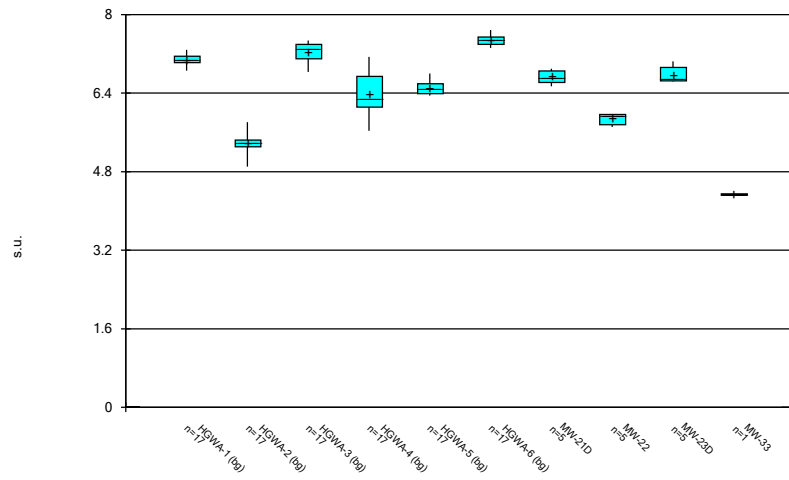
Constituent: Cobalt Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



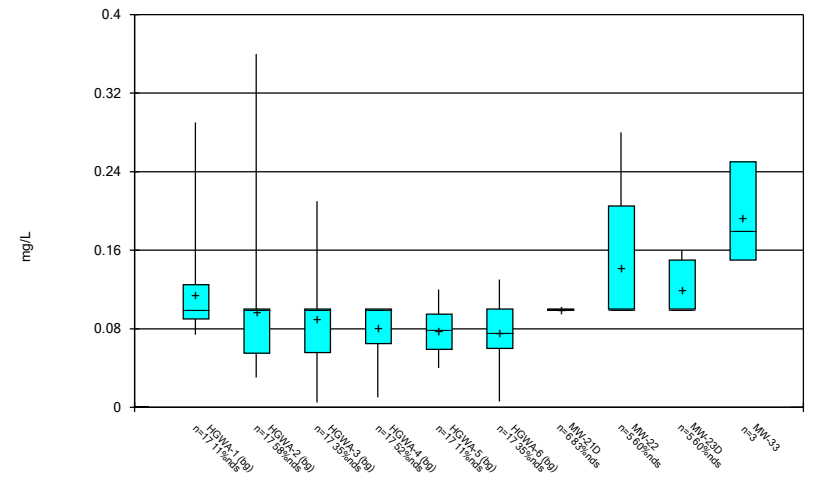
Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wel
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



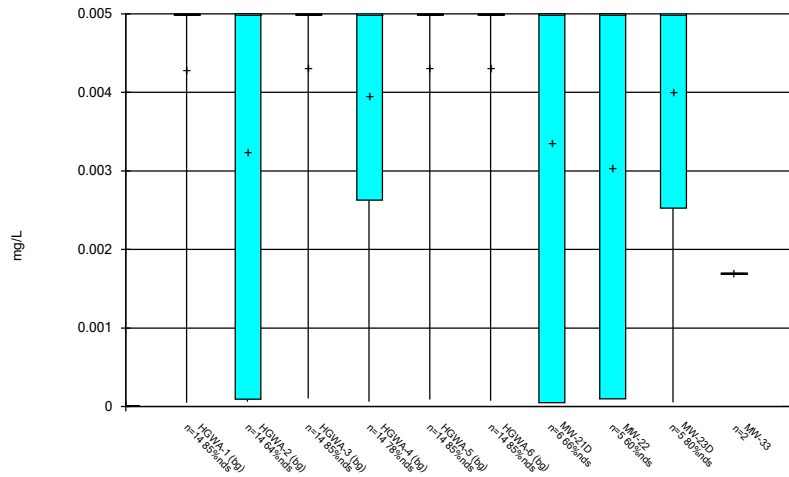
Constituent: Field pH Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



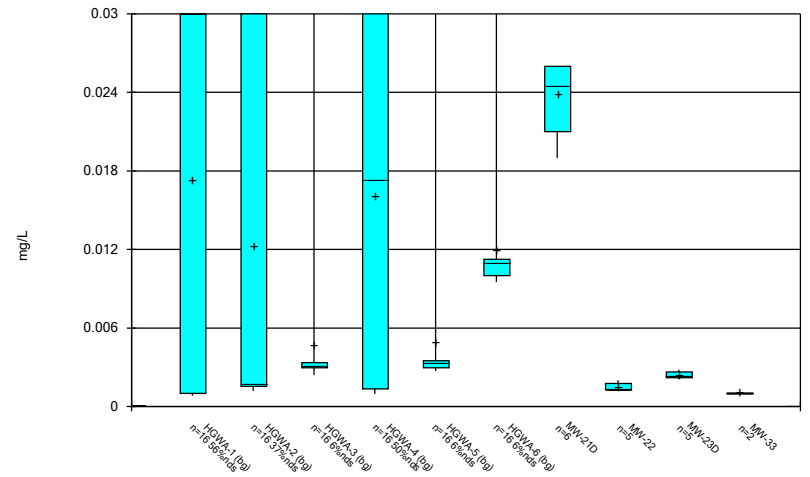
Constituent: Fluoride Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



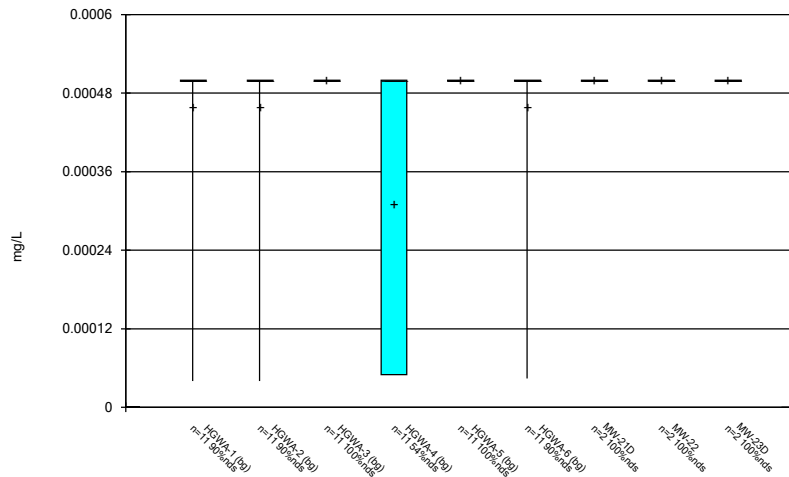
Constituent: Lead Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



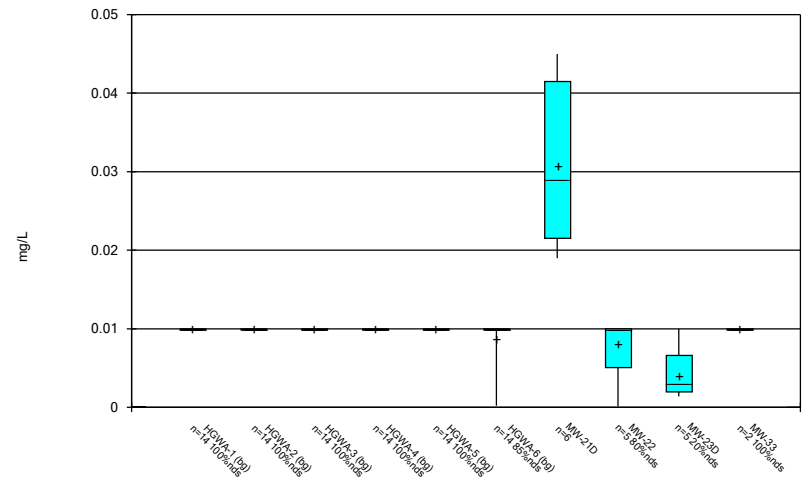
Constituent: Lithium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



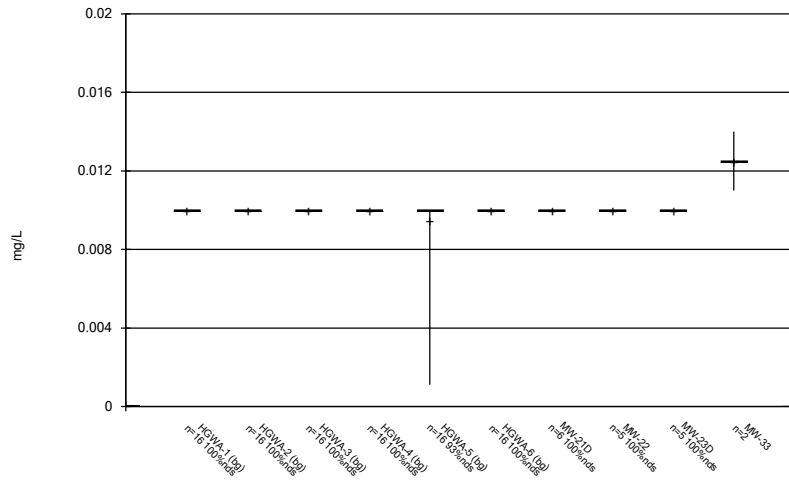
Constituent: Mercury Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



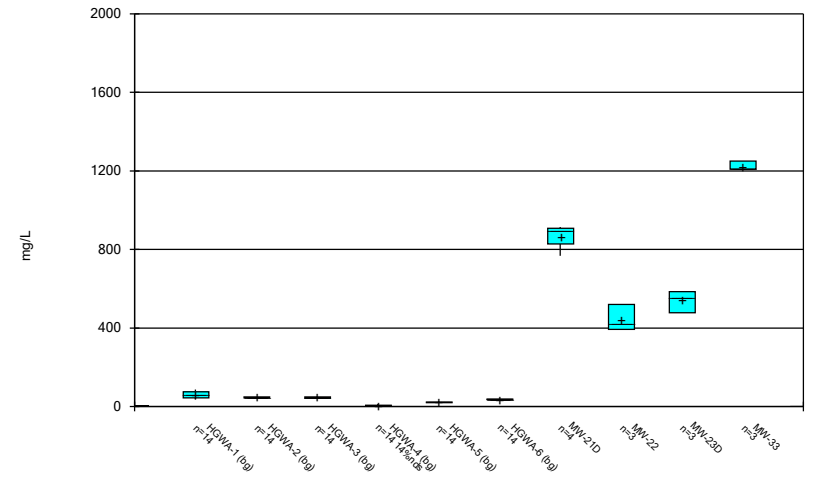
Constituent: Molybdenum Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



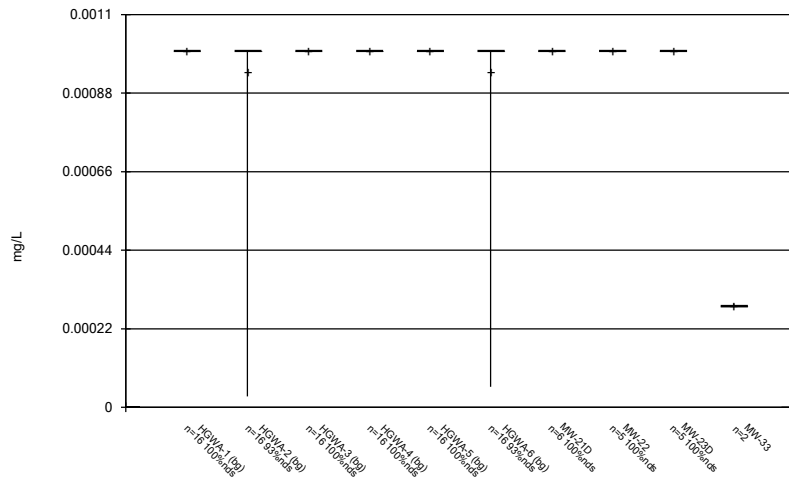
Constituent: Selenium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



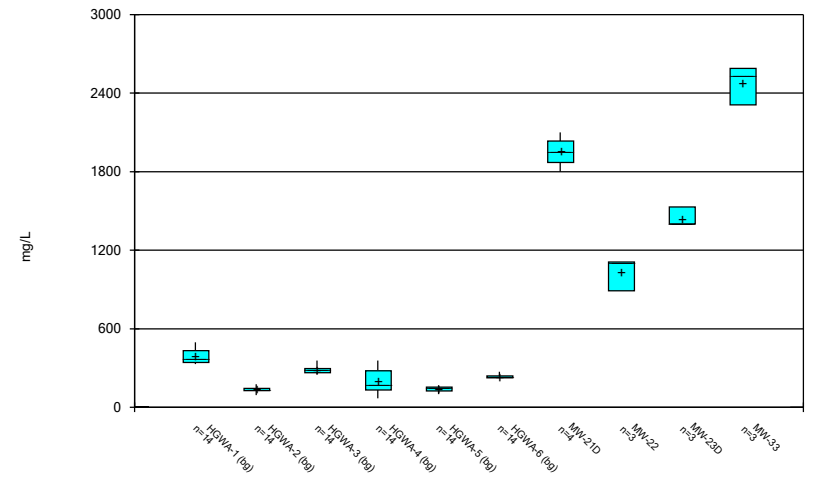
Constituent: Sulfate Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Thallium Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:02 AM View: Descriptive - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE C.

Interwell Prediction Limit Summary (New Wells) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:12 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-21D	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-22	0.04409	n/a	3/27/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-23D	0.04409	n/a	4/1/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-33	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-21D	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-22	128.9	n/a	3/27/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-23D	128.9	n/a	4/1/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-33	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	MW-21D	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-22	20.4	n/a	3/27/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-23D	20.4	n/a	4/1/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-33	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-33	7.69	4.9	4/1/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21D	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-22	85.9	n/a	3/27/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-23D	85.9	n/a	4/1/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-33	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-21D	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-22	425	n/a	3/27/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-23D	425	n/a	4/1/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-33	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

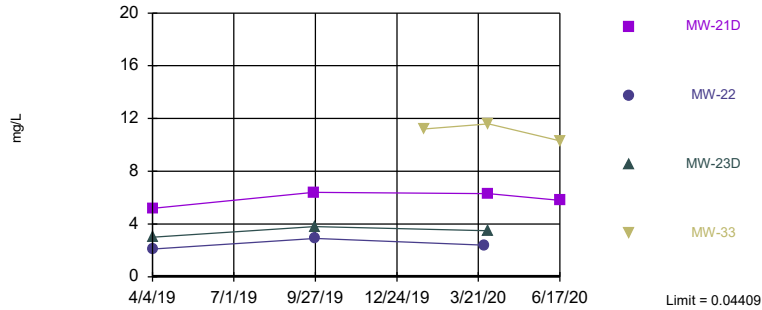
Interwell Prediction Limit Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:12 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-21D	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-22	0.04409	n/a	3/27/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-23D	0.04409	n/a	4/1/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Boron (mg/L)	MW-33	0.04409	n/a	6/17/2020	Yes	84	-4.169	0.5776	7.143	None	ln(x)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-21D	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-22	128.9	n/a	3/27/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-23D	128.9	n/a	4/1/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Calcium (mg/L)	MW-33	128.9	n/a	6/17/2020	Yes	84	3.704	0.743	0	None	x^(1/3)	0.001504	Param Inter 1 of 2
Chloride (mg/L)	MW-21D	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-22	20.4	n/a	3/27/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-23D	20.4	n/a	4/1/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-33	20.4	n/a	6/17/2020	Yes	84	n/a	n/a	0	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-21D	7.69	4.9	4/1/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-22	7.69	4.9	3/27/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-23D	7.69	4.9	4/1/2020	No	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Field pH (s.u.)	MW-33	7.69	4.9	4/1/2020	Yes	102	n/a	n/a	0	n/a	n/a	0.0003751	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-21D	0.36	n/a	6/17/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-22	0.36	n/a	3/27/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-23D	0.36	n/a	4/1/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-33	0.36	n/a	6/17/2020	No	102	n/a	n/a	34.31	n/a	n/a	0.0001875	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21D	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-22	85.9	n/a	3/27/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-23D	85.9	n/a	4/1/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-33	85.9	n/a	6/17/2020	Yes	84	n/a	n/a	2.381	n/a	n/a	0.0002746	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-21D	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-22	425	n/a	3/27/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-23D	425	n/a	4/1/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-33	425	n/a	6/17/2020	Yes	84	14.8	3.207	0	None	sqrt(x)	0.001504	Param Inter 1 of 2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
Interwell Parametric

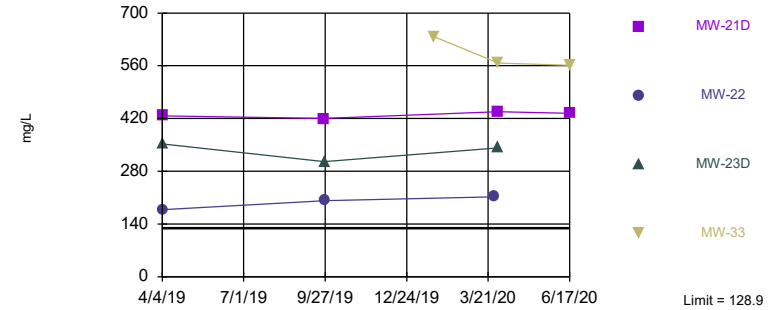


Background Data Summary (based on natural log transformation): Mean=-4.169, Std. Dev.=0.5776, n=84, 7.143% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.974, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 4 points to limit. Assumes 1 future value.

Constituent: Boron Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
Interwell Parametric

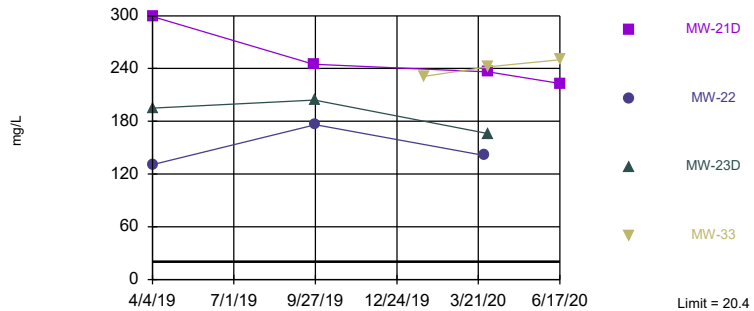


Background Data Summary (based on cube root transformation): Mean=3.704, Std. Dev.=0.743, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9612, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 4 points to limit. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
Interwell Non-parametric

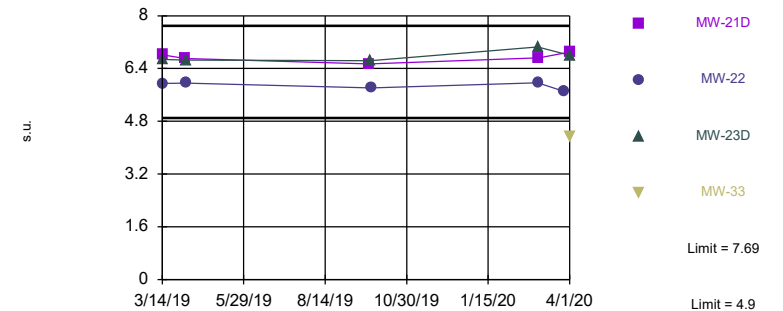


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limits: MW-33

Prediction Limit
Interwell Non-parametric

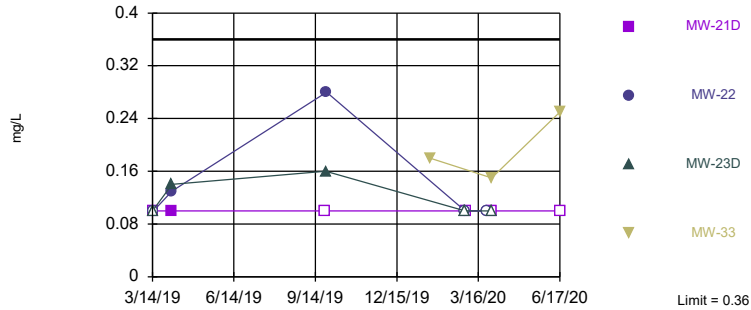


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 102 background values. Annual per-constituent alpha = 0.003748. Individual comparison alpha = 0.0003751 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Field pH Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Within Limit

Prediction Limit
 Interwell Non-parametric

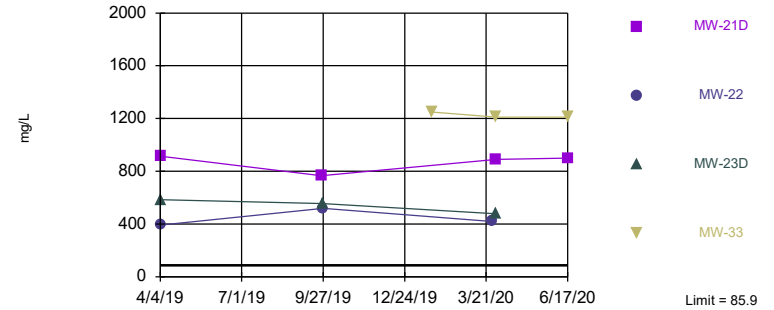


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 102 background values. 34.31% NDs. Annual per-constituent alpha = 0.001874. Individual comparison alpha = 0.0001875 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Fluoride Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
 Interwell Non-parametric

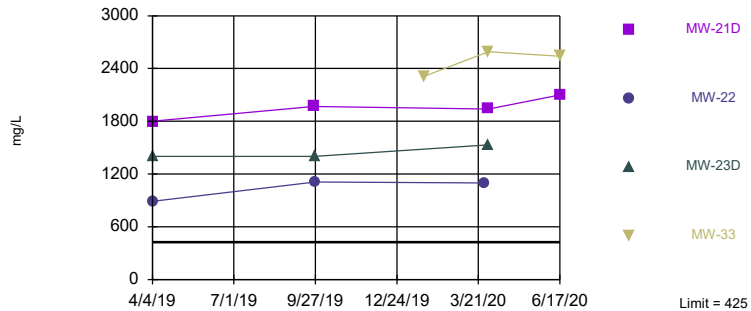


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. 2.381% NDs. Annual per-constituent alpha = 0.002742. Individual comparison alpha = 0.0002746 (1 of 2). Comparing 4 points to limit. Assumes 1 future value.

Constituent: Sulfate Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Exceeds Limit: MW-21D, MW-22, MW-23D, MW-33

Prediction Limit
 Interwell Parametric



Background Data Summary (based on square root transformation): Mean=14.8, Std. Dev.=3.207, n=84. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9706, critical = 0.96. Kappa = 1.814 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 4 points to limit. Assumes 1 future value.

Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:10 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	0.0214 (J)	<0.04	<0.04	0.0321 (J)	<0.04				
5/20/2016						0.0363 (J)			
7/11/2016	0.0142 (J)		0.0052 (J)	0.0337 (J)	0.0175 (J)	0.0179 (J)			
7/12/2016		0.0074 (J)							
8/30/2016	0.0074 (J)	<0.04	0.0068 (J)	0.0173 (J)	0.0072 (J)	0.014 (J)			
10/19/2016	0.0224 (J)	0.0085 (J)		0.0341 (J)	0.018 (J)				
10/20/2016			0.0135 (J)			0.0197 (J)			
12/6/2016	0.0211 (J)	0.0085 (J)		0.0326 (J)	0.0158 (J)				
12/8/2016			0.0083 (J)			0.0159 (J)			
1/24/2017	0.0165 (J)	0.01 (J)	0.0072 (J)	0.0365 (J)	0.0145 (J)	<0.04			
3/21/2017	0.0187 (J)	0.0079 (J)	<0.04	0.0349 (J)	0.0101 (J)	0.0166 (J)			
5/22/2017	0.0782	0.0131 (J)		0.0475					
5/23/2017			0.0095 (J)		0.0159 (J)	0.0167 (J)			
10/3/2017	0.0198 (J)	0.0097 (J)	0.0071 (J)	0.0386 (J)	0.0162 (J)	0.017 (J)			
6/4/2018	0.02 (J)	0.017 (J)		0.036 (J)	0.014 (J)				
6/5/2018			0.0066 (J)			0.016 (J)			
10/1/2018	0.013 (J)	0.0061 (J)		0.035 (J)	0.0093 (J)				
10/2/2018			0.0081 (J)			0.014 (J)			
4/1/2019		0.0066 (J)							
4/2/2019	0.016 (J)		0.0052 (J)	0.034 (J)	0.01 (J)	0.013 (J)			
4/4/2019							5.2		
4/5/2019								3	2.1
9/23/2019	0.021 (J)	0.0081 (J)		0.04 (J)					
9/24/2019			0.0088 (J)		0.013 (J)	0.016 (J)			
9/25/2019							6.4		
9/26/2019								3.8	
9/27/2019									2.9
1/22/2020									
3/25/2020	0.025 (J)	0.0096 (J)		0.039 (J)		0.021 (J)			
3/26/2020			0.0072 (J)		0.012 (J)				
3/27/2020									2.4
4/1/2020							6.3	3.5	
6/17/2020							5.8		

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	11.2
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	11.6
6/17/2020	10.3

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	138	76.2	35.5	22.9	48.4				
5/20/2016						56.1			
7/11/2016	97.2		35.4	22.3	73	49.3			
7/12/2016		61.5							
8/30/2016	97.5	65.1	28	26.4	85.7	53.9			
10/19/2016	99.2	73.2		21.7	89.7				
10/20/2016			26.7			50.7			
12/6/2016	105	74.9		18.2	80				
12/8/2016			23.5			49.2			
1/24/2017	95.7	69.6	24.5	18.5	30.8	48.3			
3/21/2017	106	75.7	30.8	18.6	34	51.3			
5/22/2017	107	71.5		17.8					
5/23/2017			24.2		43	49.1			
10/3/2017	102	76.3	29	20.2	46.9	55.1			
6/4/2018	124	73.4		19.1	81.9				
6/5/2018			27.8			54.5			
10/1/2018	108	80.9		20.5 (J)	22 (J)				
10/2/2018			28.9			54.7			
4/1/2019		80.5							
4/2/2019	132		26.3	22.5 (J)	76	49.7			
4/4/2019							427		
4/5/2019								352	178
9/23/2019	118	71		19.5					
9/24/2019			29.3		36.6	52.5			
9/25/2019							420		
9/26/2019								306	
9/27/2019									202
1/22/2020									
3/25/2020	127	89.8		23		58.1			
3/26/2020			27.8		14.9				
3/27/2020									212
4/1/2020							438	342	
6/17/2020							434		

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016
5/20/2016
7/11/2016
7/12/2016
8/30/2016
10/19/2016
10/20/2016
12/6/2016
12/8/2016
1/24/2017
3/21/2017
5/22/2017
5/23/2017
10/3/2017
6/4/2018
6/5/2018
10/1/2018
10/2/2018
4/1/2019
4/2/2019
4/4/2019
4/5/2019
9/23/2019
9/24/2019
9/25/2019
9/26/2019
9/27/2019
1/22/2020
3/25/2020
3/26/2020
3/27/2020
4/1/2020
6/17/2020

638

567

561

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	9.94	5.93	1.57	6.14	4.56				
5/20/2016						1.35			
7/11/2016	6.3		2	5.9	5	1.7			
7/12/2016		6.2							
8/30/2016	6	6.4	2	6.2	4.9	1.6			
10/19/2016	5.8	6.5		6.1	4.6				
10/20/2016			2.2			1.6			
12/6/2016	5.4	7.2		6	4.5				
12/8/2016			2			1.6			
1/24/2017	5.2	6.4	1.6	6.1	4.7	1.9			
3/21/2017	4.6	7.5	2	5.9	4.3	1.3			
5/22/2017	4.6	6.5		5.9					
5/23/2017			1.7		4.5	1.2			
10/3/2017	5.6	6.5	1.7	6.3	4.8	2.1			
6/4/2018	13.1	6.3		6.1	4.5				
6/5/2018			1.6			1.2			
10/1/2018	6.6	6.4		6.4	3.8				
10/2/2018			2.4			1.7			
4/1/2019		6.5							
4/2/2019	20.3		1.7	5.8	4.4	1.6			
4/4/2019							299		
4/5/2019								195	131
9/23/2019	17.7	5.9		5.1					
9/24/2019			1.7		3.6	1.3			
9/25/2019							245		
9/26/2019								204	
9/27/2019									176
1/22/2020									
3/25/2020	20.4	6.1		5.2		1.2			
3/26/2020			1.4		3.4				
3/27/2020									141
4/1/2020							236	166	
6/17/2020							223		

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	231
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	242
6/17/2020	250

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-23D	MW-21D	MW-22
5/19/2016	7.27	7.45	6.62	5.81	6.51				
5/20/2016						7.58			
7/11/2016	7.06		6.54	5.68	6.65	7.32			
7/12/2016		7.32							
8/30/2016	7.28	7.43	6.38	5.63	7.14	7.69			
10/19/2016	7.02	7.03		5.46	7.08				
10/20/2016			6.52			7.43			
12/6/2016	7.09	7.08		5.38	7				
12/8/2016			6.5			7.56			
1/24/2017	7.2	7.39	6.59	5.37	6.16	7.52			
3/21/2017	7.01	6.83	6.55	4.9	6.07	7.4			
5/22/2017	7.11	7.02		5.2					
5/23/2017			6.5		6.28	7.53			
10/3/2017	7.21	7.47	6.63	5.3	6.45	7.51			
4/2/2018	7.1			5.4	6.23				
4/3/2018		7.38	6.59			7.53			
6/4/2018	7.06	7.38		5.27	6.82				
6/5/2018			6.44			7.37			
10/1/2018	7.09	7.13		5.31	5.73				
10/2/2018			6.35			7.36			
3/11/2019					6.27				
3/12/2019	7.03	7.29	6.42	5.42		7.5			
3/14/2019							6.68		
3/15/2019								6.81	5.95
4/1/2019		7.16							
4/2/2019	6.86		6.38	5.41	6.66	7.46			
4/4/2019								6.7	
4/5/2019							6.66		5.96
9/23/2019	7.02	7.3		5.33					
9/24/2019			6.4		6.16	7.41			
9/25/2019								6.54	
9/26/2019							6.64		
9/27/2019									5.81
3/2/2020	7.1	7.12	6.8	5.43	5.63	7.67	7.05		5.97
3/3/2020								6.72	
3/25/2020	6.95	7.4		5.36		7.39			
3/26/2020			6.38		5.77				
3/27/2020									5.71
4/1/2020							6.8	6.9	

Prediction Limit

Constituent: Field pH (s.u.) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016
5/20/2016
7/11/2016
7/12/2016
8/30/2016
10/19/2016
10/20/2016
12/6/2016
12/8/2016
1/24/2017
3/21/2017
5/22/2017
5/23/2017
10/3/2017
4/2/2018
4/3/2018
6/4/2018
6/5/2018
10/1/2018
10/2/2018
3/11/2019
3/12/2019
3/14/2019
3/15/2019
4/1/2019
4/2/2019
4/4/2019
4/5/2019
9/23/2019
9/24/2019
9/25/2019
9/26/2019
9/27/2019
3/2/2020
3/3/2020
3/25/2020
3/26/2020
3/27/2020
4/1/2020

4.35

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
4/2/2018	
4/3/2018	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
3/11/2019	
3/12/2019	
3/14/2019	
3/15/2019	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	0.18 (J)
3/2/2020	
3/3/2020	
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	0.15 (J)
6/17/2020	0.25

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
 Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	66.9	42.3	25	48.6	1.22				
5/20/2016						34.4			
7/11/2016	41		27	45	3.7	34			
7/12/2016		44							
8/30/2016	36	40	23	42	6.8	36			
10/19/2016	46	43		44	11				
10/20/2016			19			36			
12/6/2016	59	43		44	13				
12/8/2016			20			36			
1/24/2017	46	48	20	46	5.7	37			
3/21/2017	63	45	23	46	1.7	37			
5/22/2017	77	46		48					
5/23/2017			21		1.5	38			
10/3/2017	42	48	21	47	1.3	38			
6/4/2018	71.8	46.6		47.8	4.9				
6/5/2018			22.9			38			
10/1/2018	49.1	48.6		48.1	0.59 (J)				
10/2/2018			20.3			38.5			
4/1/2019		50.4							
4/2/2019	84.3		23.8	48.7	4.9	35.5			
4/4/2019							915		
4/5/2019								585	392
9/23/2019	70.2	43.9		47.2					
9/24/2019			20.7		<1	35.4			
9/25/2019							767		
9/26/2019								556	
9/27/2019									520
1/22/2020									
3/25/2020	85.9	50.5		46.3		35.1			
3/26/2020			21.6		<1				
3/27/2020									419
4/1/2020							889	478	
6/17/2020							901		

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	1250
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	1210
6/17/2020	1210

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells

Plant Hammond Client: Southern Company Data: Hammond AP-2

	HGWA-1 (bg)	HGWA-3 (bg)	HGWA-5 (bg)	HGWA-2 (bg)	HGWA-4 (bg)	HGWA-6 (bg)	MW-21D	MW-23D	MW-22
5/19/2016	421	267	168	143	165				
5/20/2016						223			
7/11/2016	363		158	125	266	225			
7/12/2016		249							
8/30/2016	330	254	141	168	292	232			
10/19/2016	380	357		176	338				
10/20/2016			99			225			
12/6/2016	377	285		145	356				
12/8/2016			116			235			
1/24/2017	342	300	156	129	131	272			
3/21/2017	340	288	144	103	132	222			
5/22/2017	338	263		92					
5/23/2017			134		183	231			
10/3/2017	343	300	147	127	161	243			
6/4/2018	415	266		140	240				
6/5/2018			152			235			
10/1/2018	354	291		135	106				
10/2/2018			146			228			
4/1/2019		284							
4/2/2019	452		144	133	230	238			
4/4/2019							1800		
4/5/2019								1400	890
9/23/2019	442	268		129					
9/24/2019			133		131	222			
9/25/2019							1970		
9/26/2019								1400	
9/27/2019									1110
1/22/2020									
3/25/2020	496	284		138		240			
3/26/2020			104		69				
3/27/2020									1100
4/1/2020							1940	1530	
6/17/2020							2100		

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 8/11/2020 10:12 AM View: PL's - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

MW-33

5/19/2016	
5/20/2016	
7/11/2016	
7/12/2016	
8/30/2016	
10/19/2016	
10/20/2016	
12/6/2016	
12/8/2016	
1/24/2017	
3/21/2017	
5/22/2017	
5/23/2017	
10/3/2017	
6/4/2018	
6/5/2018	
10/1/2018	
10/2/2018	
4/1/2019	
4/2/2019	
4/4/2019	
4/5/2019	
9/23/2019	
9/24/2019	
9/25/2019	
9/26/2019	
9/27/2019	
1/22/2020	2310
3/25/2020	
3/26/2020	
3/27/2020	
4/1/2020	2590
6/17/2020	2540

FIGURE D.

Trend Test Summary (New Wells) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:15 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP

Trend Test Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:15 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	HGWA-1 (bg)	0.0007668	9	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-2 (bg)	0.001791	45	48	No	14	0	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-3 (bg)	-0.0007135	-19	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-4 (bg)	-0.001746	-37	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-5 (bg)	-0.0004406	-14	-48	No	14	14.29	n/a	n/a	0.01	NP
Boron (mg/L)	HGWA-6 (bg)	-0.001046	-21	-48	No	14	7.143	n/a	n/a	0.01	NP
Boron (mg/L)	MW-21D	0.1523	0	8	No	4	0	n/a	n/a	0.01	NP
Boron (mg/L)	MW-22	0.3067	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Boron (mg/L)	MW-23D	0.5041	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Boron (mg/L)	MW-33	-2.235	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Calcium (mg/L)	HGWA-1 (bg)	6.687	43	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-2 (bg)	-0.1393	-1	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-3 (bg)	3.531	39	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-4 (bg)	-7.131	-29	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-5 (bg)	-0.6566	-14	-48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	HGWA-6 (bg)	0.6134	15	48	No	14	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-21D	8.434	2	8	No	4	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-22	34.76	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Calcium (mg/L)	MW-23D	-10.08	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Calcium (mg/L)	MW-33	-191.2	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Chloride (mg/L)	HGWA-1 (bg)	1.469	22	48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-2 (bg)	-0.1372	-27	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-3 (bg)	0	-4	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-4 (bg)	-0.3207	-56	-48	Yes	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-5 (bg)	-0.09359	-18	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	HGWA-6 (bg)	-0.05984	-20	-48	No	14	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-21D	-62.33	-6	-8	No	4	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-22	10.22	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Chloride (mg/L)	MW-23D	-29.24	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Chloride (mg/L)	MW-33	47.18	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Field pH (s.u.)	HGWA-1 (bg)	-0.04693	-50	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-2 (bg)	-0.054	-32	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-3 (bg)	-0.009832	-11	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-4 (bg)	-0.2248	-59	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-5 (bg)	-0.04139	-35	-63	No	17	0	n/a	n/a	0.01	NP
Field pH (s.u.)	HGWA-6 (bg)	-0.02795	-29	-63	No	17	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-1 (bg)	8.572	44	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-2 (bg)	1.136	35	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-3 (bg)	2.216	57	48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-4 (bg)	-0.7339	-37	-48	No	14	14.29	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-5 (bg)	-0.1282	-8	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	HGWA-6 (bg)	0.5503	22	48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-21D	22.63	0	8	No	4	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-22	27.61	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Sulfate (mg/L)	MW-23D	-107.9	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Sulfate (mg/L)	MW-33	-99.32	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Total Dissolved Solids (mg/L)	HGWA-1 (bg)	19.47	27	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-2 (bg)	-3.376	-14	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-3 (bg)	2.137	9	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-4 (bg)	-29.52	-34	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-5 (bg)	-5.489	-26	-48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	HGWA-6 (bg)	2.317	20	48	No	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	MW-21D	213.6	4	8	No	4	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	MW-22	214.7	NaN	NaN	No	3	0	n/a	n/a	NaN	NP
Total Dissolved Solids (mg/L)	MW-23D	131.1	NaN	NaN	No	3	0	n/a	n/a	NaN	NP

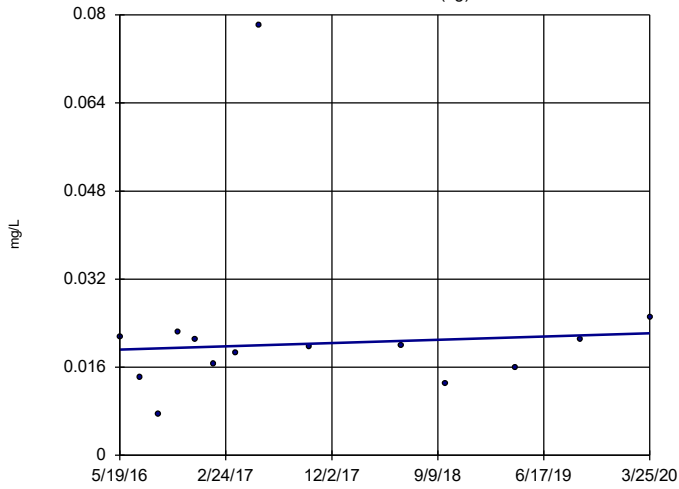
Trend Test Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:15 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Total Dissolved Solids (mg/L)	MW-33	571.1	NaN	NaN	No	3	0	n/a	n/a	NaN	NP

Sen's Slope Estimator

HGWA-1 (bg)

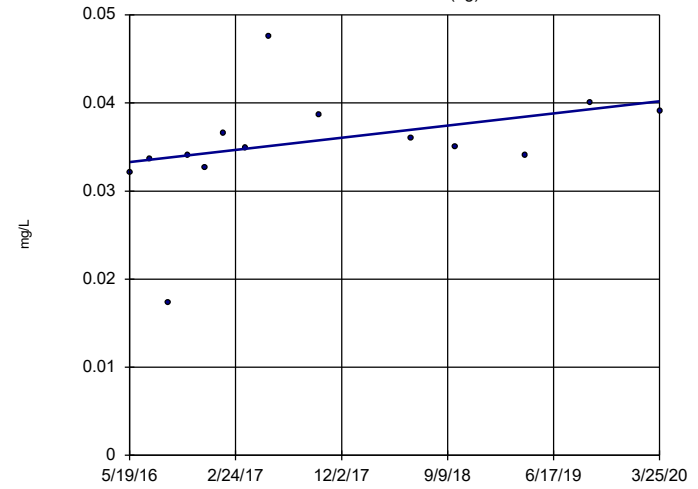


n = 14
 Slope = 0.0007668
 units per year.
 Mann-Kendall
 statistic = 9
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

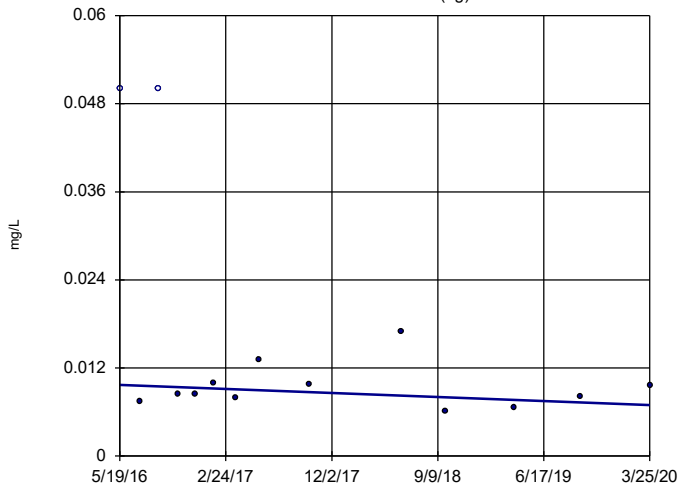


n = 14
 Slope = 0.001791
 units per year.
 Mann-Kendall
 statistic = 45
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

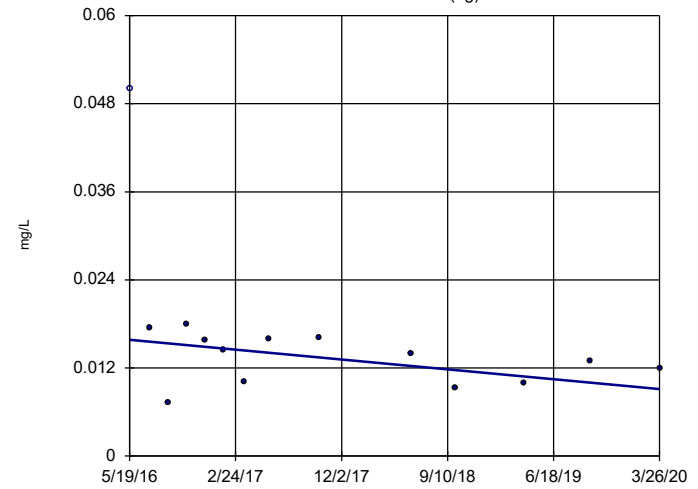


n = 14
 Slope = -0.0007135
 units per year.
 Mann-Kendall
 statistic = -19
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

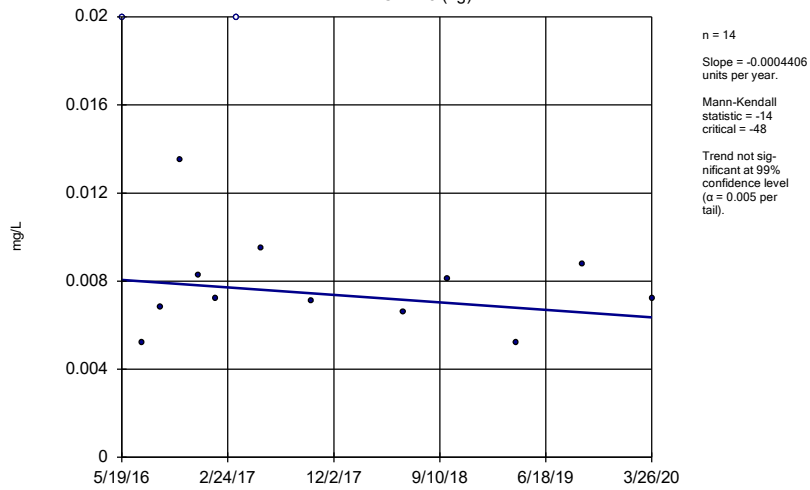


n = 14
 Slope = -0.001746
 units per year.
 Mann-Kendall
 statistic = -37
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

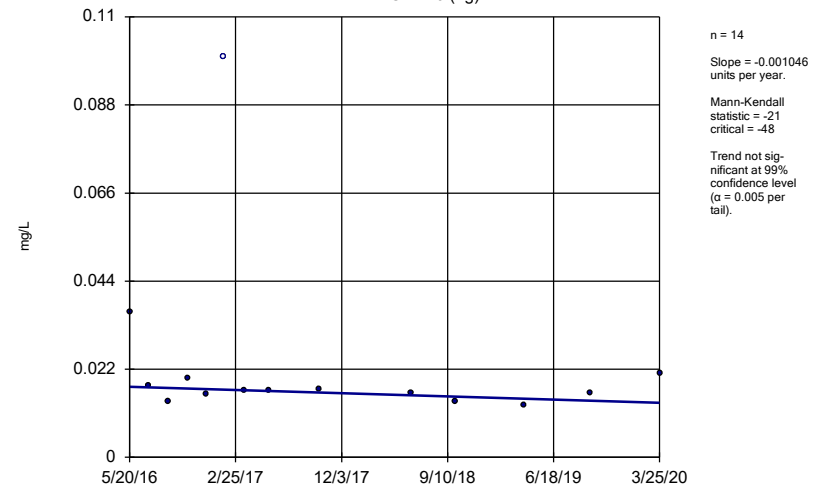
HGWA-5 (bg)



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

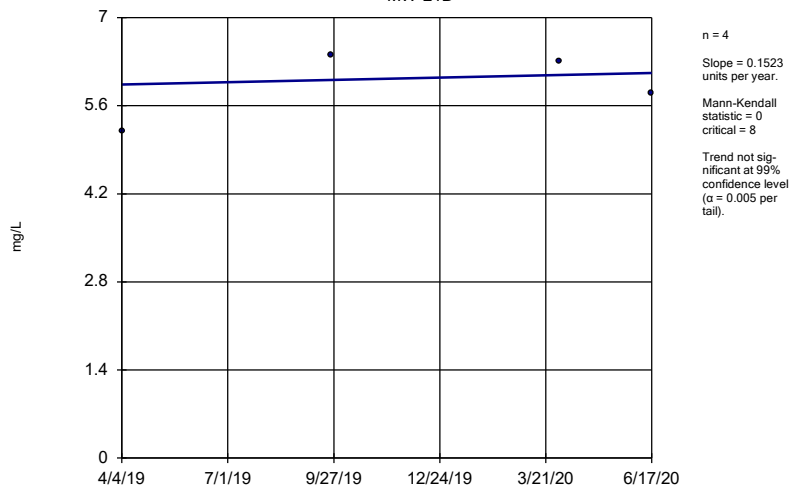
HGWA-6 (bg)



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

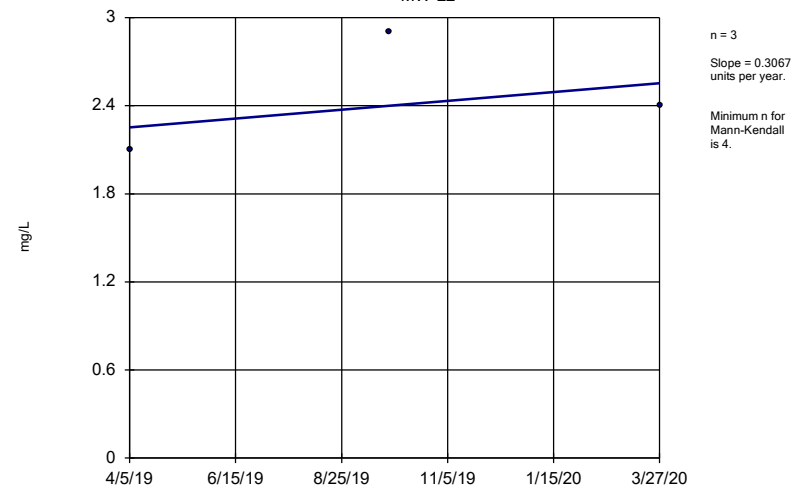
MW-21D



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

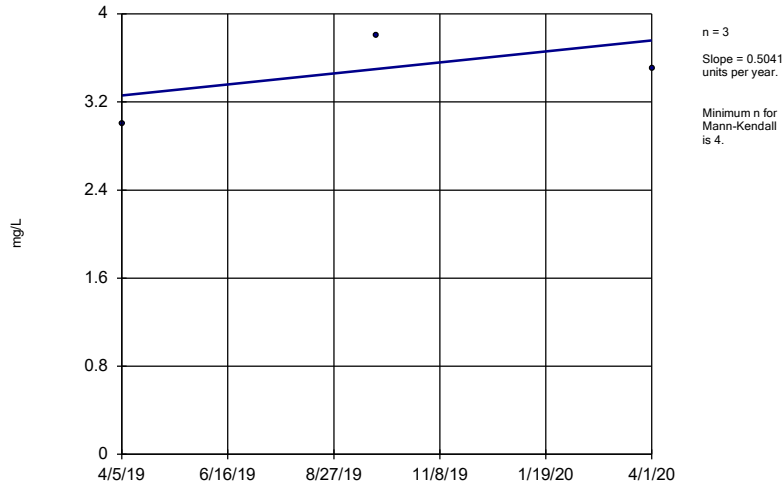
MW-22



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

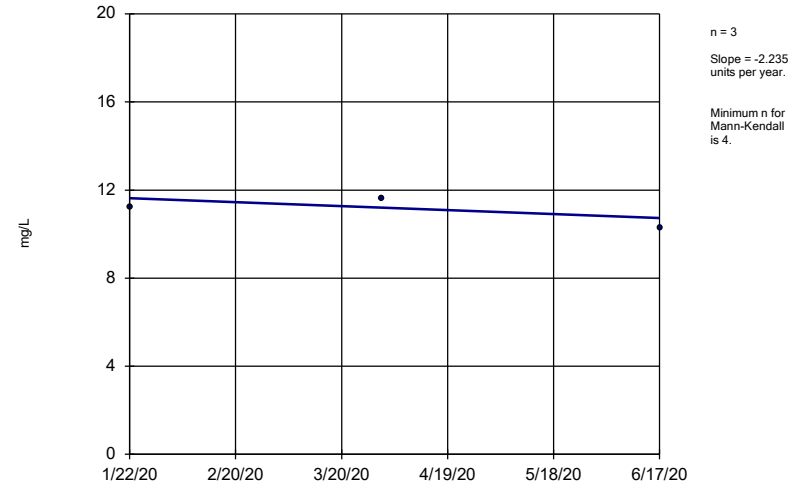
MW-23D



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

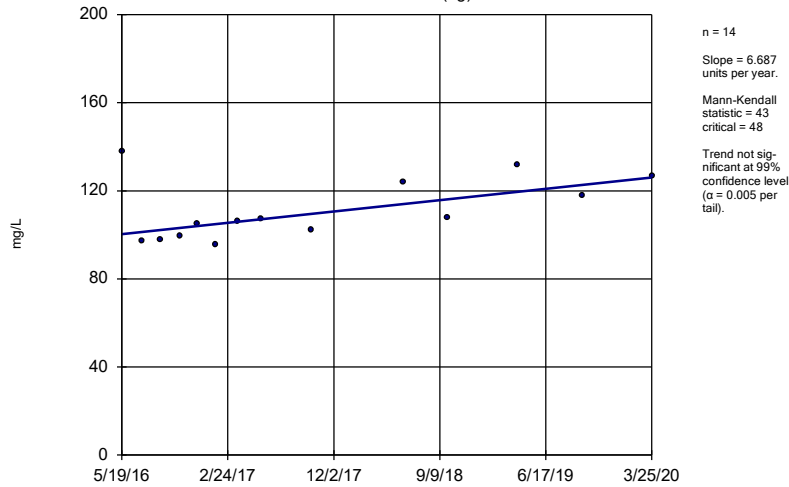
MW-33



Constituent: Boron Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

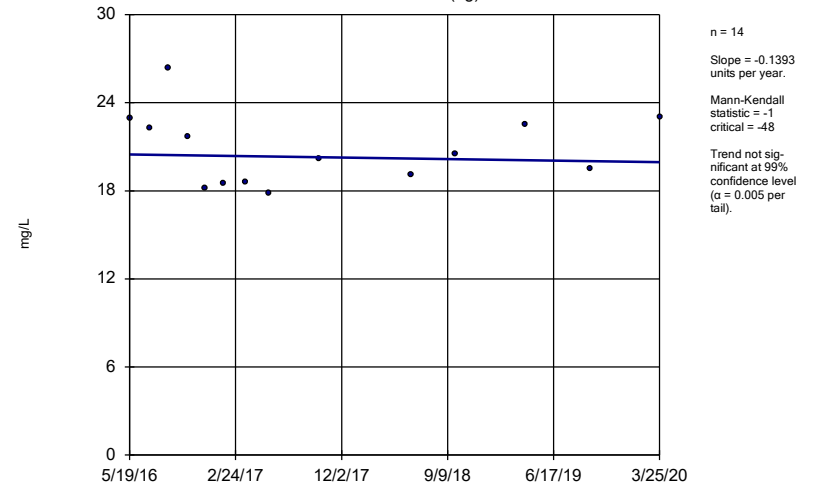
HGWA-1 (bg)



Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

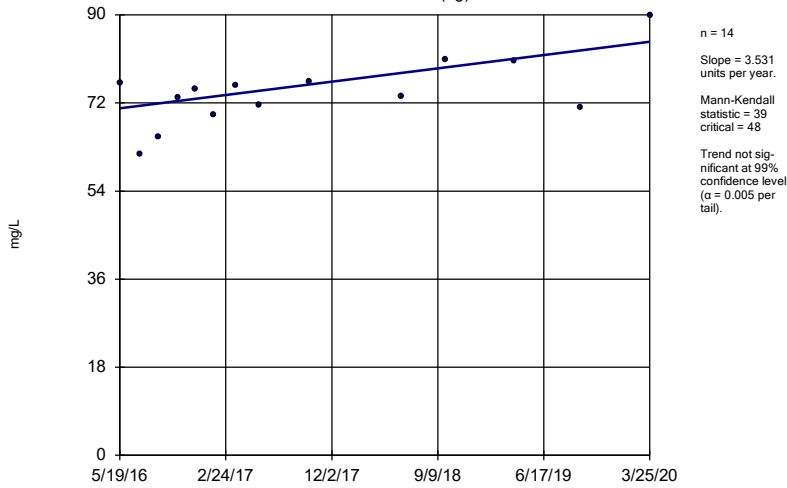
HGWA-2 (bg)



Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-3 (bg)

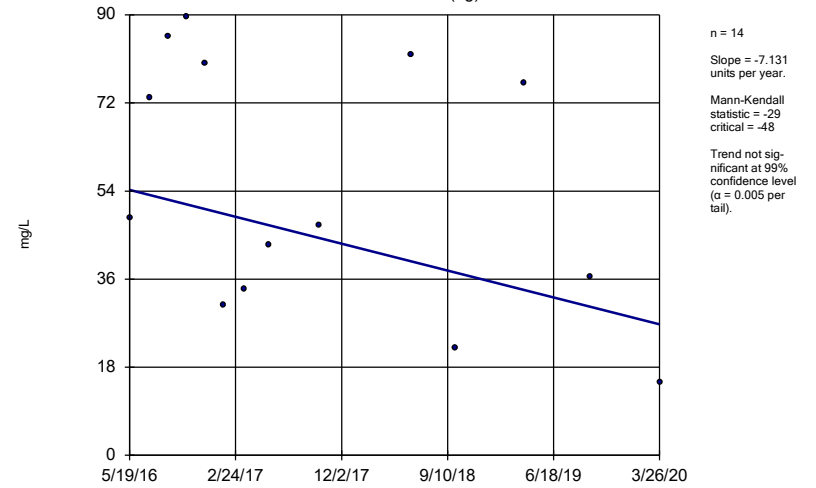


n = 14
 Slope = 3.531
 units per year.
 Mann-Kendall
 statistic = 39
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-4 (bg)

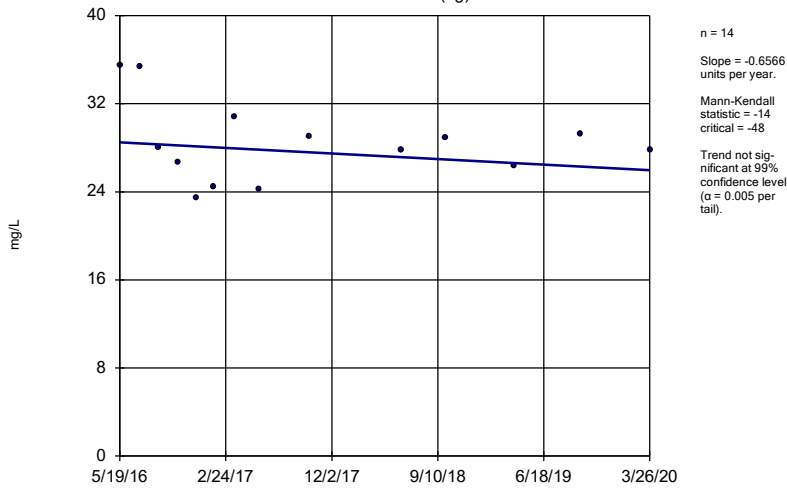


n = 14
 Slope = -7.131
 units per year.
 Mann-Kendall
 statistic = -29
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

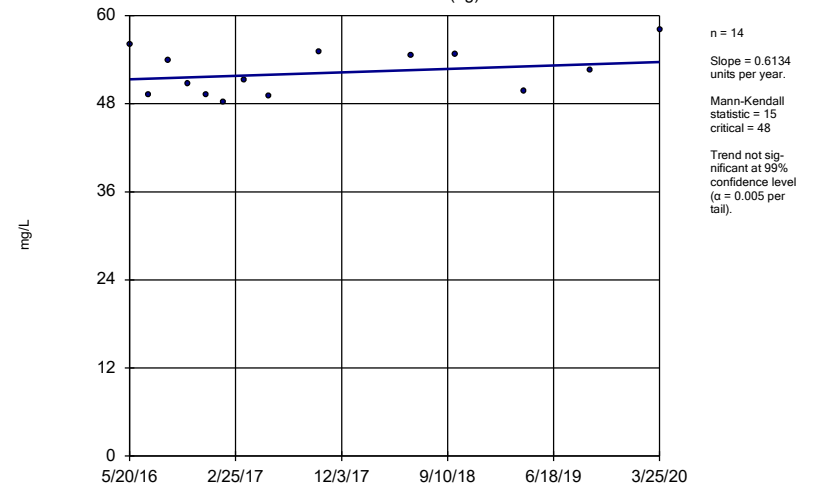


n = 14
 Slope = -0.6566
 units per year.
 Mann-Kendall
 statistic = -14
 critical = -48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

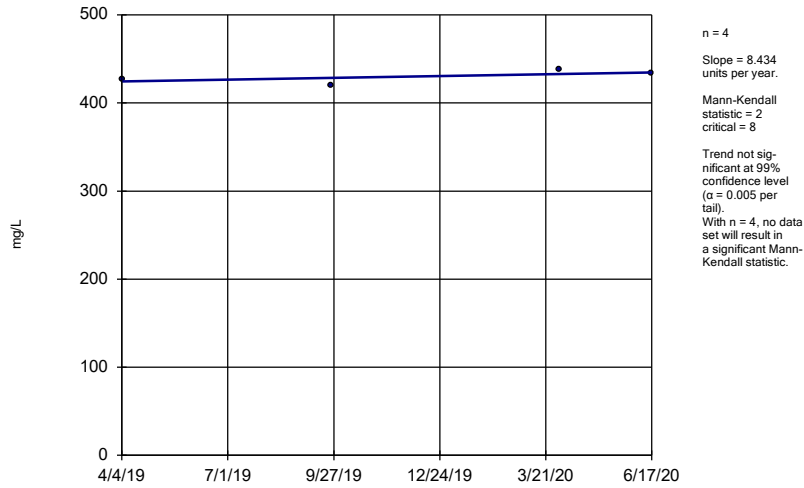
HGWA-6 (bg)



n = 14
 Slope = 0.6134
 units per year.
 Mann-Kendall
 statistic = 15
 critical = 48
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

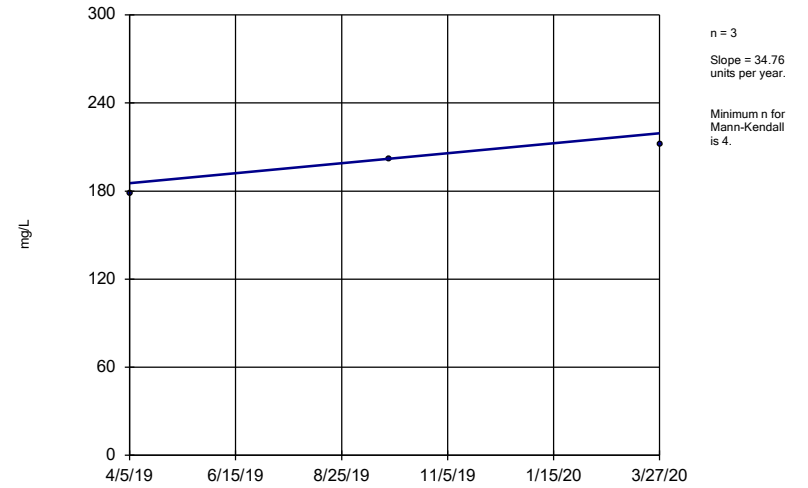
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
 Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-21D



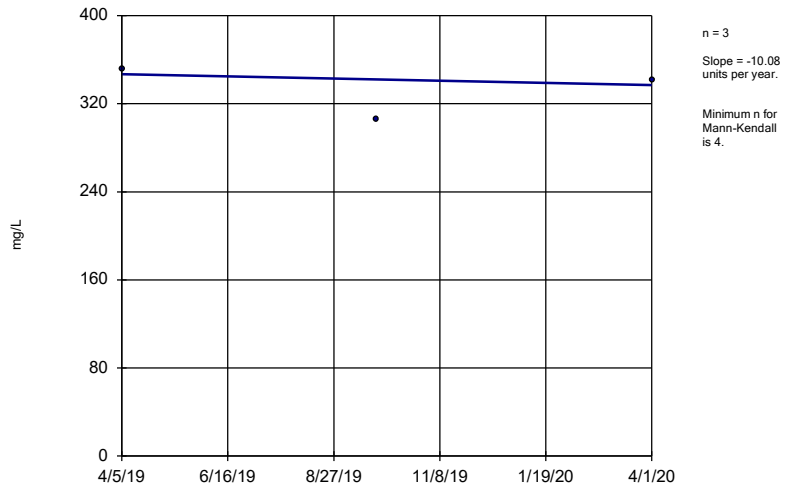
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-22



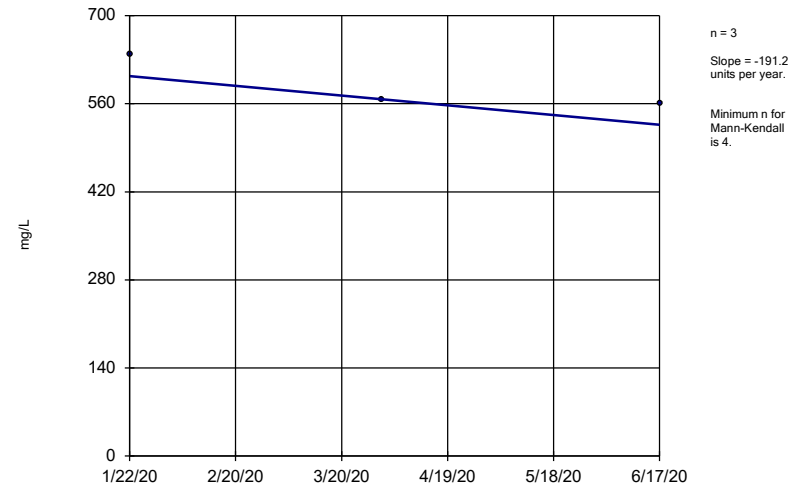
Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-23D



Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

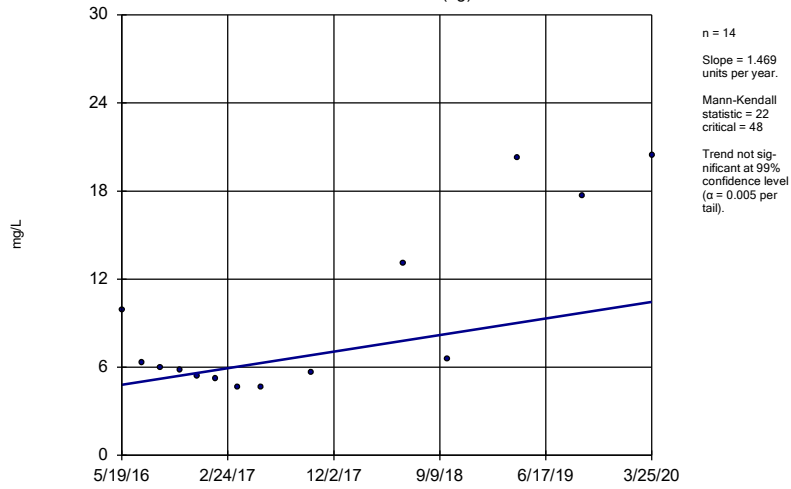
Sen's Slope Estimator
MW-33



Constituent: Calcium Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

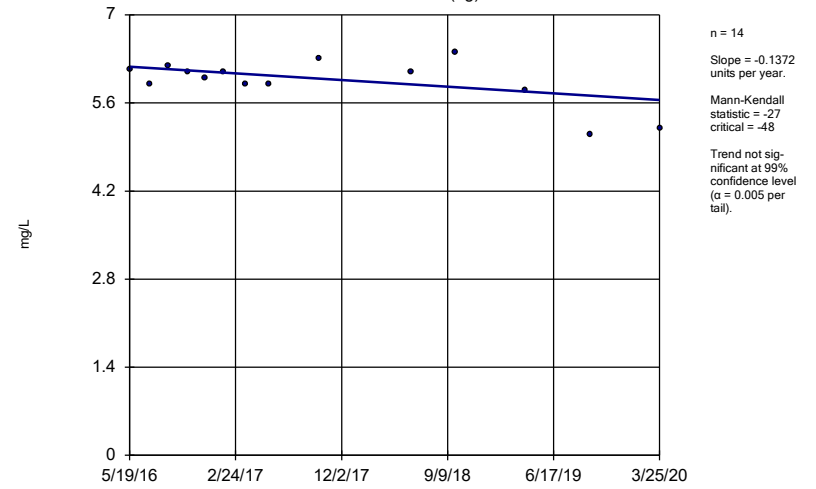
HGWA-1 (bg)



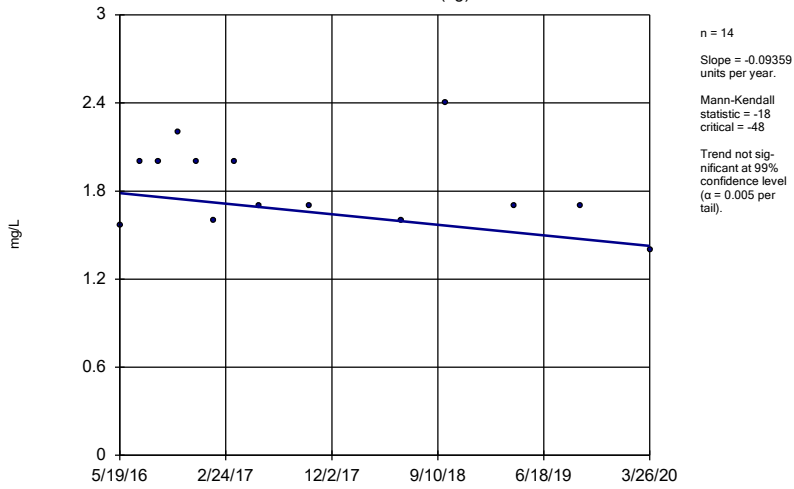
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-2 (bg)

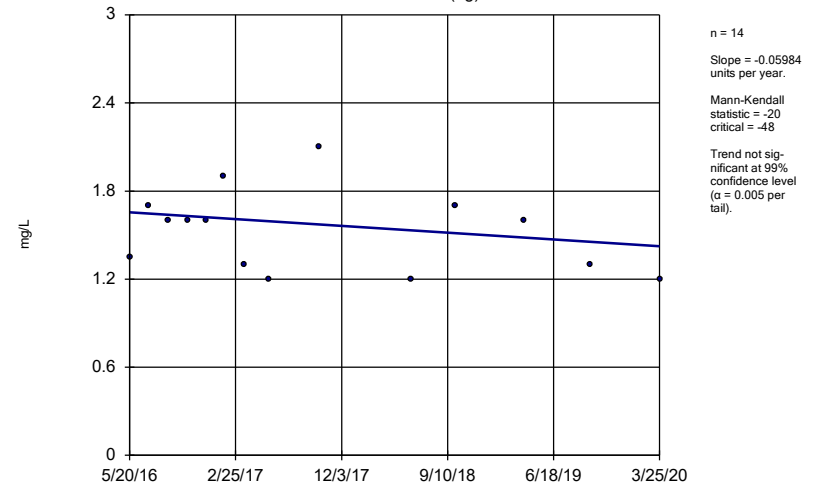


Sen's Slope Estimator
HGWA-5 (bg)



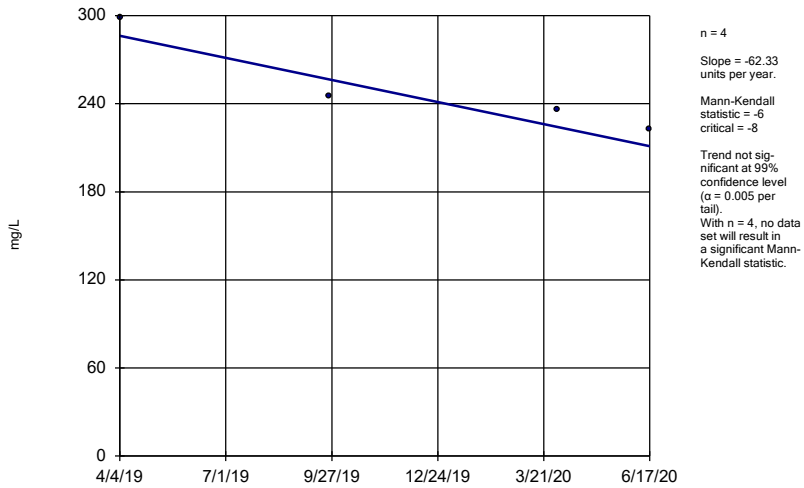
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-6 (bg)



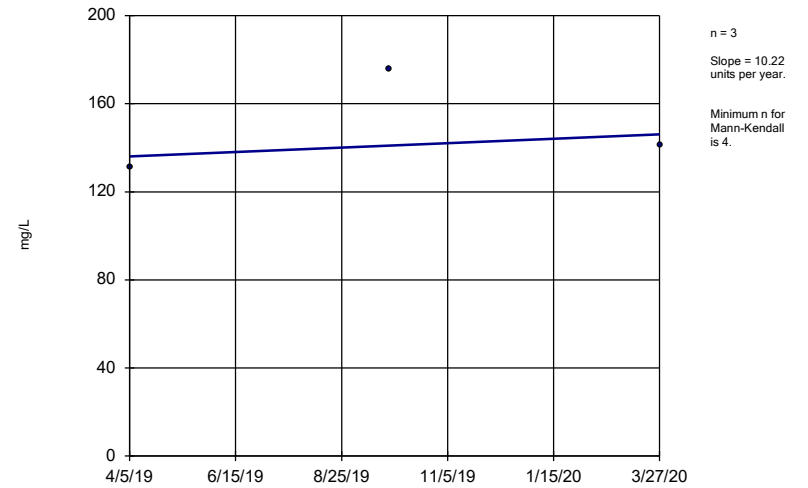
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-21D



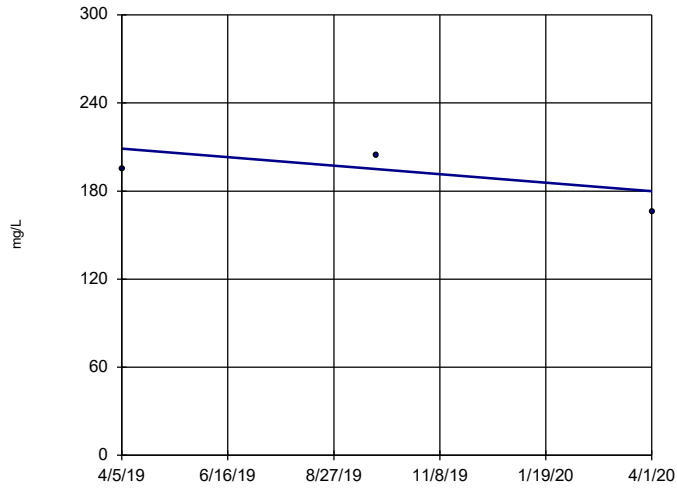
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-22



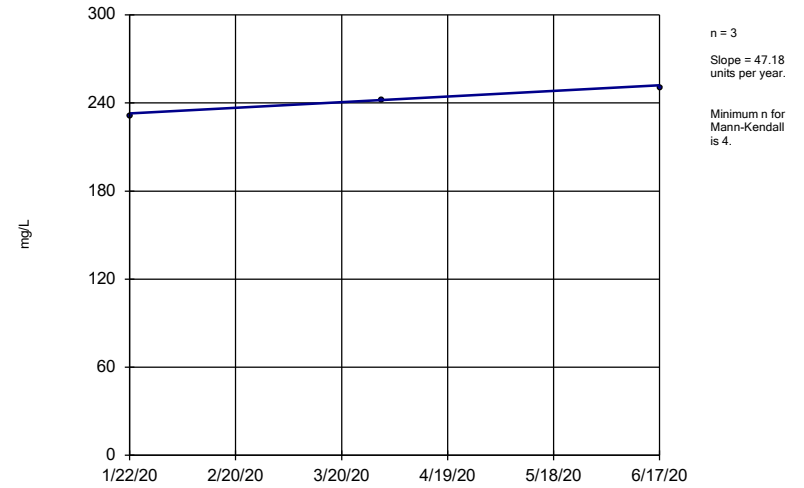
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-23D



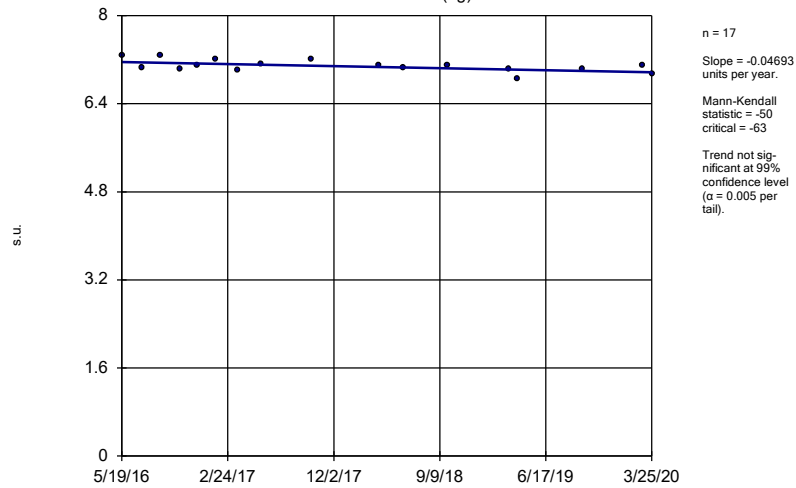
Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-33



Constituent: Chloride Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
HGWA-1 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

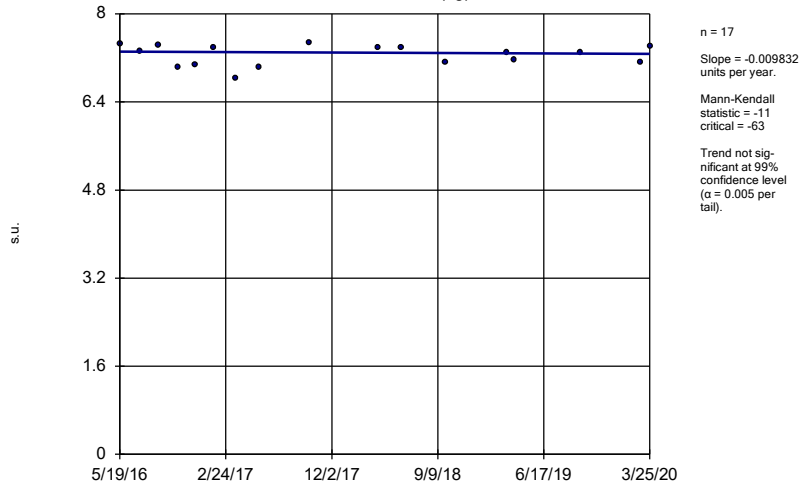
Sen's Slope Estimator
HGWA-2 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

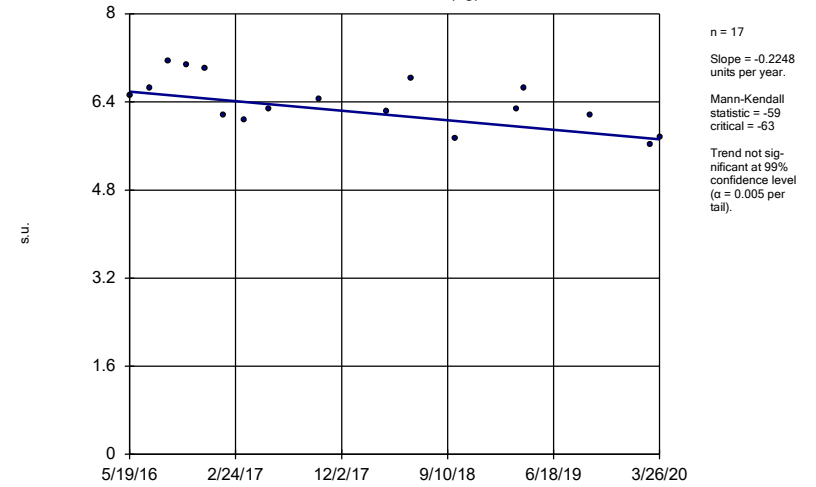
HGWA-3 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

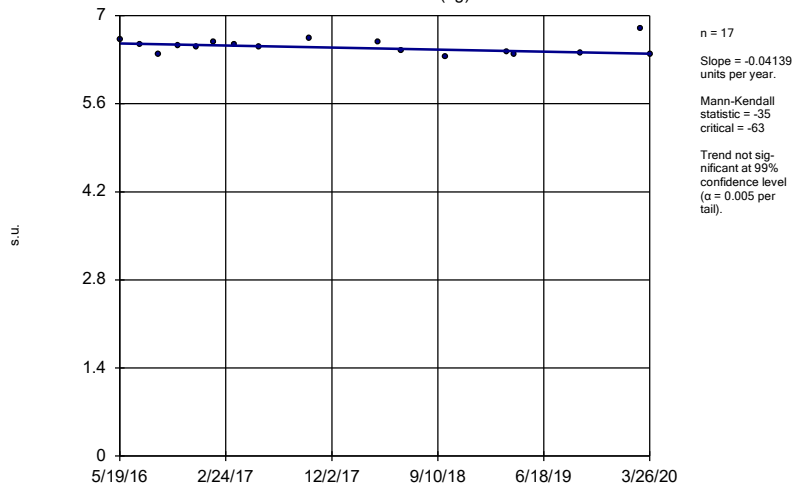
HGWA-4 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

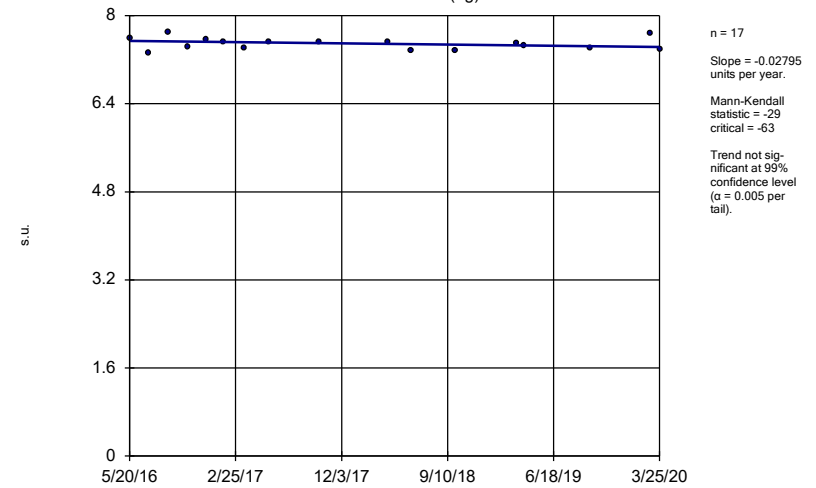
HGWA-5 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

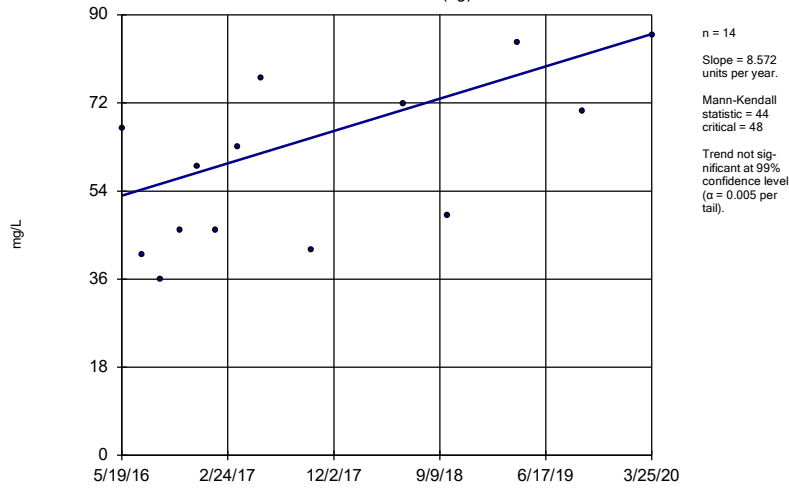
HGWA-6 (bg)



Constituent: Field pH Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

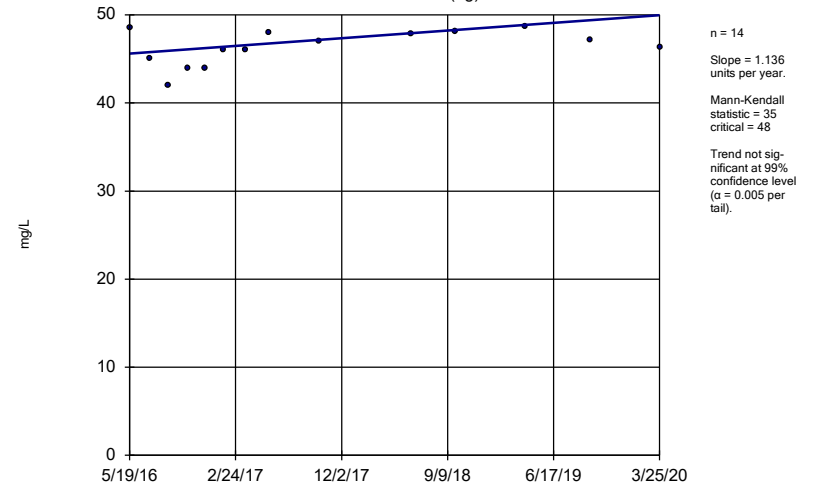
HGWA-1 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

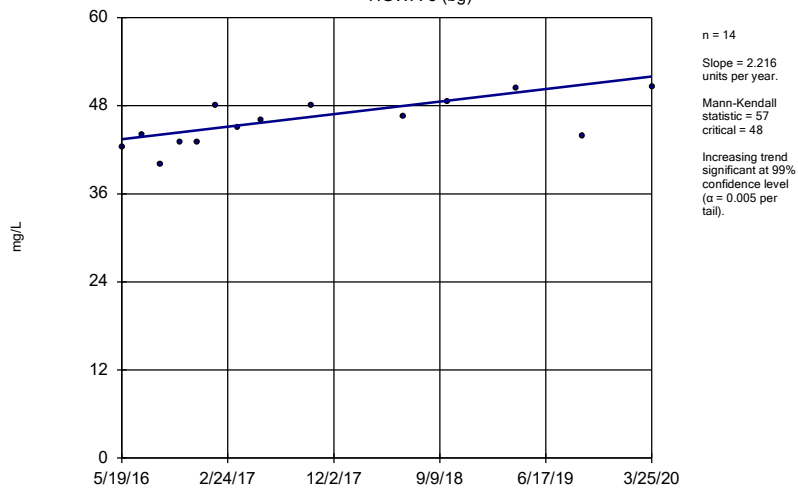
HGWA-2 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

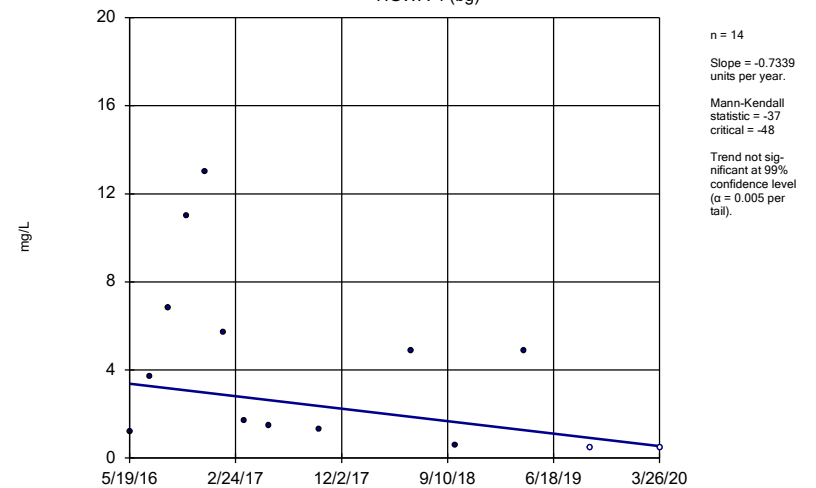
HGWA-3 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

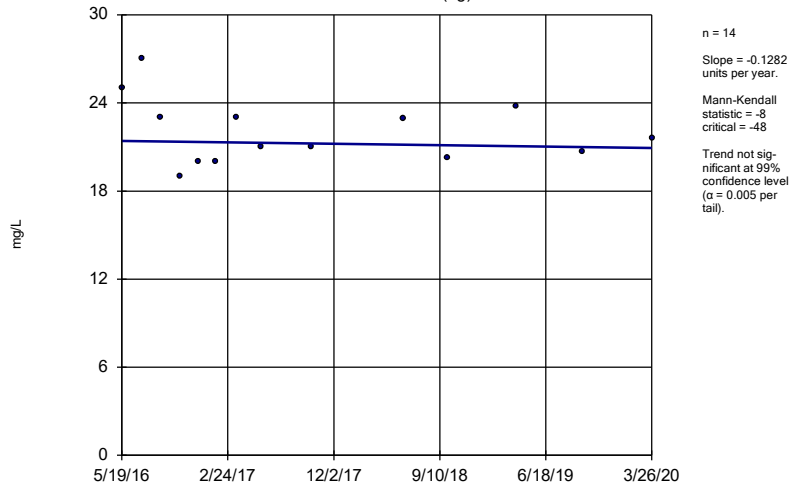
HGWA-4 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

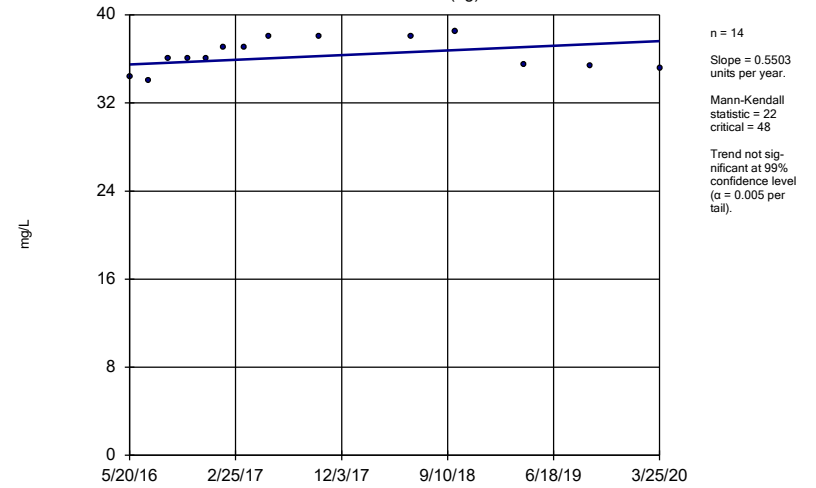
HGWA-5 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

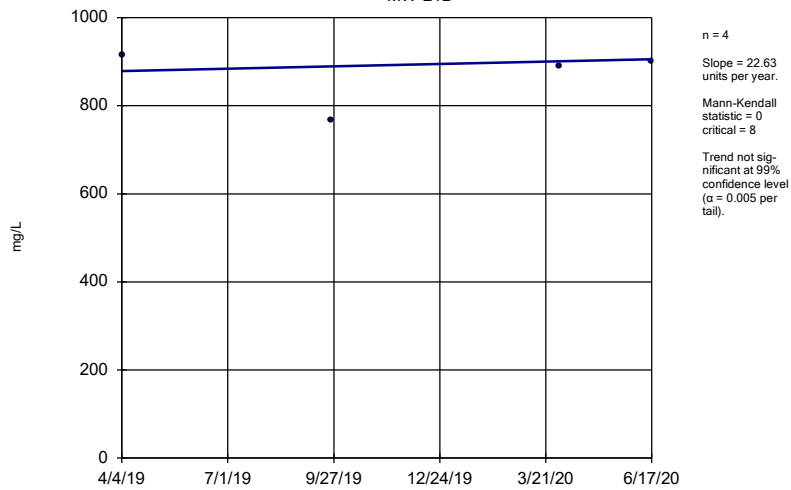
HGWA-6 (bg)



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

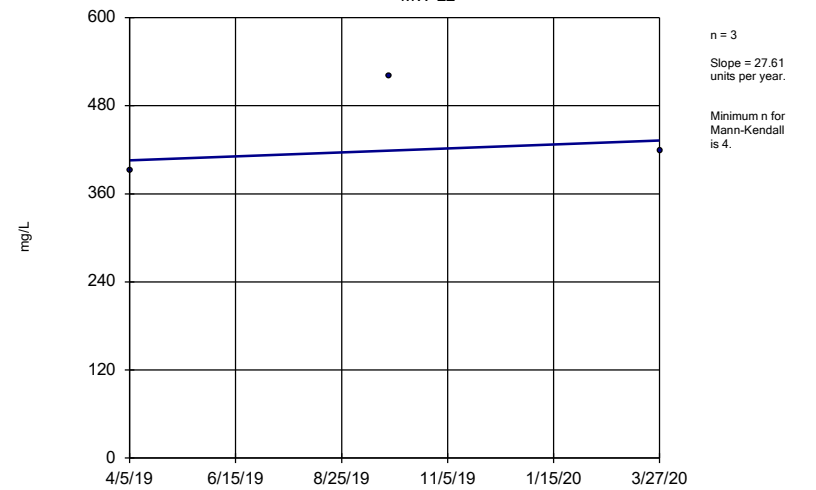
MW-21D



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

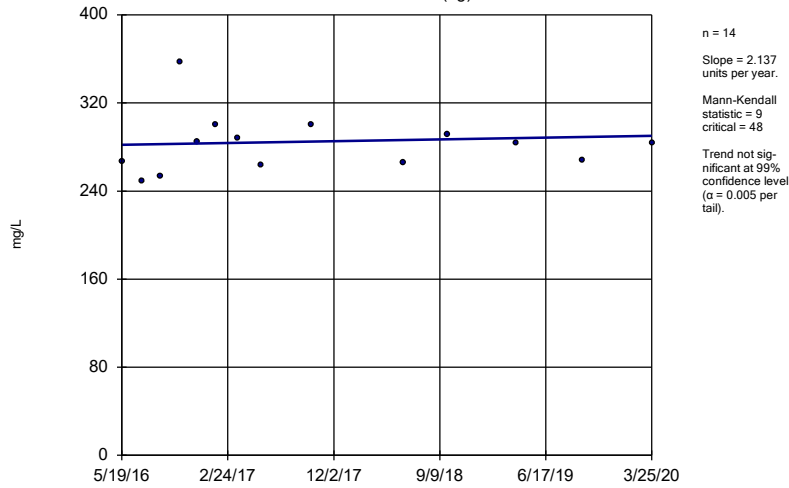
MW-22



Constituent: Sulfate Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL Exceedances
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

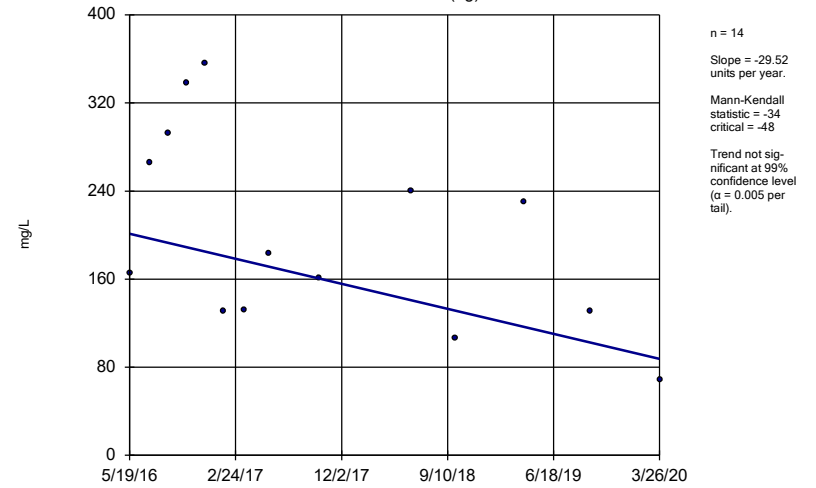
HGWA-3 (bg)



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

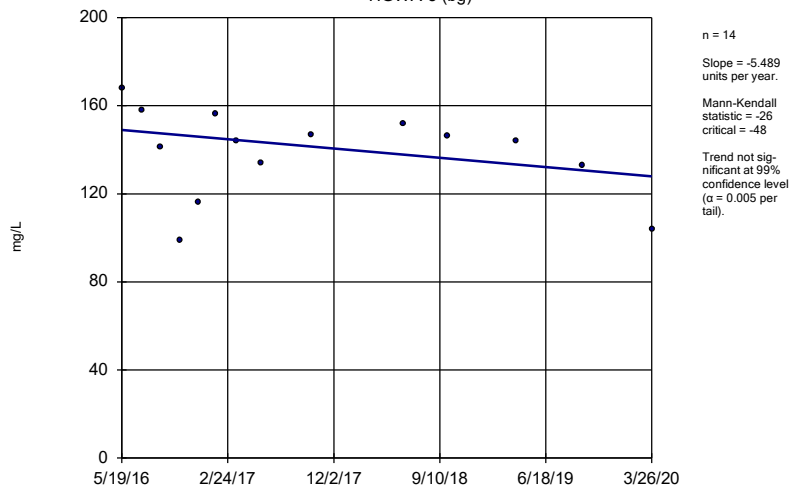
HGWA-4 (bg)



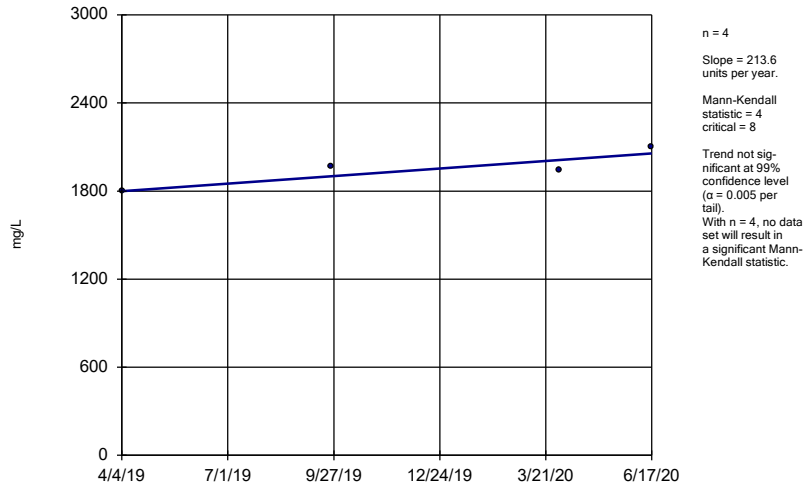
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator

HGWA-5 (bg)

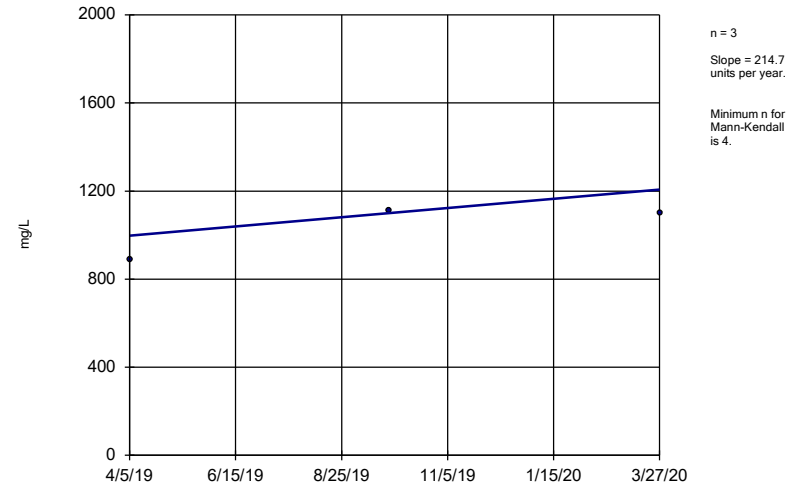


Sen's Slope Estimator
MW-21D



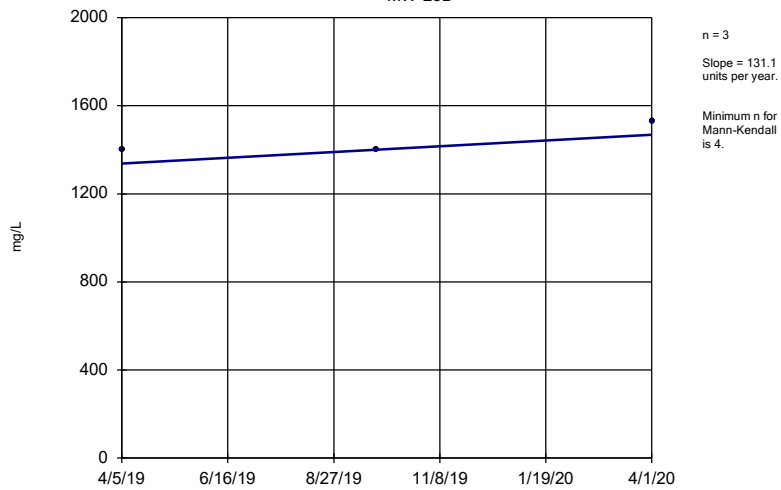
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-22



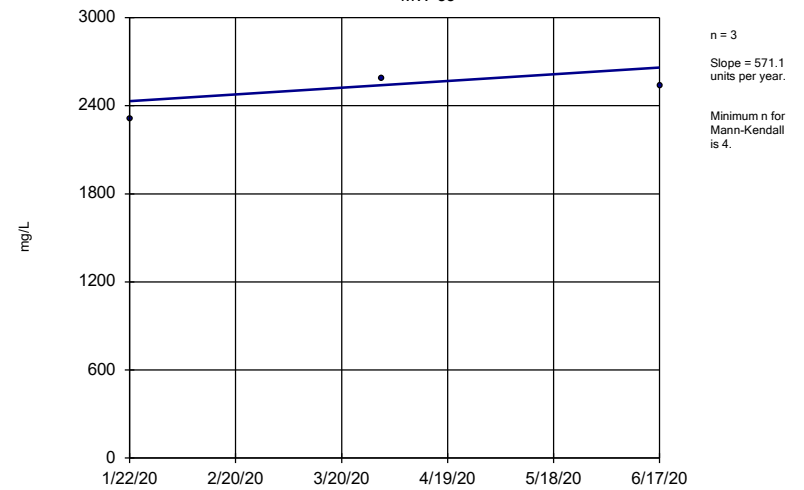
Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-23D



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

Sen's Slope Estimator
MW-33



Constituent: Total Dissolved Solids Analysis Run 8/11/2020 10:14 AM View: Trend Tests - New Wells PL
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE E.

Tolerance Limit Summary Table - Appendix IV

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/7/2020, 12:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	69	n/a	n/a	94.2	n/a	n/a	0.02904	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	96	n/a	n/a	79.17	n/a	n/a	0.007269	NP Inter(NDs)
Barium (mg/L)	n/a	0.22	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	84	n/a	n/a	83.33	n/a	n/a	0.01345	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	96	n/a	n/a	92.71	n/a	n/a	0.007269	NP Inter(NDs)
Chromium (mg/L)	n/a	0.019	84	n/a	n/a	86.9	n/a	n/a	0.01345	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.038	96	n/a	n/a	67.71	n/a	n/a	0.007269	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	4.36	96	n/a	n/a	0	n/a	n/a	0.007269	NP Inter(normality)
Fluoride (mg/L)	n/a	0.36	102	n/a	n/a	34.31	n/a	n/a	0.005343	NP Inter(normality)
Lead (mg/L)	n/a	0.005	84	n/a	n/a	80.95	n/a	n/a	0.01345	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	96	n/a	n/a	27.08	n/a	n/a	0.007269	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	66	n/a	n/a	87.88	n/a	n/a	0.03387	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	84	n/a	n/a	97.62	n/a	n/a	0.01345	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	96	n/a	n/a	98.96	n/a	n/a	0.007269	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	96	n/a	n/a	97.92	n/a	n/a	0.007269	NP Inter(NDs)

FIGURE F.

PLANT HAMMOND AP-2 GWPS (State)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

**GWPS = Groundwater Protection Standard*

PLANT HAMMOND AP-2 GWPS (Federal)				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.005	0.01
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.003	0.004
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.019	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.038	0.038
Combined Radium, Total (pCi/L)	5		4.36	5
Fluoride, Total (mg/L)	4		0.36	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

Shaded cell indicates background is higher than established limit.

*MCL = Maximum Contaminant Level

*CCR = Coal Combustion Residuals

*GWPS = Groundwater Protection Standard

FIGURE G.

State Confidence Interval Summary (New Wells) - Significant Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:26 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u> <u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (mg/L)	MW-21D	0.04409 0.01724	0.01	Yes 6	0.03067	0.009771	0	None	No	0.01	Param.

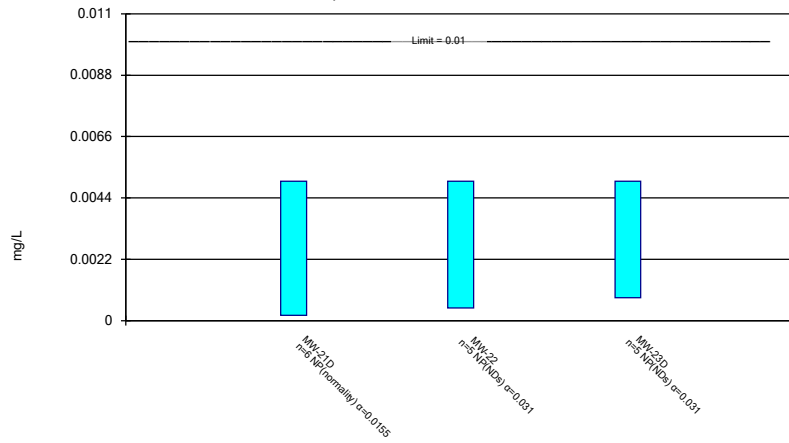
State Confidence Interval Summary (New Wells) - All Results

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:26 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 6	0.003582	0.002225	66.67	None	No	0.0155	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 5	0.00409	0.002035	80	None	No	0.031	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 5	0.004164	0.001869	80	None	No	0.031	NP (NDs)
Barium (mg/L)	MW-21D	0.08594	0.05039	2	No 6	0.06817	0.01294	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04525	0.01875	2	No 5	0.032	0.007906	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.082	0.06	2	No 5	0.0664	0.008961	0	None	No	0.031	NP (normality)
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 6	0.0025	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	MW-22	0.002448	0.0002957	0.005	No 5	0.001372	0.0006423	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0025	0.005	No 5	0.0025	0	100	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 6	0.008428	0.00385	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 5	0.00808	0.004293	80	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 5	0.008172	0.004088	80	None	No	0.031	NP (NDs)
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 6	0.004223	0.001902	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	MW-22	0.04475	0.01645	0.038	No 5	0.0306	0.008444	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001338	0.0009344	0.038	No 5	0.001136	0.0001203	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-21D	1.94	0.691	5	No 6	0.9838	0.478	0	None	No	0.0155	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW-22	1.433	0.6903	5	No 5	1.062	0.2217	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-23D	1.25	0.872	5	No 5	0.9864	0.1511	0	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 6	0.1	6.1e-10	83.33	None	No	0.0155	NP (NDs)
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 5	0.142	0.07823	60	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 5	0.12	0.02828	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.005	No 6	0.003349	0.002557	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.005	No 5	0.003039	0.002685	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.005	No 5	0.00401	0.002213	80	None	No	0.031	NP (NDs)
Lithium (mg/L)	MW-21D	0.02746	0.02021	0.03	No 6	0.02383	0.002639	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.002	0.0013	0.03	No 5	0.00148	0.0003033	0	None	No	0.031	NP (normality)
Lithium (mg/L)	MW-23D	0.002854	0.001986	0.03	No 5	0.00242	0.0002588	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-21D	0.04409	0.01724	0.01	Yes 6	0.03067	0.009771	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.01	No 5	0.008026	0.004414	80	None	No	0.031	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.01	No 5	0.00402	0.003415	20	None	No	0.031	NP (Cohens/xfrm)
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)

Non-Parametric Confidence Interval

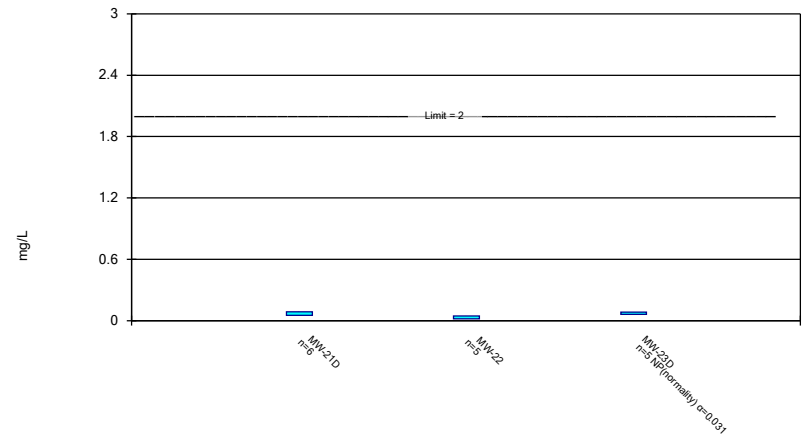
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

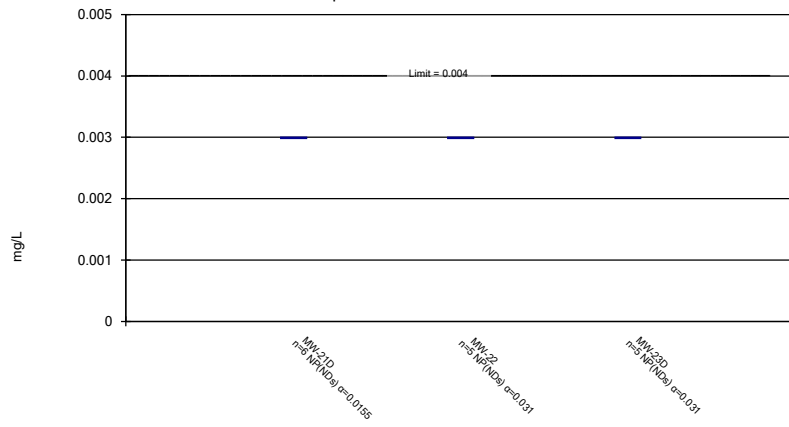
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

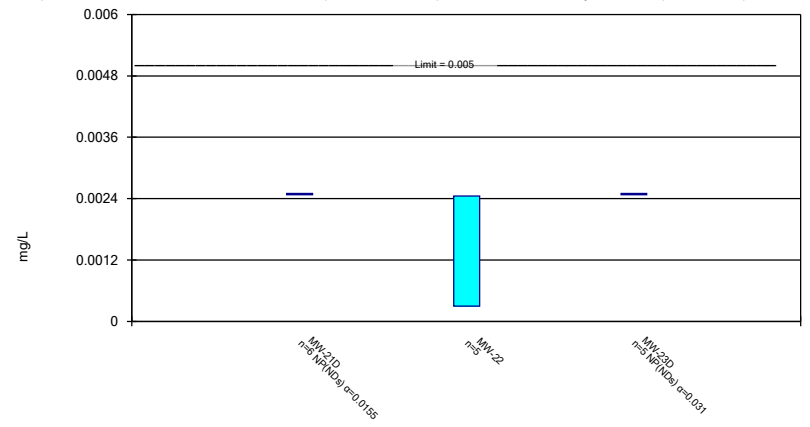
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

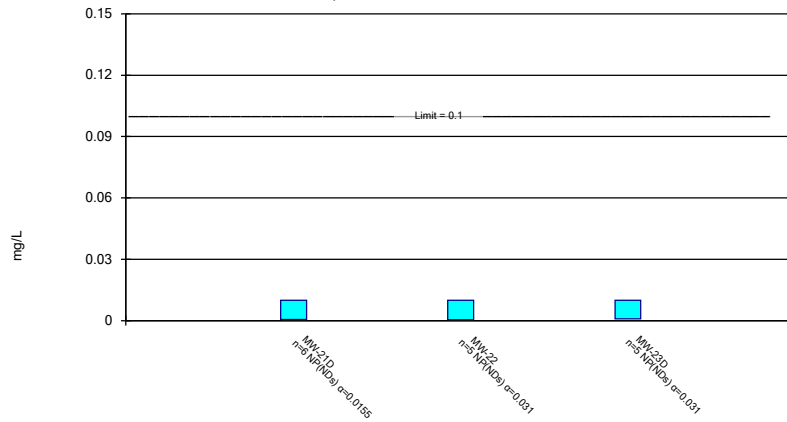
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

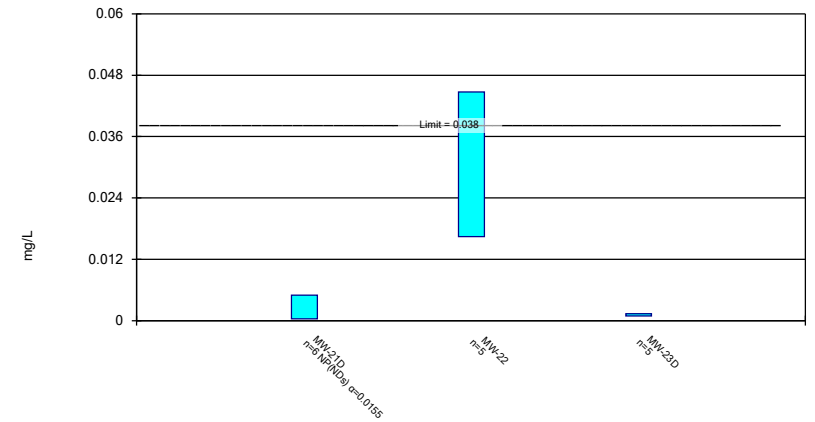
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

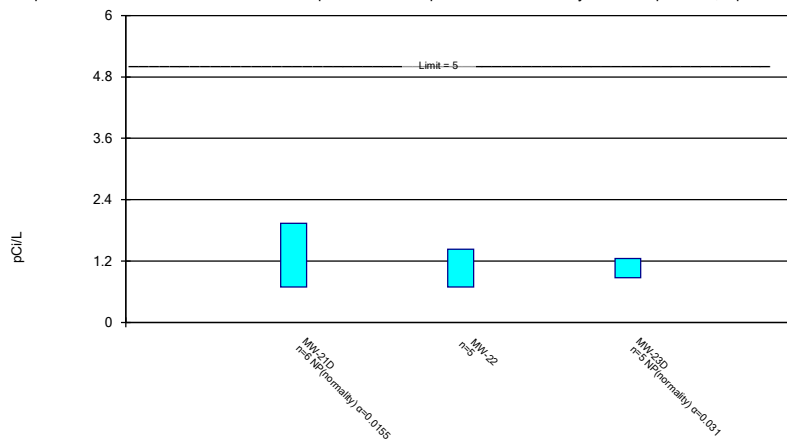
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

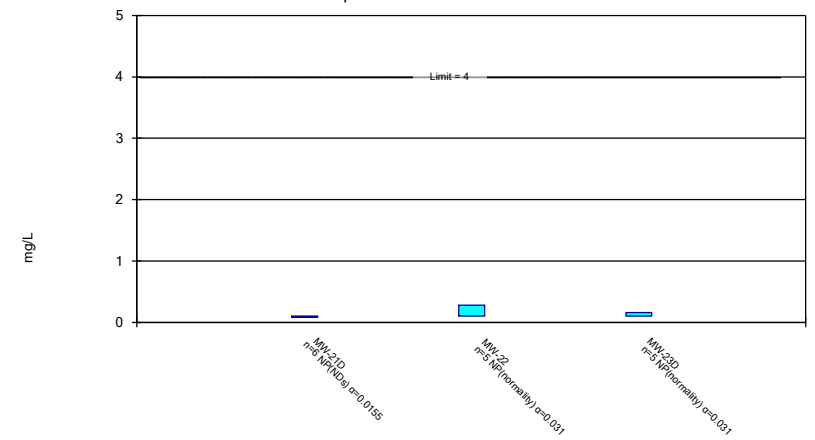
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals -
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

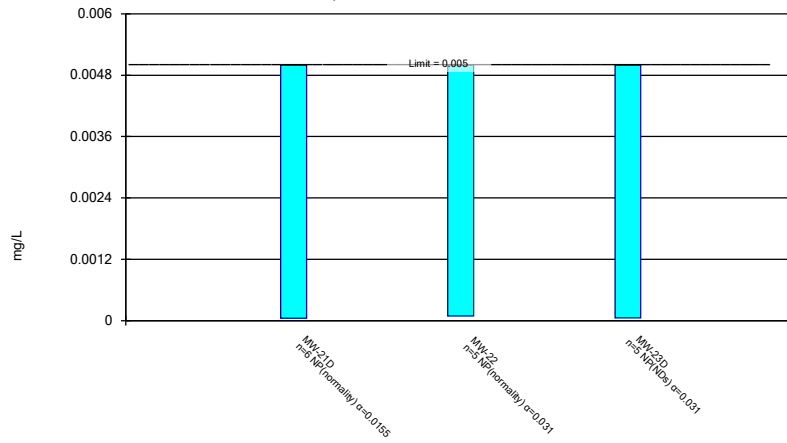
Compliance Limit is not exceeded.



Constituent: Fluoride Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

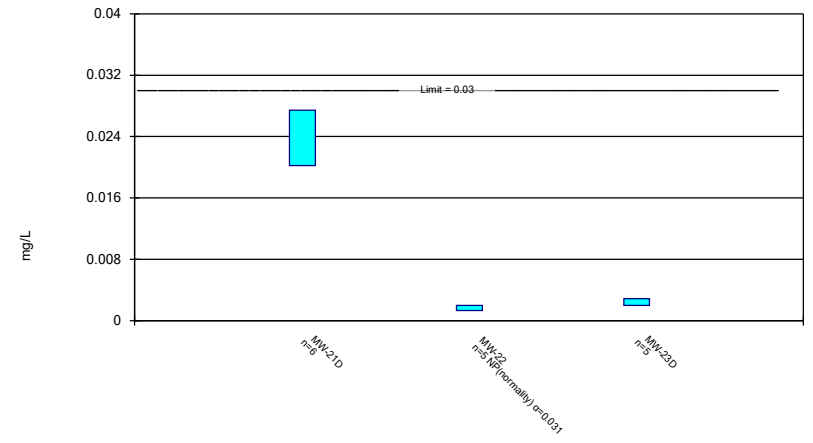
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

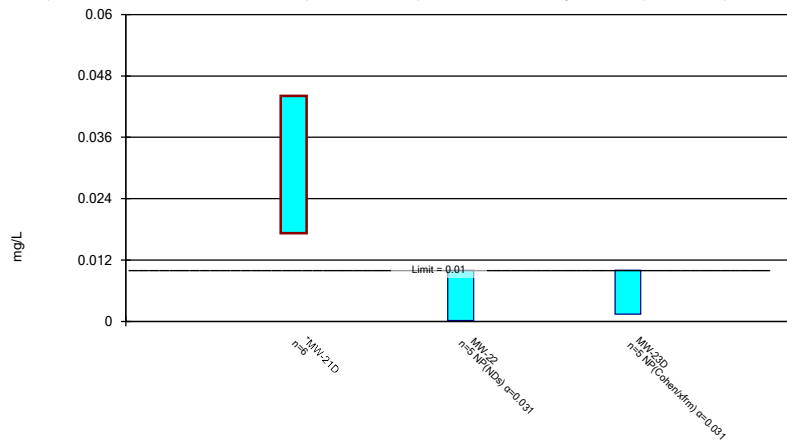
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

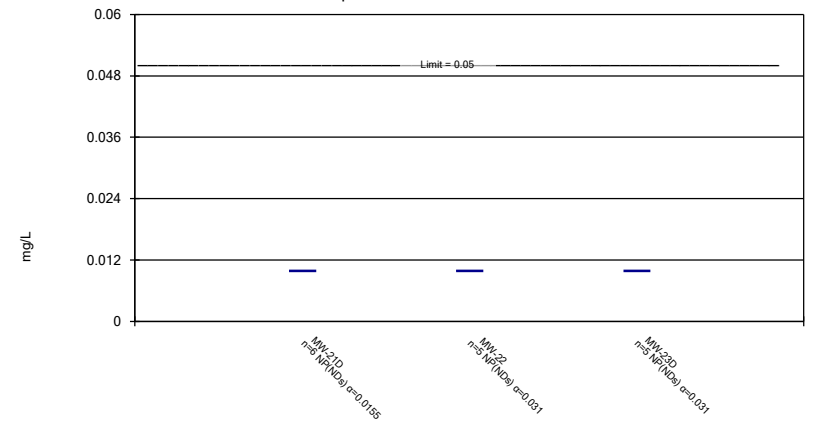
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

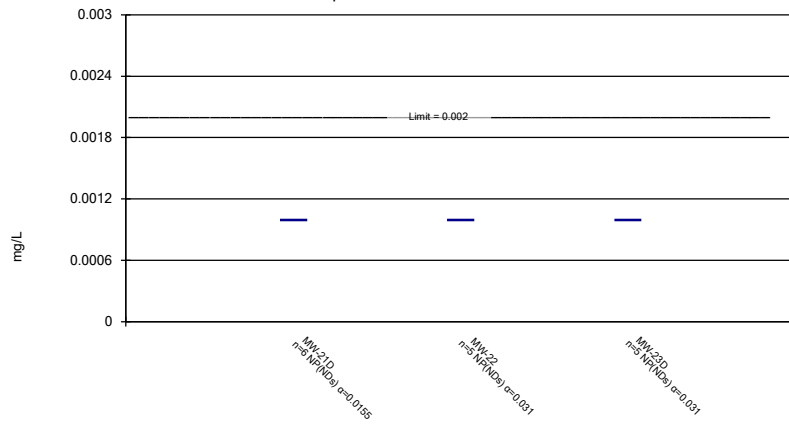
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 8/11/2020 10:18 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

FIGURE H.

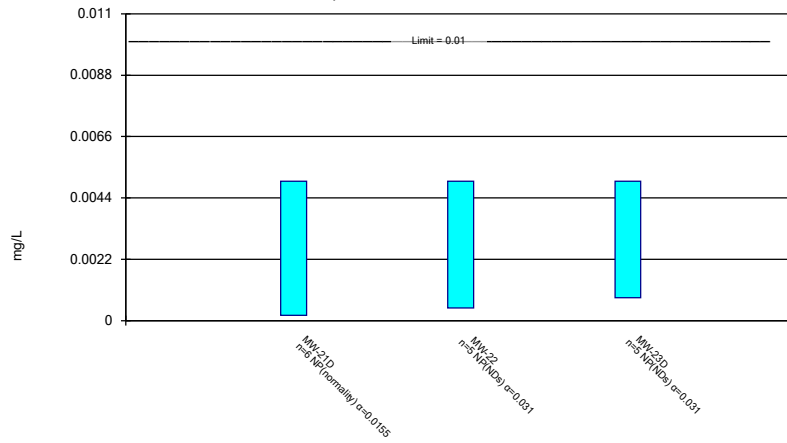
Federal Confidence Interval Summary (New Wells) - All Results (No Significant)

Plant Hammond Client: Southern Company Data: Hammond AP-2 Printed 8/11/2020, 10:17 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-21D	0.005	0.00019	0.01	No 6	0.003582	0.002225	66.67	None	No	0.0155	NP (normality)
Arsenic (mg/L)	MW-22	0.005	0.00045	0.01	No 5	0.00409	0.002035	80	None	No	0.031	NP (NDs)
Arsenic (mg/L)	MW-23D	0.005	0.00082	0.01	No 5	0.004164	0.001869	80	None	No	0.031	NP (NDs)
Barium (mg/L)	MW-21D	0.08594	0.05039	2	No 6	0.06817	0.01294	0	None	No	0.01	Param.
Barium (mg/L)	MW-22	0.04525	0.01875	2	No 5	0.032	0.007906	0	None	No	0.01	Param.
Barium (mg/L)	MW-23D	0.082	0.06	2	No 5	0.0664	0.008961	0	None	No	0.031	NP (normality)
Beryllium (mg/L)	MW-21D	0.003	0.003	0.004	No 6	0.003	0	100	None	No	0.0155	NP (NDs)
Beryllium (mg/L)	MW-22	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Beryllium (mg/L)	MW-23D	0.003	0.003	0.004	No 5	0.003	0	100	None	No	0.031	NP (NDs)
Cadmium (mg/L)	MW-21D	0.0025	0.0025	0.005	No 6	0.0025	0	100	None	No	0.0155	NP (NDs)
Cadmium (mg/L)	MW-22	0.002448	0.0002957	0.005	No 5	0.001372	0.0006423	0	None	No	0.01	Param.
Cadmium (mg/L)	MW-23D	0.0025	0.0025	0.005	No 5	0.0025	0	100	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-21D	0.01	0.00057	0.1	No 6	0.008428	0.00385	83.33	None	No	0.0155	NP (NDs)
Chromium (mg/L)	MW-22	0.01	0.0004	0.1	No 5	0.00808	0.004293	80	None	No	0.031	NP (NDs)
Chromium (mg/L)	MW-23D	0.01	0.00086	0.1	No 5	0.008172	0.004088	80	None	No	0.031	NP (NDs)
Cobalt (mg/L)	MW-21D	0.005	0.00034	0.038	No 6	0.004223	0.001902	83.33	None	No	0.0155	NP (NDs)
Cobalt (mg/L)	MW-22	0.04475	0.01645	0.038	No 5	0.0306	0.008444	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-23D	0.001338	0.0009344	0.038	No 5	0.001136	0.0001203	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-21D	1.94	0.691	5	No 6	0.9838	0.478	0	None	No	0.0155	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW-22	1.433	0.6903	5	No 5	1.062	0.2217	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-23D	1.25	0.872	5	No 5	0.9864	0.1511	0	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-21D	0.1	0.1	4	No 6	0.1	6.1e-10	83.33	None	No	0.0155	NP (NDs)
Fluoride (mg/L)	MW-22	0.28	0.1	4	No 5	0.142	0.07823	60	None	No	0.031	NP (normality)
Fluoride (mg/L)	MW-23D	0.16	0.1	4	No 5	0.12	0.02828	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-21D	0.005	0.000047	0.015	No 6	0.003349	0.002557	66.67	None	No	0.0155	NP (normality)
Lead (mg/L)	MW-22	0.005	0.000094	0.015	No 5	0.003039	0.002685	60	None	No	0.031	NP (normality)
Lead (mg/L)	MW-23D	0.005	0.000051	0.015	No 5	0.00401	0.002213	80	None	No	0.031	NP (NDs)
Lithium (mg/L)	MW-21D	0.02746	0.02021	0.04	No 6	0.02383	0.002639	0	None	No	0.01	Param.
Lithium (mg/L)	MW-22	0.002	0.0013	0.04	No 5	0.00148	0.0003033	0	None	No	0.031	NP (normality)
Lithium (mg/L)	MW-23D	0.002854	0.001986	0.04	No 5	0.00242	0.0002588	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-21D	0.04409	0.01724	0.1	No 6	0.03067	0.009771	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-22	0.01	0.00013	0.1	No 5	0.008026	0.004414	80	None	No	0.031	NP (NDs)
Molybdenum (mg/L)	MW-23D	0.01	0.0014	0.1	No 5	0.00402	0.003415	20	None	No	0.031	NP (Cohens/xfrm)
Selenium (mg/L)	MW-21D	0.01	0.01	0.05	No 6	0.01	0	100	None	No	0.0155	NP (NDs)
Selenium (mg/L)	MW-22	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Selenium (mg/L)	MW-23D	0.01	0.01	0.05	No 5	0.01	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-21D	0.001	0.001	0.002	No 6	0.001	0	100	None	No	0.0155	NP (NDs)
Thallium (mg/L)	MW-22	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)
Thallium (mg/L)	MW-23D	0.001	0.001	0.002	No 5	0.001	0	100	None	No	0.031	NP (NDs)

Non-Parametric Confidence Interval

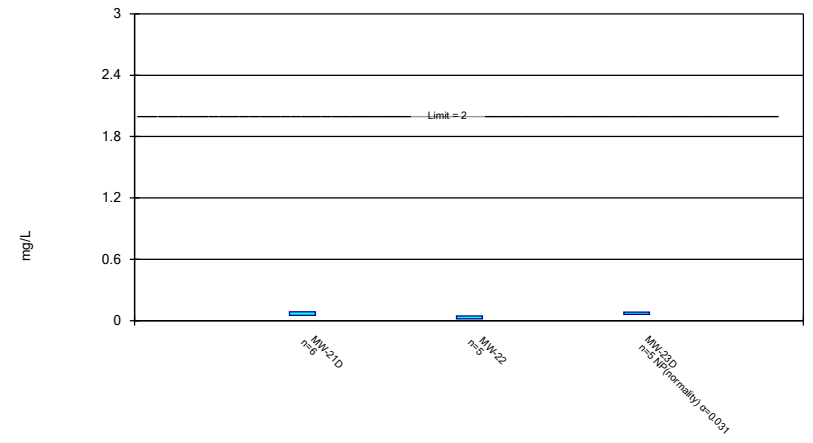
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

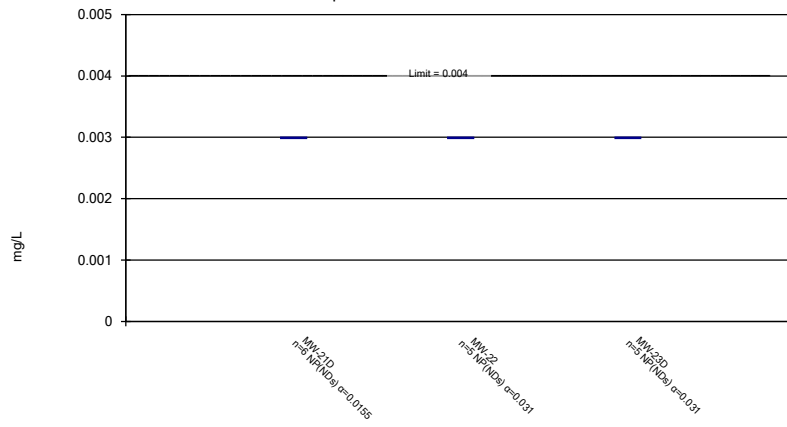
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

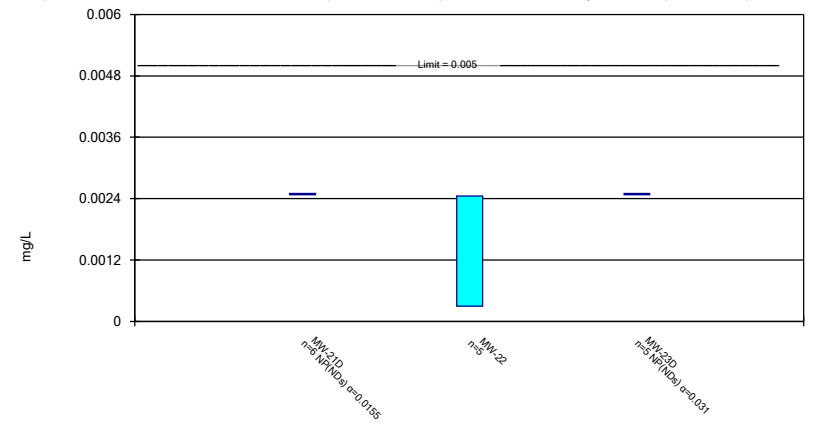
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

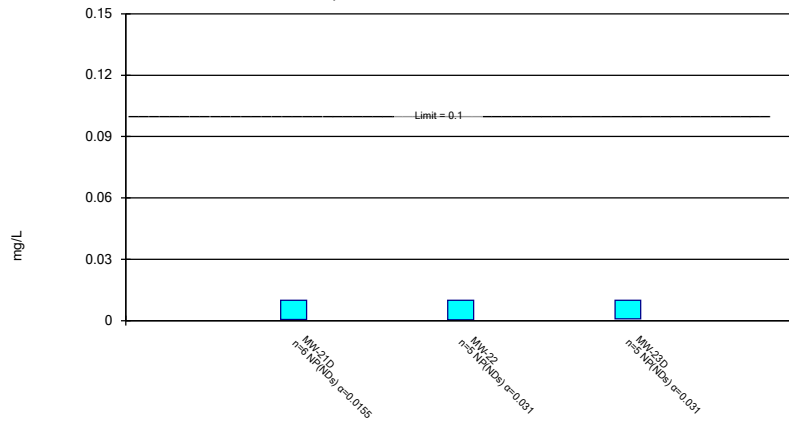
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

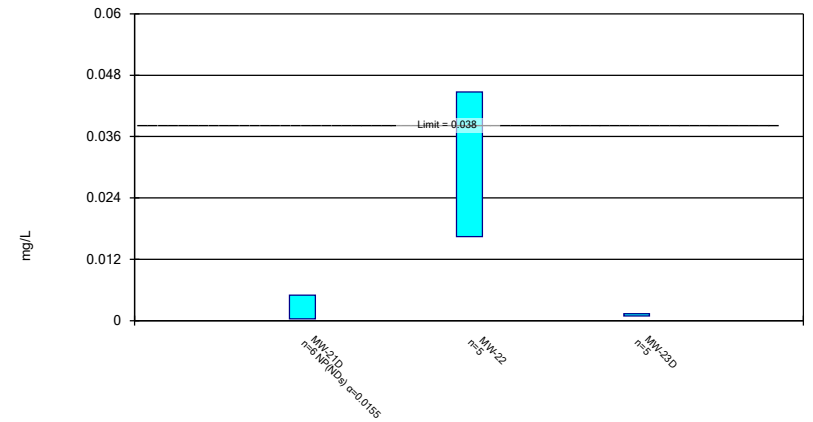
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

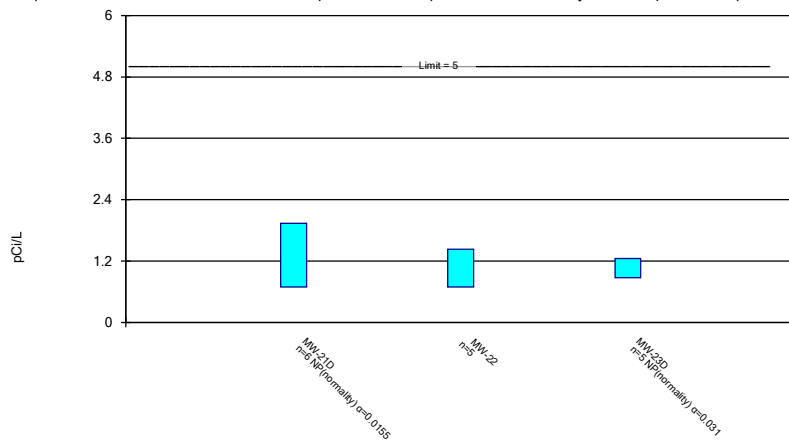
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

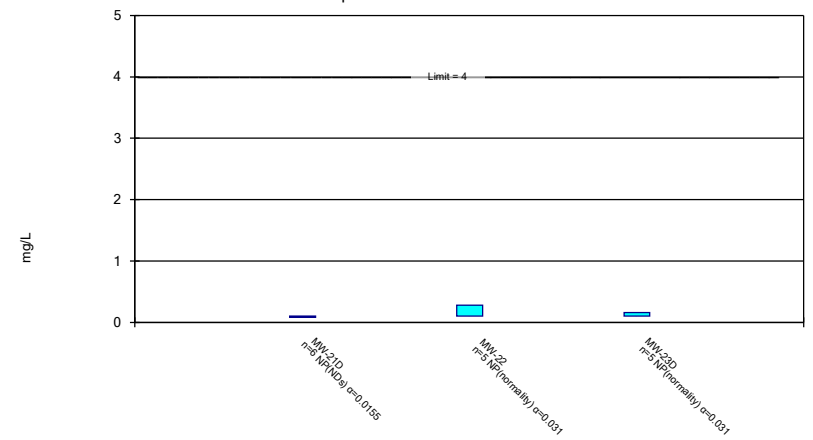
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals -
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

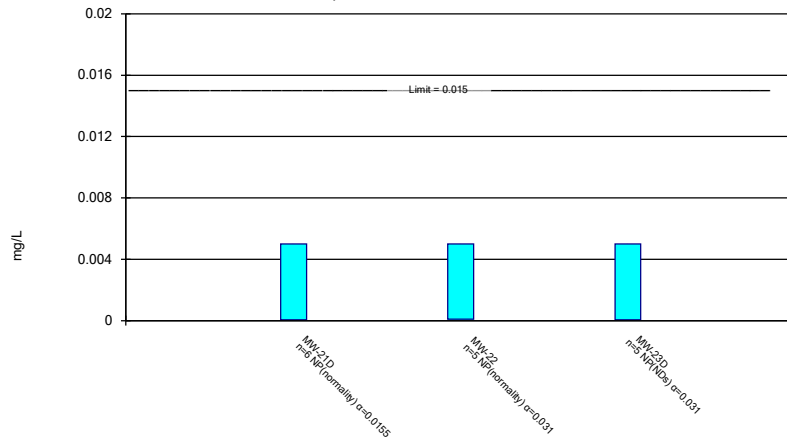
Compliance Limit is not exceeded.



Constituent: Fluoride Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

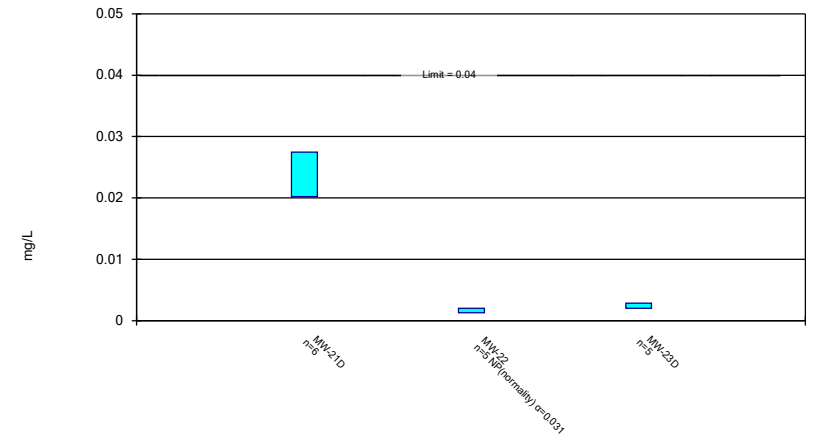
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

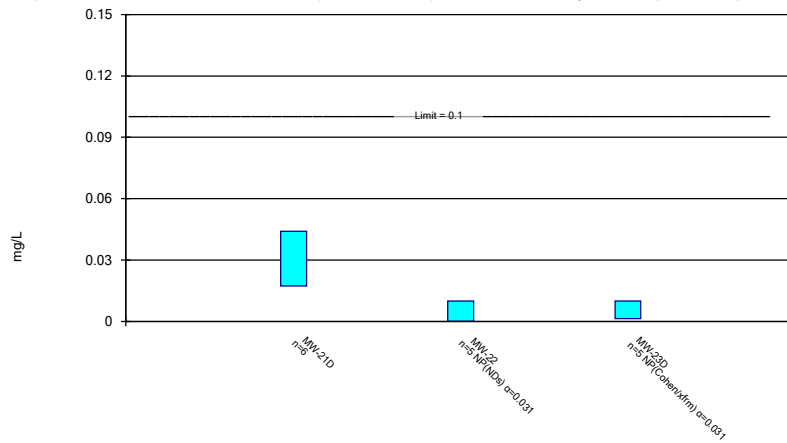
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Parametric and Non-Parametric (NP) Confidence Interval

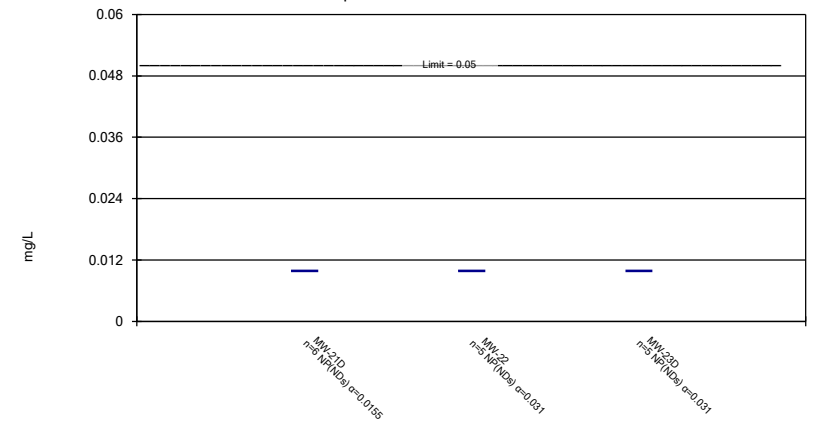
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

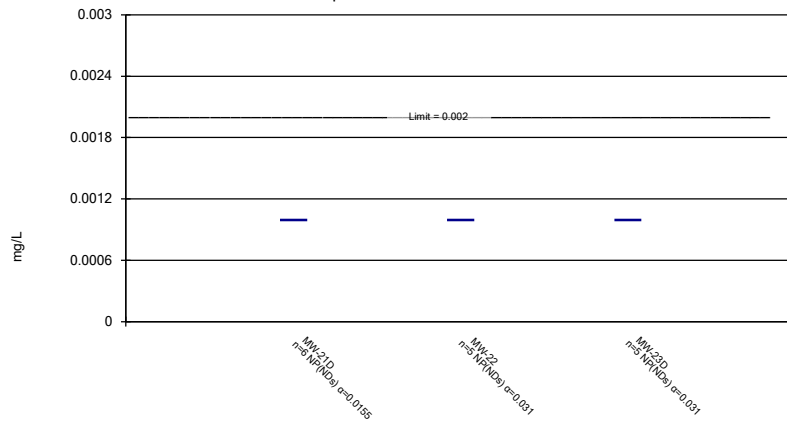
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 8/11/2020 10:16 AM View: Confidence Intervals - New Wells
Plant Hammond Client: Southern Company Data: Hammond AP-2