



GOLDER

REPORT

2020 Annual Groundwater Monitoring & Corrective Action Report

Georgia Power Company - Plant McDonough-Atkinson Ash Pond 1

Submitted to:



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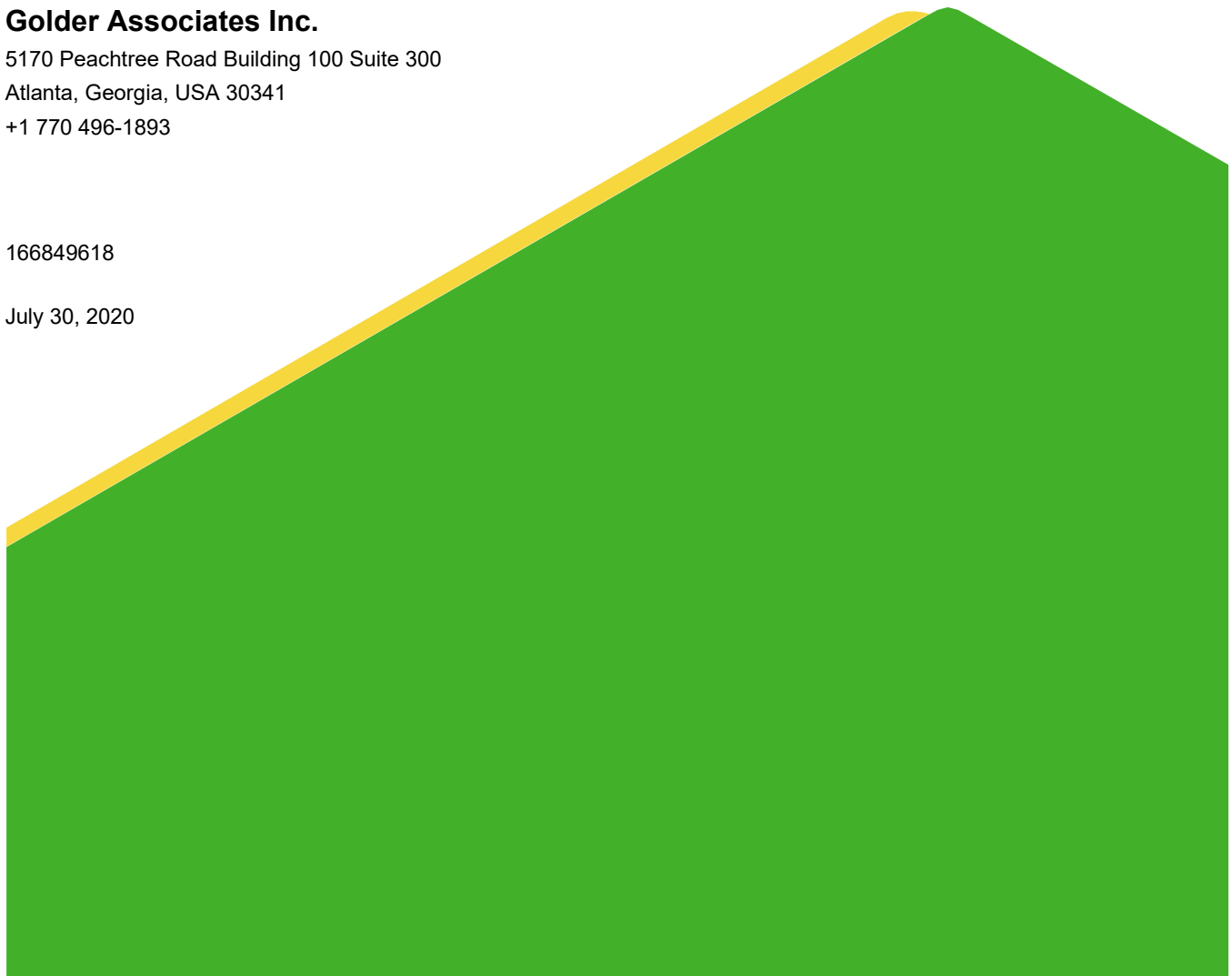


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This *2020 Annual Groundwater Monitoring & Corrective Action Report*, Georgia Power Company - Plant McDonough-Atkinson – Ash Pond 1 (AP-1) has been prepared in compliance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations (CFR) 257 Subpart D] and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 (6)(a-c) by a qualified groundwater scientist or engineer with Golder Associates Inc.

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1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D) and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10, this *2020 Annual Groundwater Monitoring and Corrective Action Report* was prepared to document groundwater monitoring activities conducted at Georgia Power Company's (GPC's) Plant McDonough Ash Pond 1 (AP-1) and satisfies the requirements of § 257.90(e). To specify groundwater monitoring requirements, GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the USEPA CCR rule (40 Code of Federal Regulations [CFR] 257 Subpart D). For ease of reference, the US EPA CCR rules are cited within this report.

This annual report documents the activities completed from July 2019 through July 2020. Three monitoring events were conducted during this period: an initial assessment monitoring event was conducted in August 2019 as a result of statistical exceedances during the first detection monitoring event, and two subsequent assessment events conducted in October 2019 and March 2020, which served as semi-annual compliance monitoring events.

1.1 Site Description and Background

Plant McDonough-Atkinson (Plant McDonough), formerly a coal-fired power generating facility, was converted to a natural gas combined-cycle power generating facility in 2011. Located approximately 7 miles northwest of Atlanta in southeast Cobb County (5551 South Cobb Dr SE, Atlanta, GA 30339), the property occupies approximately 390 acres and is bounded on the southeast by the Chattahoochee River. A site location map is included as Figure 1.

Four CCR surface impoundments are located on-site: Ash Pond 1 (AP-1), Ash Pond 2 (AP-2), Ash Pond 3 (AP-3) and Ash Pond 4 (AP-4). AP-3 and AP-4 have historically operated together and are being closed as a Combined Unit AP- 3/4. A notification of intent to initiate closure of the inactive CCR surface impoundment was certified on December 7, 2015 and posted to GPC's website. A permit application package for AP-1 was submitted to Georgia EPD in November 2018 and is currently pending revisions to address EPD comments.

Groundwater monitoring and reporting for AP-1 are being performed to meet the alternate schedule in § 257.100(e)(5) of the revised USEPA CCR rule (August 5, 2016).

1.2 Regional Geology and Hydrogeologic Setting

The following section and subsections include a general description of regional geologic and hydrogeologic characteristics of formations that occur beneath the site.

The site is located in the Piedmont/Blue Ridge geologic province, which contains some of the oldest rock formations in the southeastern United States. These late Precambrian to late Paleozoic rocks have undergone repeated cycles of igneous intrusions and extrusions, metamorphism, folding, faulting, shearing, and silicification. Rock outcrops near the site consist of biotite gneiss, porphyritic gneiss, mica schist, and quartzite.

Residual soils, primarily clayey/sandy silt, sandy silt with clay, and silty sand, occur as a variably thick blanket overlying bedrock across most of the site. These residual saprolitic soils along with saprolitic transitionally or partially weathered rock, collectively the overburden, range between approximately 9 to 61 feet in thickness across the site, with an average thickness of approximately 38 feet. Saprolitic rock is considered to be transitionally weathered rock or partially weathered rock (PWR). PWR is defined by Standard Penetration Test (SPT) blow counts that exceed 50 blows/six inches.

A regional, unconfined surficial aquifer system is present at the site, existing within the overburden and weathered and fractured upper bedrock (e.g., approximate first 30 feet), depending on topographic location. Recharge primarily occurs through precipitation and subsequent infiltration. Generally, groundwater flow occurs through intergranular pore spaces in the overburden and is controlled by topography and top of rock variations. However, a relatively higher transmissive zone is interpreted to occur at the base of the overburden, at the interface of weathered bedrock and competent bedrock and is believed to be the primary groundwater flow path. The overburden has an average horizontal hydraulic conductivity of 10^{-4} centimeters per second (cm/s) and is interpreted to flow south-southeast.

A limited and localized bedrock aquifer system also occurs beneath the site. The upper bedrock is fractured and weathered, connected hydraulically with the overburden groundwater, and is considered part of the upper aquifer. The overlying silt/clay-rich overburden may act to retard recharge into the bedrock aquifer system. However, deeper bedrock (i.e., approximately 30 feet into the bedrock) is unweathered with few discontinuities (e.g., fractures) available to store groundwater.

1.3 Groundwater Monitoring Network

Pursuant to § 257.91, a groundwater monitoring system was installed within the uppermost aquifer at AP-1 to monitor groundwater passing the waste boundary. Wells were located to monitor upgradient and downgradient groundwater conditions based on groundwater flow direction. The monitoring well network was certified by a Professional Engineer in Georgia on April 17, 2019, and the certification is maintained in the Operating Record pursuant to § 257.90(f).

The certified monitoring well network for AP-1 consists of three (3) upgradient monitoring wells and seven (7) downgradient monitoring wells (Figure 2). Table 1A includes well construction details for the AP-1 monitoring well network. Additionally, a series of piezometers were installed at AP-1 to measure groundwater elevations. Table 1B includes construction details for these piezometers.

2.0 GROUNDWATER MONITORING ACTIVITIES

The following section describes monitoring-related activities for sampling performed during August 2019, October 2019, and March 2020. Groundwater sampling was performed in accordance with 40 CFR § 257.93. Samples were collected from each well in the certified monitoring network. The location of each of these monitoring wells is shown on Figure 2. Table 2, Groundwater Sampling Event Summary, presents a summary of groundwater sampling events completed for AP-1 and the status of the monitoring network.

2.1 Monitoring Well Installation and Maintenance

There was no change to the certified groundwater monitoring system during this reporting period. Monitoring well related activities included visual inspection of well conditions prior to sampling, recording conditions around the well, and performing exterior maintenance to provide safe access for sampling.

Installation of additional site piezometers as part of ongoing site investigations have also been completed. Additional piezometers installed at Plant McDonough will be documented in a report, *Well Design, Installation, Development and Decommissioning Report-Georgia Power Company-Plant McDonough Atkinson-Ash Pond 1, Ash Pond 2, Ash Pond 3, and Ash Pond 4*. Due to the ongoing survey at Plant McDonough, this report will be submitted no later than August 31, 2020.

Monitoring well and piezometer construction details are presented on Tables 1A and 1B, respectively, and the locations of each are shown on Figures 2 and 3, respectively.

2.2 Assessment Monitoring

Pursuant to §257.94(e), an assessment monitoring program has been established for AP-1 at Plant McDonough based on the SSIs documented in the *2019 First Annual Groundwater Monitoring and Corrective Action Report*, (Golder, 2019). A notice of assessment monitoring was placed in the operating record on November 13, 2019.

Groundwater sampling events were conducted for AP-1 during August, October 2019, and March 2020. During the initial assessment monitoring event in August 2019, groundwater samples were collected and analyzed for the full suite of Appendix IV constituents to meet requirements of §257.95(b). During subsequent, October 2019 and March 2020, semi-annual sampling events, groundwater samples were collected for Appendix III parameters and those Appendix IV constituents detected during the August 2019 event. Results of sampling activities conducted in August 2019, October 2019 and March 2020 are presented in Appendix A, Analytical Data Summary, Analytical Results, Field Data Forms, and Data Validation Summaries.

3.0 SAMPLE METHODOLOGY AND ANALYSIS

Sampling events completed during this reporting period at AP-1 include the initial assessment monitoring event and two subsequent assessment monitoring events. Groundwater analytical data and chain of custody records are presented in Appendix A. The following sections describe methods used to conduct groundwater monitoring at the site.

3.1 Groundwater Elevation Measurement

Prior to each sampling event, groundwater elevations were recorded at each well and piezometer. Groundwater elevations data are summarized in Table 3. Calculated water level data were used to develop Figure 3A, Site Potentiometric Map – October 2019 and Figure 3B, Site Potentiometric Map – January 2020. Review of Figures 3A and 3B shows that groundwater generally flows west/southwest across the site and is consistent with historical observations.

3.2 Groundwater Gradient and Flow Velocity

Hydraulic gradient is calculated as the difference in groundwater elevation (in feet) divided by the distance between two piezometers or wells (in feet). Groundwater elevation data recorded in January 2020 from three piezometer/well pairings; B-29/DGWC-68A, B-28/DWGC-37, and B-50/DWGC-39, located along the groundwater flow path and perpendicular to the potentiometric contours were used to calculate hydraulic gradients for AP-1.

Average groundwater flow velocities at the site were calculated using hydraulic gradient data, hydraulic conductivity data generated from slug testing results, and an estimated effective porosity of the screened portion of the uppermost aquifer. Based on slug test data, the average hydraulic conductivity for the uppermost aquifer is 5.0×10^{-4} centimeters/second (cm/s), 8.4×10^{-4} cm/s in the overburden, and 1.6×10^{-4} cm/s in the upper bedrock, respectively. Assumed effective porosity of 0.2 (20%) for overburden was used based on the default values for effective porosity recommended by USEPA for a silty sand-type soil (USEPA, 1996). Assumed effective porosity of 0.09 (9%) was used for bedrock (Daniel and Dahlen, 2002; Dowd and Marshall, 1995). The hydraulic gradient calculated between well pairs is shown on Table 4A, Horizontal Groundwater Flow Velocity Calculations – October 2019 and Table 4B, Horizontal Groundwater Velocity Calculations – January 2020.

Horizontal flow velocity was calculated using the commonly used derivative of Darcy's Law:

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

Where:

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

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

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

n_e = Effective porosity

Using this equation, groundwater flow velocities were calculated for AP-1 using October 2019 and January 2020 groundwater elevation data. Table 4A and 4B presents the velocities calculated using groundwater elevation data from these sampling events.

Calculated (horizontal) flow velocities ranged from approximately 85 feet per year (ft/yr) to 151 ft/yr during the October 2019 event and from approximately 91 feet per year (ft/yr) to 161 ft/yr during the January 2020 event. These estimated flow velocities are consistent with past results and are also generally consistent with other published velocities for regolith-upper bedrock aquifers of the Piedmont (Heath, R.C., 1982).

3.3 Groundwater Sampling

Groundwater samples were collected in accordance with § 257.93(a) and using USEPA Region 4 Field Quality and Technical Procedures as a guide (USEPA, 2001). Monitoring wells were purged and sampled using low-flow sampling procedures. Non-dedicated, low-flow pneumatic bladder pumps and peristaltic pumps were used to purge and sample the wells. Field equipment was decontaminated prior to use and between wells using USEPA Science and Ecosystem Support Division (SESD) Operating Procedure for Field Equipment Cleaning and Decontamination as a guide (USEPA, 2015). A SmarTroll® (In-Situ® field instrument) was used to monitor and record field water quality parameters [temperature, specific conductance, dissolved oxygen (DO), pH, and oxidation-reduction potential (ORP)] during purging. Turbidity was monitored using a LaMotte 2020we turbidimeter. Groundwater samples were collected when the following stabilization criteria were met for a minimum of three consecutive readings:

- 0.1 standard units for pH
- 5% for specific conductance
- ±10% for DO where DO>0.5 mg/L; if DO<0.5 milligrams per liter (mg/L), no stabilization criteria apply
- Turbidity measurements less than 5 nephelometric turbidity units (NTU)

Any deviation from stabilization criteria, if applicable, is identified on field sampling forms. Where sample turbidity was greater than 5 NTU and all other stabilization criteria were met, samplers continued purging for up to 3 additional hours in order to reduce the turbidity to 5 NTU or less. If turbidity remained above 5 NTU, but was less than 10 NTU, and all other parameters were stabilized, the well was sampled. Where turbidity remained above 10 NTU, an unfiltered sample was collected followed by a filtered sample that passed through an in-line 0.45-micron filtered attached to the discharge (sample collection) tube. The unfiltered sample data are used for compliance monitoring and in the statistical analysis database. Filtered sample data are used to assess the impacts of

turbidity on groundwater quality. Additional details regarding filtered samples are recorded on the field information form and filtered samples are clearly identified as “filtered” on the laboratory reports.

Following well stabilization, unfiltered samples were collected directly into appropriately preserved laboratory supplied sample containers, placed in ice-packed coolers, and submitted to the laboratory following standard chain-of-custody protocol. Field information forms, generated directly from the SmarTroll®, and chain-of-custody records are included in Appendix A.

Environmental monitoring field data sheets are included with the analytical reports in Appendix A. Field data and sampling notes for each monitoring well are recorded on the field information forms, which contains a description of the sampling equipment, sampling method, purge rate, field observations, and depth to water measurements at each monitoring location.

3.4 Laboratory Analysis

Groundwater samples were collected during three groundwater monitoring events (August 2019, October 2019, and March 2020). Since AP-1 is currently in assessment monitoring, groundwater samples from wells in the assessment monitoring program were analyzed for Appendix III and the detected Appendix IV monitoring parameters per 40 CFR § 257 and § 261. Tables 5A, 5B and 5C, Analytical Data Summary, presents a tabulated summary of the August and October 2019 and March 2020 sample results, respectively. Analytical methods used for groundwater monitoring parameters can be found in the analytical data reports in Appendix A.

Laboratory analyses for all events were performed by Pace Analytical Services, LLC (Pace) in Norcross, Georgia. Pace is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintains NELAP certification for all parameters analyzed for this project. Groundwater data, chain-of-custody records, and NELAP certifications for the monitoring events are presented in Appendix A.

3.5 Quality Assurance and Quality Control

During each sampling event, quality assurance/quality control (QA/QC) samples were collected at a rate of one sample per every 10 samples. QA/QC samples included equipment blanks (where non-dedicated sampling equipment is used), field blanks, and duplicate samples. QA/QC sample data was evaluated during data validation (as described below) and is included in Appendix A.

Groundwater quality data in this report was independently validated in accordance with US EPA Region IV Data Validation Standard Operating Procedures (USEPA, 2011), National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017) and the analytical methods. Data validation generally consisted of reviewing sample integrity, holding times, laboratory method blanks, laboratory control samples, matrix spikes/matrix spike duplicate recoveries and relative percent differences (RPDs), laboratory and field duplicate RPDs, field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags were applied to the data per USEPA procedures (USEPA, 2017). Flagged data are identified in the statistical analysis reports in Appendix B and described in the following section.

A value followed by a "J" flag in tables and laboratory reports indicate that the value is an estimated analyte concentration detected between the method detection limit (MDL) and the laboratory reporting limit (RL). The estimated value is positively identified but is below the lowest level that can be reliably achieved within specified limits of precision and accuracy under routine laboratory operating conditions.

4.0 STATISTICAL ANALYSIS

Statistical analysis of Appendix III and Appendix IV groundwater monitoring data was performed pursuant to §257.93-95 following the established statistical method for AP-1.

4.1 Statistical Method

The selected statistical method for AP-1 was developed in accordance with 40 CFR § 257.93(f), using methodology presented in Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance, March 2009, USEPA 530/R-09-007 (Unified Guidance; USEPA, 2009). The Sanitas groundwater statistical software was used to perform 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 Unified Guidance (2009) document.

The following table provides a summary of the statistical methodology used at AP-1 for August 2019, October 2019, and March 2020 assessment monitoring.

PLANT MCDONOUGH AP-1 STATISTICAL METHOD SUMMARY		
Monitoring Well Network	Upgradient Wells	DGWA-53, DGWA-70A, DGWA-71
	Downgradient Wells	DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A, DGWC-69
CCR Monitoring Parameters	Appendix III (Detection Monitoring)	Boron, Calcium, Chloride, Fluoride, pH, Sulfate, TDS
	Appendix IV (Assessment Monitoring)	Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, Radium (226 + 228)
Statistical Methodology	Data Screening on Proposed Background	Evaluate outliers, trends, and seasonality when sufficient data are available.
	Statistical Limits	Interwell statistical limits will be applied on a constituent basis, depending on the appropriateness of the method as determined by the Analysis of Variance.
	Prediction Limits	Parametric when data follow a normal or transformed normal distribution and when less than 50% non-detects, utilizing Kaplan Meier non-detect adjustment when applicable; nonparametric when data sets contain greater than 50% non-detects or when data are not normally or transformed-normally distributed.
	Confidence Intervals	Used in Assessment and Corrective Action monitoring.
	No Statistical Testing	Statistical testing is not required for parameters with 100% non-detects.
	Verification Resample Plan (Optional)	1-of-2 with minimum of 8 samples per well for interwell testing. <ul style="list-style-type: none"> ▪ Initial statistical exceedance warrants independent resampling within 90 days. ▪ If resample passes, well/parameter is not considered a confirmed statistically significant increase (SSI). ▪ If resample exceeds, well/parameter has a confirmed SSI. ▪ If no resample is collected, the original result is deemed verified.

The following guidance are also applicable to the statistical analytical method:

- Statistical analyses are not performed on analytes containing 100% non-detects (USPEA Unified Guidance, 2009, Chapter 6).
- When data contain less than or equal to 15% no-detects in background, simple substitution of one-half the RL is utilized in the statistical analysis. The RL utilized for non-detects is the practical quantitation limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, a non-detect adjustment such as the Kaplan-Meier or Regression on Order Statistics (ROS) method for adjustment of the mean and standard deviation will be used prior to constructing a parametric prediction limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

4.1.1 Appendix III Detection Monitoring Statistical Methods

Appendix III Statistical Analyses Groundwater monitoring data was statistically evaluated through the use of interwell prediction limits. The Sen's Slope/Mann Kendall trend test was also performed to evaluate concentrations over time and determine whether concentrations are statistically increasing, decreasing, or stabilizing.

4.1.2 Appendix IV Assessment Monitoring Statistical Methods

Statistical analysis while in assessment monitoring is performed through the use of confidence intervals compared to a groundwater protection standard (GWPS). Parametric tolerance limits are used to calculate site specific background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. The background limits were then used when determining the GWPS under 40 CFR § 257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a). 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, Rule Specified Limits (RSLs) have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), or molybdenum (0.100 mg/L). These criteria are not currently adopted by Georgia EPD.
- The respective background level for a constituent when the background level is higher than the MCL or rule identified GWPS.

USEPA revised the CCR Rule on July 30, 2018, updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR § 257.95(h)(2). Presently those updated GWPS have not yet been incorporated in the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, under EPD rules, background concentrations are considered when determining the GWPS for constituents where an MCL has not been established (or where background is higher than the MCL). Under the existing 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 federal and state rule requirements, GWPSs were established for statistical comparison of Appendix IV constituents. Table 4.1.2, Summary of Background Levels and GWPSs, presented below, summarizes the background limit established at each monitoring well and the GWPS established under State and Federal rules.

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV parameters in each downgradient well. Those confidence intervals were compared to the GWPS established for both the State and Federal rules. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. If there is an exceedance of the established standard, a statistically significant level (SSL) exceedance is identified.

TABLE 4.1.2 Summary of Background Levels and GWPSs				
Analyte	Units	Maximum Contaminant Level (MCL)	Site Specific Background March 2020 ^[1]	GWPS ^[2]
Antimony	mg/L	0.006	0.0018	0.006
Arsenic	mg/L	0.01	0.0018	0.01
Barium	mg/L	2	0.19	2
Beryllium	mg/L	0.004	0.0015	0.004
Cadmium	mg/L	0.005	0.0005	0.005
Chromium	mg/L	0.1	0.0025	0.1
Cobalt	mg/L	NA	0.0322	0.0322
Fluoride	mg/L	4	0.42	4
Lead	mg/L	NA	0.0002	0.0002
Lithium	mg/L	NA	0.011	0.030 ^[3]
Mercury	mg/L	0.002	0.0001	0.002
Molybdenum	mg/L	NA	0.0409	0.0409
Radium (226 + 228)	pCi/L	5	6.19	6.19
Selenium	mg/L	0.05	0.00065	0.05
Thallium	mg/L	0.002	0.000078	0.002

Notes:

mg/L = milligrams per liter; pCi/L = picocuries per liter; NA = Not Available

[1] The background limits are used when determining the groundwater protection standard (GWPS) under 40 CFR § 257.95(h) and 391-3-4-.10(6)(a).

[2] Under existing EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL.

[3] The background tolerance limit (TL) used to evaluate GWPS for this analyte equals the laboratory specified reporting limit (RL). Per the Statistical Analysis Plan, and in accordance with the Unified Guidance, a non-parametric limit approach was used since the data set contains greater than 50% non-detect results for this analyte. Under this approach, the TL equals the highest value reported, for which is the laboratory RL. We also note that the values reported herein have been updated from the previously established GWPS which was determined based on estimated data. The modified GWPS also reflects additional outlier identification.

A summary table of the statistical results accompanies the prediction limits for Appendix III and confidence intervals for Appendix IV in Appendix B, Statistical Analyses. The background period for statistical analyses includes data through March 2020. Tolerance limits for confidence interval calculations are updated to include data through March 2020. Due to varying reporting limits in background, the most recent reporting limit is used when data is not reported above detection limits. This results in a more appropriate statistical test.

4.2 Statistical Analysis Results

Analytical data from October 2019 and March 2020 at AP-1 have been statistically analyzed in accordance with the site’s Statistical Analysis Plan. Resampling was conducted for selected wells in November and December 2019. The statistical results for both the October 2019 and March 2020 assessment monitoring events are included in Appendix B.

4.2.1 October 2019 Appendix III Statistical Results

Based on the statistical results presented in Appendix B, SSIs of boron, calcium, chloride, pH, sulfate, and total dissolved solids at various wells were identified following the October 2019 assessment monitoring event. A detailed list of the noted exceedances is provided in Appendix B.

Based on review of the Appendix III statistical analysis presented in Appendix B, Appendix III constituents have not returned to background levels and assessment monitoring will continue pursuant to 40 CFR § 257.95(f).

4.2.2 October 2019 Appendix IV Statistical Results

Analytical data from the October 2019 monitoring event at AP-1 have been statistically analyzed in accordance with the certified statistical analysis method. Review of the Sanitas results indicates that using the GWPS established according to both 40 CFR § 257.95(h) and 391-3-4-.10(6)(a), the following SSLs were identified:

AP-1 Confidence Interval Statistically Significant Level Exceedances	
Appendix IV Parameter	AP-1 Monitoring Well
Cobalt	DGWC-40
Molybdenum	DGWC-68A

4.2.3 March 2020 Appendix III Statistical Results

Based on the statistical results presented in Appendix B, SSIs of boron, calcium, chloride, pH, sulfate, and total dissolved solids were identified following the March 2020 assessment monitoring event. A detailed list of the noted exceedances is presented in Appendix B.

Based on review of the Appendix III statistical analysis presented in Appendix B, Appendix III constituents have not returned to background levels and assessment monitoring will continue pursuant to 40 CFR § 257.95(f)

4.2.4 March 2020 Appendix IV Statistical Results

Analytical data from the March 2020 monitoring event at AP-1 have been statistically analyzed in accordance with the certified statistical analysis method. Review of the Sanitas results indicates that using the GWPS established according to both 40 CFR § 257.95(h) and 391-3-4-.10(6)(a), the following SSLs were identified:

AP-1 Confidence Interval Statistically Significant Level Exceedances	
Appendix IV Parameter	AP-1 Monitoring Well
Cobalt	DGWC-40
Molybdenum	DGWC-68A

4.3 Alternate Source Demonstration

Pursuant to the options of 40 CFR § 257.95 as adopted by 391-3-4-.10, Plant McDonough is evaluating alternate sources for the identified SSLs, namely cobalt and molybdenum at AP-1.

4.4 Assessment of Corrective Measures

Following the requirements of 40 CFR § 257.96, Plant McDonough has initiated an Assessment of Corrective Measures (ACM). Notification of this action was placed in the operating record on July 9, 2020.

5.0 MONITORING PROGRAM STATUS

Statistical evaluations of the groundwater monitoring data for AP-1 confirms SSIs of Appendix III groundwater monitoring parameters above background and SSLs of Appendix IV groundwater monitoring parameters above the established GWPS. However, an Alternate Source Demonstration is being evaluated for the cobalt SSL observed at the site. Based on the results of the October 2019 and March 2020 sampling events, AP-1 will remain in assessment monitoring and an assessment of corrective measures has been initiated following the provisions of 40 CFR § 257.96.

6.0 CONCLUSIONS AND FUTURE ACTIONS

This 2020 Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Plant McDonough-Atkinson - Ash Pond 1 (AP-1) was prepared to fulfill the requirements of USEPA CCR rule 40 CFR 257 Subpart D and Georgia EPD rule 391-3-4-.10.

The groundwater flow direction interpreted during October 2019 and January 2020 events is consistent with historical evaluations and the monitoring well network continues to effectively monitor the uppermost aquifer beneath AP-1.

Review of analytical results and statistical analyses developed for the site indicates confirmed SSIs of Appendix III above background and SSLs of Appendix IV above the established GWPS. Plant McDonough is currently evaluating an Alternate Source Demonstration following the rule and timelines specified in 40 CFR 257.95. In accordance with 40 CFR § 257.96, GPC has initiated an assessment of corrective measures study for the identified SSLs.

Based on the findings presented herein, Plant McDonough will continue with assessment groundwater monitoring and reporting. The next sampling event is tentatively scheduled for the third quarter of 2020.

7.0 REFERENCES

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Tables & Figures

TABLE 1A
MONITORING WELL NETWORK SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well-ID	Former Well-ID	Boring ID	Hydraulic Location	Geologic Unit Screened	Northing	Easting	Top of Casing Elevation (feet)	Ground Surface Elevation (feet)	Total Depth (feet bgs)	Top of Screen Elevation (feet)	Bottom of Screen Elevation (feet)	Date of Installation
ASH POND 1 (AP-1) MONITORING WELL NETWORK												
DGWA-53	B-53	B-53	Upgradient	Upper Bedrock	1393475.82	2201668.95	850.74	847.24	28.9	830	820	9/24/2016
DGWA-70A	B-70A	B-70A	Upgradient	Overburden	1390481.13	2200590.67	808.60	805.45	58.9	757	747	5/10/2017
DGWA-71	B-71	B-71	Upgradient	Overburden	1393965.35	2201713.63	863.95	861.05	43.4	828	818	2/28/2017
DGWC-37	B-37	B-37	Downgradient	Overburden	1390483.94	2200919.39	766.19	763.6	39.7	734	724	11/28/2012
DGWC-38	B-38	B-38	Downgradient	Overburden	1390364.53	2201147.65	757.44	754.7	25.0	740	730	11/29/2012
DGWC-39	B-39	B-39	Downgradient	Overburden	1390303.39	2201538.45	759.67	756.9	21.2	746	736	11/6/2012
DGWC-40	B-40	B-40	Downgradient	Overburden	1390625.63	2201826.76	779.07	775.5	34.9	751	741	11/5/2012
DGWC-67	B-67	B-67	Downgradient	Overburden	1390954.46	2200828.90	766.76	766.34	56.3	720	710	3/14/2017
DGWC-68A	B-68A	B-68A	Downgradient	Overburden	1391301.86	2200732.41	765.61	765.00	29.4	746	736	4/20/2017
DGWC-69	B-69	B-69	Downgradient	Overburden	1391584.72	2200656.14	763.82	763.93	24.3	750	740	3/16/2017

Notes:

1. bgs = below ground surface
2. Coordinate System: NAD 1983 State Plane Georgia West (U.S. feet)
3. NAD - North American Datum; NAVD - North American Vertical Datum

TABLE 1B
PIEZOMETER SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well-ID	Former Well-ID	Boring ID	Geologic Unit Screened	Northing	Easting	Top of Casing Elevation (feet)	Ground Surface Elevation (feet)	Total Depth (feet bgs)	Top of Screen Elevation (feet)	Bottom of Screen Elevation (feet)	Date of Installation
PIEZOMETER NETWORK											
B-3	B-3	B-3	Overburden/Upper Bedrock	1394043.54	2202411.14	837.82	834.5	37.0	808	798	10/3/2012
B-6	B-6	B-6	Overburden	1394422.57	2203265.55	789.49	785.9	35.4	761	751	10/9/2012
B-7	B-7	B-7	Overburden	1394373.41	2203595.17	809.24	805.4	25.2	791	781	10/9/2012
B-16	B-16	B-16	Overburden	1392596.21	2203313.21	826.50	823.6	43.7	790	780	12/19/2012
B-18	B-18	B-18	Overburden	1392521.15	2202874.99	826.54	823.9	32.6	801	791	1/10/2013
B-20	DGWC-20	B-20	Overburden	1392164.35	2202315.15	822.16	819.8	39.7	791	781	3/5/2013
B-21	DGWC-21	B-21	Overburden/Upper Bedrock	1392068.12	2202062.54	816.33	813.5	69.0	755	745	10/31/2012
B-22	DGWC-22	B-22	Upper Bedrock	1392124.82	2201790.51	816.64	813.1	60.0	763	753	10/25/2012
B-24	B-24	B-24	Upper Bedrock	1392480.23	2201451.51	822.27	818.7	79.1	750	740	10/24/2012
B-25	B-25	B-25	Upper Bedrock	1392813.23	2201504.19	836.62	833.1	54.8	789	779	10/24/2012
B-26	DGWA-26	B-26	Upper Bedrock	1393106.18	2201551.86	853.67	850.2	49.3	811	801	10/23/2012
B-28	B-28	B-28	Overburden/Upper Bedrock	1391970.42	2201677.59	816.10	812.8	69.4	754	744	10/31/2012
B-29	B-29	B-29	Overburden	1391891.93	2201420.25	816.45	813.5	54.4	769	759	1/11/2013
B-31	B-31	B-31	Upper Bedrock	1392035.97	2202926.82	797.42	794.8	45.1	760	750	1/22/2013
B-41	B-41	B-41	Overburden	1390922.38	2201749.84	795.22	792.4	60.0	743	733	11/14/2012
B-50	B-50	B-50	Overburden	1391656.94	2201839.72	809.78	806.28	35.2	781	771	6/24/2016
B-51	B-51	B-51	Overburden	1390501.61	2200904.19	765.93	763.00	66.0	708	698	6/27/2016
B-52	B-52	B-52	Overburden	1392309.40	2201314.05	823.22	820.07	50.0	781	771	9/28/2016
B-54	B-54	B-54	Overburden/Upper Bedrock	1394424.75	2203140.27	785.59	782.09	34.2	758	748	9/26/2016
B-55	B-55	B-55	Overburden	1394143.23	2204146.61	825.11	821.96	52.0	781	771	9/22/2016
B-56	B-56	B-56	Overburden	1393958.64	2204186.27	823.70	820.55	45.0	786	776	10/3/2016
B-57	B-57	B-57	Upper Bedrock	1391397.46	2202735.64	789.22	785.76	50.5	746	736	9/24/2016
B-58	B-58	B-58	Overburden	1391126.84	2202425.23	788.20	784.90	45.0	750	740	9/23/2016
B-59	B-59	B-59	Overburden/Upper Bedrock	1394349.80	2203000.17	788.16	785.30	30.2	765	755	9/23/2016
B-60	B-60	B-60	Overburden	1391101.88	2202880.57	782.12	778.87	49.8	740	730	9/29/2016
B-61	B-61	B-61	Overburden	1390958.73	2202504.81	782.03	778.58	52.4	737	727	9/29/2016
B-62	B-62	B-62	Upper Bedrock	1389828.91	2201810.02	763.34	759.94	39.9	730	720	10/4/2016
B-63	B-63	B-63	Overburden	1390999.47	2202976.11	777.15	777.45	46.0	742	732	10/6/2016
B-64	B-64	B-64	Overburden	1394383.12	2203029.71	786.02	785.85	30.4	766	756	11/2/2016
B-65	B-65	B-65	Overburden/Upper Bedrock	1394382.64	2204049.66	822.02	822.27	45.4	788	778	11/15/2016
B-66	B-66	B-66	Overburden	1393860.16	2204276.73	815.96	813.06	55.3	768	758	11/16/2016
B-68	DGWC-68	B-68	Overburden	1391299.56	2200714.04	758.73	758.56	18.0	751	741	3/16/2017
B-77	B-77	B-77	Overburden	1390949.76	2202941.41	776.75	777.06	42.5	744.56	734.56	9/17/2019
B-78	B-78	B-78	Overburden/Upper Bedrock	1394327.62	2202958.92	790.65	787.31	30	767.31	757.31	9/22/2019
B-79	B-79	B-79	Overburden	1394458.16	2203223.8	788.55	785.5	35	760.5	750.5	9/21/2019
B-80	B-80	B-80	Overburden	1394373.86	2203534.26	804.45	801.52	30	781.52	771.52	9/20/2019
B-81	B-81	B-81	Overburden	1394366.17	2203741.53	820.51	816.75	50	776.75	766.75	9/22/2019
B-82	B-82	B-82	Overburden	1393750.42	2204256.96	809.98	807.15	45	772.15	762.15	9/21/2019
B-83	B-83	B-83	Overburden	1390736.31	2202695.17	776.89	777.05	50	737.05	727.05	9/30/2019
B-84	B-84	B-84	Overburden	1390411.65	2202242.51	776.24	776.27	50	736.27	726.27	10/1/2019
B-85	B-85	B-85	Overburden	1394433.14	2203135.02	782.67	782.8	34.5	758.3	748.3	11/18/2019
B-86	B-86	B-86	Overburden	1394479.84	2203207.19	784.4	784.5	34.1	760.4	750.4	11/18/2020
B-87	B-87	B-87	Overburden	1394401.16	2203531.64	803.54	800.4	42	768.4	758.4	11/17/2019
B-88	B-88	B-88	Overburden	1394400.23	2203738.46	820.11	816.6	72	754.6	744.6	11/15/2019
B-89	B-89	B-89	Overburden	1394399.07	2204048.84	822.5	822.5	32.2	800.3	790.3	11/19/2019
B-90	B-90	B-90	Overburden	1394500.73	2203212.95	784.18	784.2	33.4	760.8	750.8	12/10/2019
B-91	B-91	B-91	Overburden	1394447.87	2203124.3	783.07	783.1	35	758.1	748.1	12/11/2019
B-92	B-92	B-92	Overburden	1394393.54	2203026.6	785.22	785.3	25	770.3	760.3	12/11/2019
B-93	B-93	B-93	Overburden	1394348.37	2202947.29	789.14	789.2	29.2	770	760	12/12/2019
B-94	B-94	B-94	Overburden	1394401.28	2203514.11	801.9	798.42	45.24	763.18	753.18	1/23/2020
B-95	B-95	B-95	Overburden	1394519.76	2203167.40	784.16	784.18	33.3	760.88	750.88	2/11/2020
B-96	B-96	B-96	Overburden	1394479.77	2203099.02	785.06	784.96	33.1	761.86	751.86	2/10/2020
B-97	B-97	B-97	Upper Bedrock	1394430.96	2203008.14	786.46	785.06	31.7	763.36	753.36	2/11/2020
B-98	B-98	B-98	Overburden	1394393.03	2202934.89	789.58	789.68	19.4	780.28	770.28	2/10/2020

Notes:

- bgs = below ground surface; msl = mean sea level
- B-26 and B-68 are not used as monitoring wells due to well replacement, proximity to closure activities, or modifications to the proposed well network.
- Coordinate System: NAD 1983 State Plane Georgia West (U.S. feet). NAD = North American Datum; NAVD - North American Vertical Datum

TABLE 2
GROUNDWATER SAMPLING EVENT SUMMARY
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Hydraulic Location	Summary of Sampling Events				SSL Exceedance	Status of Monitoring Well
		August 2019	October 2019	March 2020			
Purpose of Sampling Event		Annual Appendix IV Scan	Detection/ Assessment	Detection/ Assessment			
ASH POND 1 (AP-1) MONITORING WELL NETWORK							
DGWA-53	Upgradient	Scan01	A01	A02	No	Assessment	
DGWA-70A	Upgradient	Scan01	A01	A02	No	Assessment	
DGWA-71	Upgradient	Scan01	A01	A02	No	Assessment	
DGWC-37	Downgradient	Scan01	A01	A02	No	Assessment	
DGWC-38	Downgradient	Scan01	A01	A02	No	Assessment	
DGWC-39	Downgradient	Scan01	A01	A02	No	Assessment	
DGWC-40	Downgradient	Scan01	A01	A02	Yes	Assessment	
DGWC-67	Downgradient	Scan01	A01	A02	No	Assessment	
DGWC-68A	Downgradient	Scan01	A01	A02	Yes	Assessment	
DGWC-69	Downgradient	Scan01	A01	A02	Yes	Assessment	

Notes:

1. Scan## = Annual Appendix IV Scan
2. A## = Assessment Monitoring Event Number

TABLE 3
SUMMARY OF GROUNDWATER ELEVATIONS
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Top of Casing Elevation (feet)	GROUNDWATER ELEVATIONS (feet)		
		8/26/2019	10/14/2019	1/14/2020
ASH POND 1 (AP-1) MONITORING WELLS				
DGWA-53	850.74	834.88	835.51	837.22
DGWA-70A	808.60	768.16	765.92	767.49
DGWA-71	863.95	835.40	834.53	835.60
DGWC-37	766.19	752.34	752.20	753.49
DGWC-38	757.44	750.73	750.53	751.58
DGWC-39	759.67	750.54	749.90	753.02
DGWC-40	779.07	759.01	757.60	761.45
DGWC-67	766.76	756.64	756.54	757.84
DGWC-68A	765.61	755.35	755.32	757.10
DGWC-69	763.82	757.77	757.63	758.95
ASH POND 2 and ASH PONDS 3/4 (AP-2, 3/4) MONITORING WELLS				
DGWA-53	850.74	834.88	835.51	837.22
DGWA-70A	808.60	768.16	765.92	767.49
DGWA-71	863.95	835.40	834.53	835.60
DGWC-2	850.93	820.06	819.89	819.89
DGWC-4	814.87	791.98	791.36	793.00
DGWC-5	791.84	782.57	782.13	784.04
DGWC-8	826.50	794.48	793.75	794.84
DGWC-9	824.39	799.25	797.57	802.36
DGWC-10	823.60	792.55	793.59	800.27
DGWC-11	800.64	786.81	787.22	792.99
DGWC-12	773.90	764.43	764.79	767.09
DGWC-13	793.90	760.69	759.94	760.86
DGWC-14	792.36	771.29	770.91	772.11
DGWC-15	824.53	784.94	784.52	784.77
DGWC-17	837.10	806.61	806.17	806.45
DGWC-19	825.53	803.21	802.51	802.68
DGWC-20	822.16	798.98	798.56	799.97
DGWC-21	816.33	798.22	796.96	797.56
DGWC-22	816.64	797.05	796.36	798.14
DGWC-23	818.59	798.64	797.77	802.51
DGWC-42	804.73	772.36	771.96	773.63
DGWC-47	797.50	774.51	773.79	780.89
DGWC-48	788.34	769.69	768.34	774.13
PIEZOMETERS				
B-3	837.82	803.77	803.22	803.53
B-6	789.49	784.15	783.89	784.89
B-7	809.24	788.36	787.60	788.39
B-16	826.50	796.05	795.20	797.10
B-18	826.54	807.50	806.93	807.43
B-24	822.27	803.09	801.61	804.72
B-25	836.62	819.20	817.71	824.32
B-26	853.67	826.25	824.82	827.34

TABLE 3
SUMMARY OF GROUNDWATER ELEVATIONS
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Top of Casing Elevation (feet)	GROUNDWATER ELEVATIONS (feet)		
		8/26/2019	10/14/2019	1/14/2020
B-28	816.10	786.52	785.52	789.01
B-29	816.45	787.99	786.97	790.48
B-31	797.42	763.61	763.07	764.68
B-41	795.22	768.70	767.98	770.52
B-50	809.78	780.34	780.17	782.86
B-51	765.93	753.00	752.80	756.25
B-52	823.22	796.58	794.51	796.11
B-54	785.59	779.46	779.47	780.46
B-55	825.11	802.68	803.89	806.36
B-56	823.70	794.91	794.27	798.04
B-57	789.22	767.91	766.19	768.32
B-58	788.20	765.57	763.75	766.05
B-59	788.16	780.40	780.31	781.59
B-60	782.12	749.91	748.89	750.32
B-61	782.03	759.78	758.06	760.52
B-62	763.34	746.21	745.32	751.17
B-63	777.15	746.85	746.64	748.60
B-64	786.02	779.69	779.66	781.08
B-65	822.02	803.79	803.22	804.70
B-66	815.96	794.79	796.11	801.45
B-68	758.73	754.84	754.81	756.25
B-76	760.31	--	743.2	746.4
B-77	776.75	--	745.23	748.25
B-78	790.65	--	779.94	781.6
B-79	788.55	--	781.71	782.63
B-80	804.45	--	786.97	787.97
B-81	820.51	--	788.8	789.12
B-82	809.98	--	797.42	801.08
B-83	776.89	--	744.01	746.14
B-84	776.24	--	740.54	746.12
B-85	782.67	--	--	780.4
B-86	784.40	--	--	783.49
B-87	803.54	--	--	787.98
B-88	820.11	--	--	788.64
B-89	822.50	--	--	800.72
B-90	784.18	--	--	783.3
B-91	783.07	--	--	780.17
B-92	785.22	--	--	781.34
B-93	789.14	--	--	784.28
B-94	801.90	--	--	--

TABLE 3
SUMMARY OF GROUNDWATER ELEVATIONS
Georgia Power Company - Plant McDonough
Atlanta, GA

Well ID	Top of Casing Elevation (feet)	GROUNDWATER ELEVATIONS (feet)		
		8/26/2019	10/14/2019	1/14/2020
B-95	784.16	--	--	--
B-96	785.06	--	--	--
B-97	786.46	--	--	--
B-98	789.58	--	--	--

Notes:

1. msl = mean sea level
2. NM = Not Measured

**TABLE 4A
HORIZONTAL GROUNDWATER FLOW VELOCITY CALCULATIONS - OCTOBER 2019**

**Georgia Power Company - Plant McDonough
Atlanta, GA**

Flow Paths	Groundwater Elevation (feet msl)	Δh (feet) ¹	Δl (feet) ²	Hydraulic Gradient ($\Delta h/\Delta l$) ³	Average Hydraulic Conductivity, K (centimeter per second) ⁵	Assumed Effective Porosity (n_e) ⁶		Average Linear Groundwater Velocity	
								(feet per day) ⁴	(feet per year) ⁴
ASH POND 1 (AP-1)									
B-29/DGWC-68A	786.67	31.35	900	0.035	0.00084	0.2	0.09	0.41	151
	755.32								
B-28/DGWC-37	785.52	33.32	1700	0.020	0.00084	0.2	0.09	0.23	85
	752.20								
B-50/DGWC-39	780.17	30.27	1400	0.022	0.00084	0.2	0.09	0.26	94
	749.9								

Notes:

1. Δh = Change in groundwater elevation
2. Δl = Distance along flow path
3. $I = \Delta h / \Delta l$
4. Velocity = $(I * K)/n_e$
5. Hydraulic conductivity based on historic aquifer performance tests
6. Assumed effective porosities for overburden was based on the default values recommended by USEPA for a silty sand-type soil (1996).

**TABLE 4B
HORIZONTAL GROUNDWATER FLOW VELOCITY CALCULATIONS - JANUARY 2020**

**Georgia Power Company - Plant McDonough
Atlanta, GA**

Flow Paths	Groundwater Elevation (feet msl)	Δh (feet) ¹	Δl (feet) ²	Hydraulic Gradient ($\Delta h/\Delta l$) ³	Average Hydraulic Conductivity, K (centimeter per second) ⁵	Assumed Effective Porosity (n_e) ⁶	Average Linear Groundwater Velocity	
							(feet per day) ⁴	(feet per year) ⁴
ASH POND 1 (AP-1)								
B-29 / DGWC-68A	790.48	33.38	900	0.037	0.00084	0.2	0.44	161
	757.1							
B-28 / DGWC-37	789.01	35.52	1700	0.021	0.00084	0.2	0.25	91
	753.49							
B-50 / DGWC-39	782.86	29.84	1400	0.021	0.00084	0.2	0.25	93
	753.02							

Notes:

1. Δh = Change in groundwater elevation
2. Δl = Distance along flow path
3. $I = \Delta h / \Delta l$
4. Velocity = $(I * K)/n_e$
5. Hydraulic conductivity based on historic aquifer performance tests
6. Assumed effective porosities for overburden was based on the default values recommended by USEPA for a silty sand-type soil (1996).

TABLE 5A
ANALYTICAL DATA SUMMARY
Ash Pond 1 - Annual Appendix IV - August 2019
Georgia Power Company - Plant McDonough
Atlanta, GA

Substance	MCL/ (SMCL)	Units	Well ID									
			DGWA-53	DGWA-70A	DGWA-71	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
			8/28/2019	8/27/2019	8/27/2019	8/28/2019	8/28/2019	8/28/2019	8/28/2019	8/28/2019	8/28/2019	8/28/2019
Appendix III												
BORON, TOTAL	N/R	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
CALCIUM, TOTAL	N/R	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
CHLORIDE, TOTAL	(250)	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
FLUORIDE, TOTAL	4	mg/L	0.42	< 0.029	< 0.029	0.074 J	0.066 J	0.086 J	0.14	< 0.05	0.1	0.07 J
pH	(250)	S.U.	6.04	5.53	5.87	6.27	5.98	6.41	4.68	6.22	6.6	6.09
SULFATE, TOTAL	N/R	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
TOTAL DISSOLVED SOLIDS	(500)	mg/L	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Appendix IV												
ANTIMONY, TOTAL	0.006	mg/L	< 0.00027	< 0.00027	< 0.00027	< 0.00027	< 0.00027	< 0.00027	< 0.00027	< 0.00027	< 0.00027	< 0.00027
ARSENIC, TOTAL	0.01	mg/L	< 0.00035	< 0.00035	< 0.00035	< 0.00035	< 0.00035	< 0.00035	< 0.00035	< 0.00035	< 0.00035	0.025
BARIIUM, TOTAL	2	mg/L	0.087	0.037	0.027	0.086	0.033	0.099	0.017	0.11	0.089	0.061
BERYLLIUM, TOTAL	0.004	mg/L	< 0.000074	0.000079 J	< 0.000074	0.000086 J	< 0.000074	< 0.000074	0.0032	< 0.000074	< 0.000074	< 0.000074
CADMIUM, TOTAL	0.005	mg/L	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.0003 J	< 0.00011	0.00087 J	0.00017 J	0.00017 J	< 0.00011
CHROMIUM, TOTAL	0.1	mg/L	< 0.00039	0.00071 J	0.0018 J	< 0.00039	< 0.00039	< 0.00039	0.00061 J	< 0.00039	< 0.00039	0.00049 J
COBALT, TOTAL	N/R	mg/L	0.013	< 0.0003	< 0.0003	< 0.0003	0.0016 J	0.0067	0.044	0.0013 J	< 0.0003	< 0.0003
FLUORIDE, TOTAL	4	mg/L	0.42	< 0.029	< 0.029	0.074 J	0.066 J	0.086 J	0.14	< 0.05	0.1	0.07 J
LEAD, TOTAL	0.015	mg/L	< 0.000046	0.000078 J	< 0.000046	0.000061 J	< 0.000046	0.00008 J	0.000081 J	< 0.000046	< 0.000046	< 0.000046
LITHIUM, TOTAL	N/R	mg/L	0.0092 J	< 0.00078	0.0014 J	0.0025 J	0.0034 J	< 0.00078	0.0022 J	0.0046 J	< 0.00078	0.0024 J
MERCURY, TOTAL	0.002	mg/L	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014
MOLYBDENUM, TOTAL	N/R	mg/L	0.031	< 0.00095	< 0.00095	< 0.00095	< 0.00095	< 0.00095	< 0.00095	< 0.00095	0.21	0.0059 J
RADIUM (226 + 228)	5	pCi/L	2.68	1.97	1.3 U	1.24 U	0.517 U	1.15 U	0.592 U	0.751 U	1.77	1.38
SELENIUM, TOTAL	0.05	mg/L	< 0.0013	< 0.0013	< 0.0013	< 0.0013	< 0.0013	< 0.0013	0.0017 J	< 0.0013	< 0.0013	< 0.0013
THALLIUM, TOTAL	0.002	mg/L	< 0.000052	< 0.000052	< 0.000052	< 0.000052	0.00014 J	0.000069 J	0.00007 J	< 0.000052	< 0.000052	< 0.000052

Notes:

1. mg/L - Milligrams per Liter
2. pCi/L - picocuries per Liter
3. MCL/SMCL - Maximum Contaminant Level/Secondary Contaminant Level - United States Environmental Protection Agency (USEPA) Table of Regulated Drinking Water Contaminants (updated June 2016). Available at <https://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants>. USEPA Secondary Drinking Water Standards: Guidance for Nuisance Chemicals (updated January 2016). Available at <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>. N/R indicates constituent does not have an established Maximum Contaminant Limit.
4. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
5. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
6. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed

TABLE 5B
ANALYTICAL DATA SUMMARY
Ash Pond 1 - Compliance Monitoring Event-October 2019
Georgia Power Company - Plant McDonough
Atlanta, GA

Substance	MCL/ (SMCL)	Units	Well ID									
			DGWA-53	DGWA-70A	DGWA-71	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
			10/16/2019	10/15/2019	10/15/2019	10/18/2019	10/18/2019	10/18/2019	10/18/2019	10/17/2019	10/16/2019	10/16/2019
Appendix III												
BORON, TOTAL	N/R	mg/L	0.059	< 0.0049	0.0054 J	1.3	3.1	3.6	0.9	3.6	1.5	0.38
CALCIUM, TOTAL	N/R	mg/L	17.7	5.1	5.1	48.8	83.8	95.0	43.7	42.4	49.7	16.2
CHLORIDE, TOTAL	(250)	mg/L	2	2.2	3.3	5.8	8.6	8	19.2	6.9	4.2	4.7
FLUORIDE, TOTAL	4	mg/L	0.11 J	< 0.029	< 0.029	0.075 J	0.073 J	0.14 J	0.13 J	0.038 J	0.093 J	0.13 J
pH	N/R	S.U.	6.69	5.61	5.88	6.26	6	6.35	4.71	6.14	6.6	6.19
SULFATE, TOTAL	(250)	mg/L	15.1	0.16 J	7.4	76.4	239	182	205	99.4	32.1	13.3
TOTAL DISSOLVED SOLIDS	(500)	mg/L	126	70	89	269	494	489	360	281	218	108
Appendix IV												
ANTIMONY, TOTAL	0.006	mg/L	< 0.00027	< 0.00027	< 0.00027	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
ARSENIC, TOTAL	0.01	mg/L	0.0018 J	0.00052 J	0.00071 J	< 0.00035	< 0.00035	0.00075 J	< 0.00035	0.00042 J	< 0.00035	0.023
BARIUM, TOTAL	2	mg/L	0.077	0.034	0.024	0.079	0.032	0.1	0.019	0.1	0.089	0.1
BERYLLIUM, TOTAL	0.004	mg/L	< 0.000074	< 0.000074	0.000088 J	< 0.000074	< 0.000074	< 0.000074	0.0033	< 0.000074	< 0.000074	< 0.000074
CADMIUM, TOTAL	0.005	mg/L	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.00016 J	< 0.00011	0.00088 J	< 0.00011	0.00017 J	0.00017 J
CHROMIUM, TOTAL	0.1	mg/L	< 0.00039	0.034	0.0025 J	< 0.00039	0.00092 J	< 0.00039	0.00078 J	< 0.00039	< 0.00039	< 0.00039
COBALT, TOTAL	N/R	mg/L	0.009	0.00064 J	< 0.0003	< 0.0003	0.0016 J	0.007	0.043	0.0013 J	< 0.0003	< 0.0003
FLUORIDE, TOTAL	4	mg/L	0.11 J	< 0.029	< 0.029	0.075 J	0.073 J	0.14 J	0.13 J	0.038 J	0.093 J	0.13 J
LEAD, TOTAL	0.015	mg/L	< 0.000046	< 0.000046	< 0.000046	< 0.000046	0.000074 J	< 0.000046	0.00015 J	< 0.000046	< 0.000046	< 0.000046
LITHIUM, TOTAL	N/R	mg/L	0.0094 J	< 0.00078	0.0012 J	0.0026 J	0.0032 J	< 0.00078	0.0024 J	0.0047 J	< 0.00078	0.0032 J
MERCURY, TOTAL	0.002	mg/L	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014	< 0.00014
MOLYBDENUM, TOTAL	N/R	mg/L	0.037	< 0.00095	< 0.00095	< 0.00095	< 0.00095	< 0.00095	< 0.00095	< 0.00095	0.22	0.01
RADIUM (226 + 228)	5	pCi/L	1.89	0.319 U	1.21 U	2.01	0.527 U	1.40	1.60	0.965 U	2.12	0.826 U
SELENIUM, TOTAL	0.05	mg/L	< 0.0013	< 0.0013	< 0.0013	< 0.0013	< 0.0013	< 0.0013	0.0027 J	< 0.0013	< 0.0013	< 0.0013
THALLIUM, TOTAL	0.002	mg/L	< 0.000052	< 0.000052	< 0.000052	< 0.000052	0.0001 J	< 0.000052	< 0.000052	< 0.000052	< 0.000052	< 0.000052

Notes:

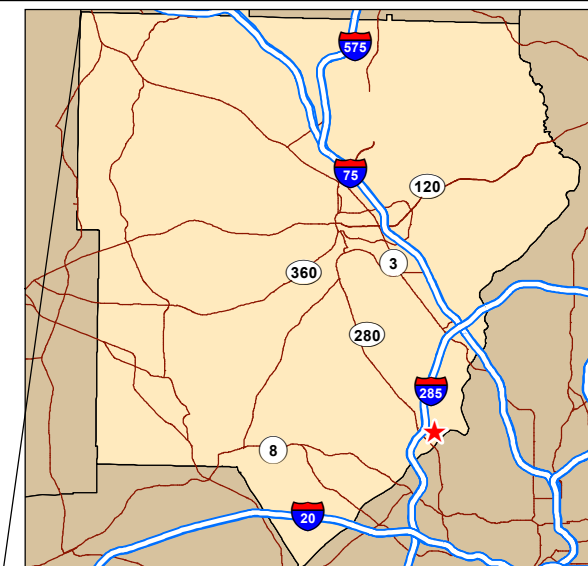
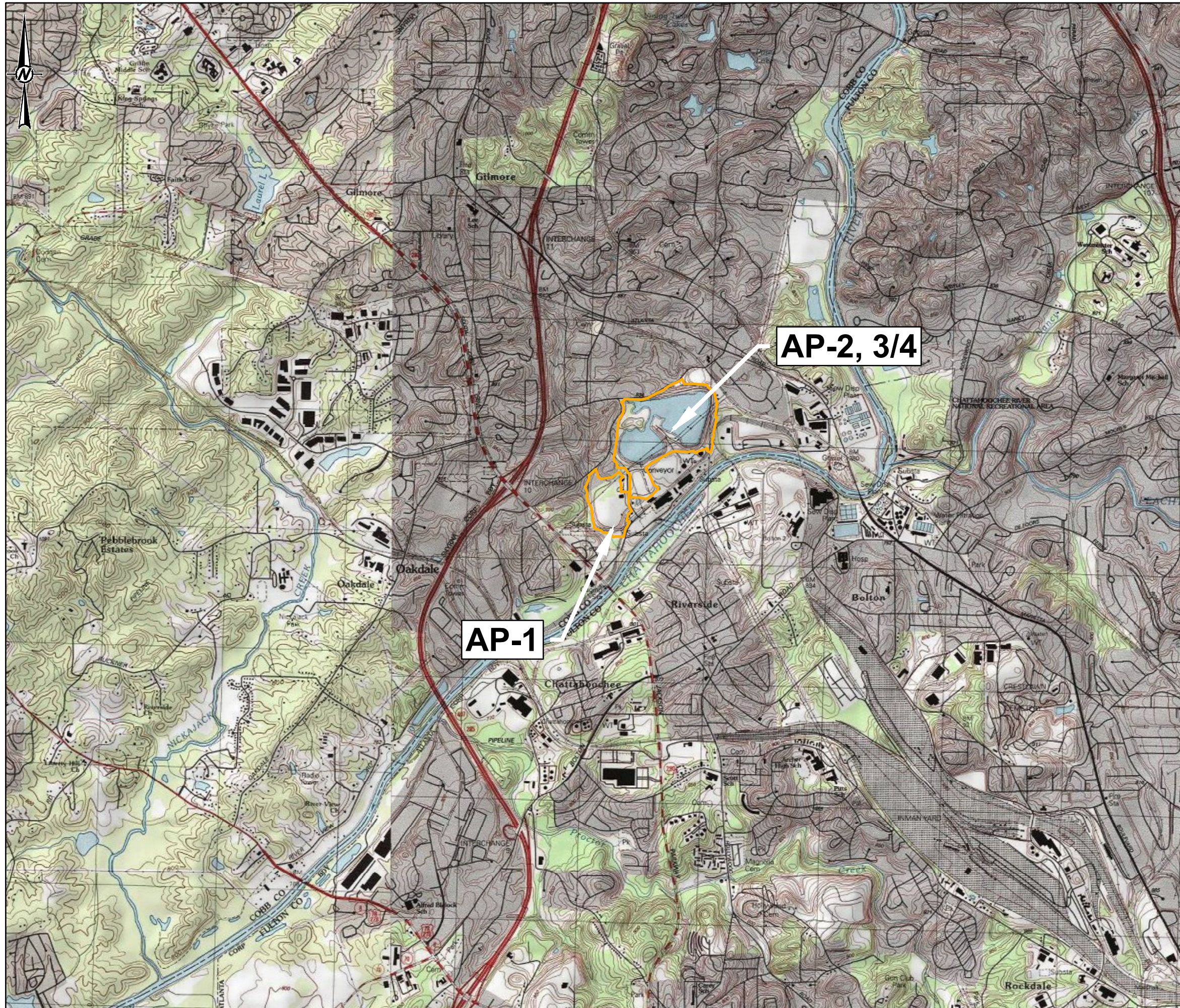
1. mg/L - Milligrams per Liter
2. pCi/L - picocuries per Liter
3. MCL/SMCL - Maximum Contaminant Level/Secondary Contaminant Level - United States Environmental Protection Agency (USEPA) Table of Regulated Drinking Water Contaminants (updated June 2016). Available at <https://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants>. USEPA Secondary Drinking Water Standards: Guidance for Nuisance Chemicals (updated January 2016). Available at <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>. N/R indicates constituent does not have an established Maximum Contaminant Limit.
4. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
5. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
6. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed
7. "Not Sampled" Each of these Appendix IV constituents were not detected during the Annual Appendix IV monitoring event and therefore are not required to be analyzed.

TABLE 5C
ANALYTICAL DATA SUMMARY
Ash Pond 1 - March 2020
Georgia Power Company - Plant McDonough
Atlanta, GA

Analyte	MCL/ (SMCL)	Units	Well ID									
			DGWA-53	DGWA-70A	DGWA-71	DGWC-37	DGWC-38	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
			3/9/2020	3/2/2020	3/2/2020	3/9/2020	3/9/2020	3/9/2020	3/4/2020	3/9/2020	3/9/2020	3/9/2020
Appendix III												
BORON, TOTAL	N/R	mg/L	0.080 J	0.0055 J	0.010 J	1.8	3.0	2.9	0.86	3.6	1.8	0.035 J
CALCIUM, TOTAL	N/R	mg/L	23.7	5.3	5.8	64.2	91.9	100	49.6	46.9	54.0	8.6
CHLORIDE, TOTAL	(250)	mg/L	1.8	1.9	3.0	6.0	8.1	7.5	20.6	6.7	3.6	5.7
FLUORIDE, TOTAL	4	mg/L	0.10 J	<0.050	<0.050	0.054 J	0.064 J	0.075 J	0.11 J	<0.050	0.082 J	0.068 J
pH	N/R	S.U.	6.41	5.54	5.77	6.34	6.12	6.37	4.64	6.23	6.60	6.12
SULFATE, TOTAL	(250)	mg/L	9.5	<0.50	8.5	90.3	244	171	177	100	37.4	7.6
TOTAL DISSOLVED SOLIDS	(500)	mg/L	171	52.0	67.0	357	554	508	400	209	188	115
Appendix IV												
ANTIMONY, TOTAL	0.006	mg/L	<0.00027	<0.00027	0.0018 J	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
ARSENIC, TOTAL	0.01	mg/L	0.00068 J	<0.00035	<0.00035	<0.00035	<0.00035	0.00039 J	0.00065 J	<0.00035	<0.00035	0.029
BARIUM, TOTAL	2	mg/L	0.099	0.035	0.026	0.092	0.032	0.076	0.018	0.11	0.088	0.057
BERYLLIUM, TOTAL	0.004	mg/L	<0.000074	0.000096 J	0.00010 J	<0.000074	<0.000074	<0.000074	0.0039	<0.000074	<0.000074	0.000075 J
CADMIUM, TOTAL	0.005	mg/L	<0.00011	0.00041 J	<0.00011	<0.00011	0.00017 J	<0.00011	0.00093 J	0.00021 J	0.00026 J	<0.00011
CHROMIUM, TOTAL	0.1	mg/L	<0.00039	0.0013 J	0.00045 J	<0.00039	0.00044 J	<0.00039	0.0011 J	0.00088 J	<0.00039	0.0012 J
COBALT, TOTAL	N/R	mg/L	0.016	0.00037 J	<0.00030	<0.00030	0.0016 J	0.0070	0.055	0.0015 J	<0.00030	<0.00030
FLUORIDE, TOTAL	4	mg/L	0.10 J	<0.050	<0.050	0.054 J	0.064 J	0.075 J	0.11 J	<0.050	0.082 J	0.068 J
LEAD, TOTAL	0.015	mg/L	<0.000046	0.000074 J	<0.000046	<0.000046	0.000061 J	<0.000046	0.00017 J	0.000047 J	<0.000046	0.000090 J
LITHIUM, TOTAL	N/R	mg/L	0.0077 J	<0.00078	0.0011 J	0.0017 J	0.0033 J	<0.00078	0.0027 J	0.0048 J	<0.00078	0.0025 J
MERCURY, TOTAL	0.002	mg/L	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014
MOLYBDENUM, TOTAL	N/R	mg/L	0.026	<0.00095	<0.00095	<0.00095	0.0010 J	<0.00095	<0.00095	<0.00095	0.19	0.0062 J
RADIUM (226 + 228)	5	pCi/L	3.51	0.419 U	1.30	0.499 U	1.04	1.36	1.62	0.819 U	1.33	1.39
SELENIUM, TOTAL	0.05	mg/L	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.0049 J	<0.0013	<0.0013	<0.0013
THALLIUM, TOTAL	0.002	mg/L	<0.000052	0.000078 J	<0.000052	<0.000052	0.00016 J	0.000071 J	0.000068 J	<0.000052	<0.000052	<0.000052

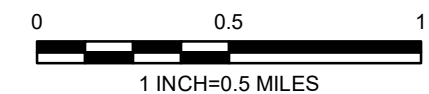
Notes:

1. mg/L - Milligrams per Liter
2. pCi/L - picocuries per Liter
3. MCL/SMCL - Maximum Contaminant Level/Secondary Contaminant Level - United States Environmental Protection Agency (USEPA) Table of Regulated Drinking Water Contaminants (updated June 2016). Available at <https://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants>. USEPA Secondary Drinking Water Standards: Guidance for Nuisance Chemicals (updated January 2016). Available at <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>. N/R indicates constituent does not have an established Maximum Contaminant Limit.
4. < indicates the substance was not detected above the analytical method detection limit (MDL). The value displayed is the method detection limit.
5. J indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed is qualified by the laboratory as an estimated number.
6. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.
7. "Not Sampled" Each of these Appendix IV constituents were not detected during the Annual Appendix IV monitoring event and therefore are not required to be analyzed.




REFERENCE

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CLIENT
 GEORGIA POWER COMPANY
 PLANT MCDONOUGH
 PROJECT
 ANNUAL GROUNDWATER MONITORING REPORT
 PLANT MCDONOUGH

TITLE
SITE LOCATION MAP

CONSULTANT	YYYY-MM-DD	2019-1-31
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	KNJ
	APPROVED	TIR

THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN. THE SHEET HAS BEEN MODIFIED FROM ANS1.B



LEGEND

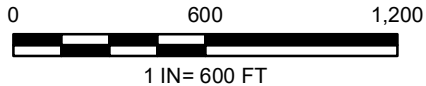
- ◆ UPGRADIENT WELL
- ◆ AP-1 MONITORING WELL
- AP-1 PERMIT BOUNDARY
- - - PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.

REFERENCE

1. SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY.
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL LOCATIONS PROVIDED BY SOUTHERN COMPANY SERVICES.
4. APPROXIMATE PROPERTY BOUNDARY PROVIDED BY SOUTHERN COMPANY (2018). DATE OF PHOTOGRAPHY 09-7-2018.



CLIENT
 GEORGIA POWER COMPANY
 PLANT MCDONOUGH

PROJECT
 ANNUAL GROUNDWATER MONITORING REPORT
 PLANT MCDONOUGH

TITLE
**ASH POND 1 (AP-1) SITE PLAN & MONITORING WELL
 LOCATION MAP**

CONSULTANT	YYYY-MM-DD	2019-1-31
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	KNJ
	APPROVED	TIR

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANS/B

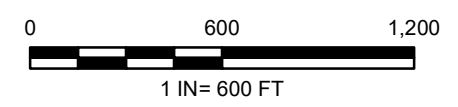


LEGEND

- PIEZOMETER
- AP-1 MONITORING WELL
- AP-2, 3/4 MONITORING WELL
- UPGRADIENT WELL
- ABANDONED PIEZOMETER OR MONITORING WELL
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- PERMIT BOUNDARY
- PROPERTY BOUNDARY
- GROUNDWATER SURFACE CONTOUR (FAMSL)

- NOTES**
1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED OCTOBER 14, 2019 BY GOLDER ASSOCIATES.
 3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FAMSL).
 4. B-27, B-68, AND DGWA-70 ARE NOT USED AS MONITORING WELLS DUE TO WELL REPLACEMENT, PROXIMITY TO CLOSURE ACTIVITIES, OR MODIFICATIONS TO THE PROPOSED WELL NETWORK.
 5. B-76 TO B-84 WERE NOT INCLUDED DUE TO LACK OF SURVEY.

- REFERENCE**
1. SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AERGRID, IGN, AND THE GIS USER COMMUNITY.
 2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
 3. MONITORING WELL/PIEZOMETER LOCATIONS PROVIDED BY SOUTHERN COMPANY SERVICES.
 4. APPROXIMATE PROPERTY BOUNDARY PROVIDED BY SOUTHERN COMPANY (2018). DATE OF PHOTOGRAPHY 09-7-2018.



CLIENT
SOUTHERN COMPANY SERVICES, INC.
 PLANT MCDONOUGH

PROJECT
ESTIMATED POTENTIOMETRIC SURFACE



TITLE
SITE POTENTIOMETRIC MAP
OCTOBER 14, 2019

CONSULTANT	YYYY-MM-DD	2019-10-15
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	JRJ
	APPROVED	TIR

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM ANS/B



LEGEND

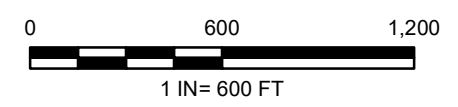
- ◆ PIEZOMETER
- ◆ AP-1 MONITORING WELL
- ◆ AP-2, 3/4 MONITORING WELL
- ◆ UPGRAIENT WELL
- ◆ ABANDONED PIEZOMETER OR MONITORING WELL
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- PERMIT BOUNDARY
- - - PROPERTY BOUNDARY
- - - GROUNDWATER SURFACE CONTOUR (FAMSL)

NOTES

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENTS OBTAINED JANUARY 14, 2020 BY GOLDER ASSOCIATES.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FAMSL).
4. B-27, B-68, AND DGWA-70 ARE NOT USED AS MONITORING WELLS DUE TO WELL REPLACEMENT, PROXIMITY TO CLOSURE ACTIVITIES, OR MODIFICATIONS TO THE PROPOSED WELL NETWORK.

REFERENCE

1. AERIAL IMAGE DATED NOVEMBER 2018 FROM GOOGLE EARTH.
2. COORDINATE SYSTEM: NAD 1983 STATE PLANE GEORGIA WEST (U.S. FEET).
3. MONITORING WELL/PIEZOMETER LOCATIONS PROVIDED BY SOUTHERN COMPANY SERVICES.



CLIENT
SOUTHERN COMPANY SERVICES, INC.
 PLANT MCDONOUGH

PROJECT
ESTIMATED POTENTIOMETRIC SURFACE



TITLE
SITE POTENTIOMETRIC MAP
JANUARY 14, 2020

CONSULTANT	YYYY-MM-DD	2020-02-04
	PREPARED	SEB
	DESIGN	SEB
	REVIEW	JRJ
	APPROVED	TIR

PROJECT No.
 166849618

Rev.
 0

FIGURE
3B

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THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN. THE SHEET HAS BEEN MODIFIED FROM ANSIB

APPENDIX A

**Laboratory Analytical Data, Field Data Forms, Data
Validation Summaries, and Well Inspection Forms**

January 03, 2020

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

RE: Project: Plant McDonough Background
Pace Project No.: 2622481

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 28, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring for
Betsy McDaniel
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Enclosures

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Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background

Pace Project No.: 2622481

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough Background

Pace Project No.: 2622481

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622481001	DGWA-70A	Water	08/27/19 10:20	08/28/19 10:01
2622481002	DGWA-71	Water	08/27/19 15:10	08/28/19 10:01
2622481003	FB-1	Water	08/27/19 10:30	08/28/19 10:01

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background

Pace Project No.: 2622481

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622481001	DGWA-70A	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622481002	DGWA-71	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622481003	FB-1	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Background
Pace Project No.: 2622481

Sample: DGWA-70A		Lab ID: 2622481001		Collected: 08/27/19 10:20		Received: 08/28/19 10:01		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	08/29/19 18:05	08/30/19 20:22	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	08/30/19 20:22	7440-38-2		
Barium	0.037	mg/L	0.010	0.00049	1	08/29/19 18:05	08/30/19 20:22	7440-39-3		
Beryllium	0.000079J	mg/L	0.0030	0.000074	1	08/29/19 18:05	08/30/19 20:22	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	08/30/19 20:22	7440-43-9		
Chromium	0.00071J	mg/L	0.010	0.00039	1	08/29/19 18:05	08/30/19 20:22	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	08/30/19 20:22	7440-48-4		
Lead	0.000078J	mg/L	0.0050	0.000046	1	08/29/19 18:05	08/30/19 20:22	7439-92-1	B	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	08/30/19 20:22	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	08/30/19 20:22	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	08/30/19 20:22	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	08/30/19 20:22	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 09:13	08/29/19 12:21	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 03:38	16984-48-8	1A	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Background
Pace Project No.: 2622481

Sample: DGWA-71		Lab ID: 2622481002		Collected: 08/27/19 15:10		Received: 08/28/19 10:01		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	08/29/19 18:05	09/03/19 20:22	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 20:22	7440-38-2		
Barium	0.027	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 20:22	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 20:22	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 20:22	7440-43-9		
Chromium	0.0018J	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 20:22	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 20:22	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 20:22	7439-92-1		
Lithium	0.0014J	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 20:22	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 20:22	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 20:22	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 20:22	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 09:13	08/29/19 12:24	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 04:00	16984-48-8	1A	

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ANALYTICAL RESULTS

Project: Plant McDonough Background
Pace Project No.: 2622481

Sample: FB-1		Lab ID: 2622481003		Collected: 08/27/19 10:30		Received: 08/28/19 10:01		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	0.00078J	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 20:45	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 20:45	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 20:45	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 20:45	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 20:45	7440-43-9	
Chromium	0.0027J	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 20:45	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 20:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 20:45	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 20:45	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 20:45	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 20:45	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 20:45	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 09:13	08/29/19 12:26	7439-97-6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 04:23	16984-48-8	1A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2622481

QC Batch: 34472

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2622481001, 2622481002, 2622481003

METHOD BLANK: 155027

Matrix: Water

Associated Lab Samples: 2622481001, 2622481002, 2622481003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/29/19 11:39	

LABORATORY CONTROL SAMPLE: 155028

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0027	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155029 155030

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2622479001 Result	Spike Conc.	Spike Conc.	Conc.								
Mercury	mg/L	ND	0.0025	0.0025	0.0025	0.0026	97	99	75-125	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622481

QC Batch: 34496 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622481001

METHOD BLANK: 155177 Matrix: Water
Associated Lab Samples: 2622481001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/30/19 17:42	
Arsenic	mg/L	ND	0.0050	0.00035	08/30/19 17:42	
Barium	mg/L	ND	0.010	0.00049	08/30/19 17:42	
Beryllium	mg/L	ND	0.0030	0.000074	08/30/19 17:42	
Cadmium	mg/L	ND	0.0025	0.00011	08/30/19 17:42	
Chromium	mg/L	ND	0.010	0.00039	08/30/19 17:42	
Cobalt	mg/L	ND	0.0050	0.00030	08/30/19 17:42	
Lead	mg/L	ND	0.0050	0.000046	08/30/19 17:42	
Lithium	mg/L	ND	0.030	0.00078	08/30/19 17:42	
Molybdenum	mg/L	ND	0.010	0.00095	08/30/19 17:42	
Selenium	mg/L	ND	0.010	0.0013	08/30/19 17:42	
Thallium	mg/L	ND	0.0010	0.000052	08/30/19 17:42	

LABORATORY CONTROL SAMPLE: 155178

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	104	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	104	80-120	
Cadmium	mg/L	0.1	0.10	103	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	101	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.11	105	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155179 155180

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

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622481

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155179		155180		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2622479002 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Cobalt	mg/L	0.0018J	0.1	0.1	0.098	0.098	97	96	75-125	1	20		
Lead	mg/L	0.000049J	0.1	0.1	0.094	0.093	94	93	75-125	1	20		
Lithium	mg/L	0.0033J	0.1	0.1	0.10	0.10	100	97	75-125	2	20		
Molybdenum	mg/L	0.0065J	0.1	0.1	0.11	0.11	106	105	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.11	0.11	106	109	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20		

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622481

QC Batch: 34528 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622481002, 2622481003

METHOD BLANK: 155360 Matrix: Water
Associated Lab Samples: 2622481002, 2622481003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/03/19 20:11	
Arsenic	mg/L	ND	0.0050	0.00035	09/03/19 20:11	
Barium	mg/L	ND	0.010	0.00049	09/03/19 20:11	
Beryllium	mg/L	ND	0.0030	0.000074	09/03/19 20:11	
Cadmium	mg/L	ND	0.0025	0.00011	09/03/19 20:11	
Chromium	mg/L	ND	0.010	0.00039	09/03/19 20:11	
Cobalt	mg/L	ND	0.0050	0.00030	09/03/19 20:11	
Lead	mg/L	ND	0.0050	0.000046	09/03/19 20:11	
Lithium	mg/L	ND	0.030	0.00078	09/03/19 20:11	
Molybdenum	mg/L	ND	0.010	0.00095	09/03/19 20:11	
Selenium	mg/L	ND	0.010	0.0013	09/03/19 20:11	
Thallium	mg/L	ND	0.0010	0.000052	09/03/19 20:11	

LABORATORY CONTROL SAMPLE: 155361

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.12	118	80-120	
Arsenic	mg/L	0.1	0.10	105	80-120	
Barium	mg/L	0.1	0.11	105	80-120	
Beryllium	mg/L	0.1	0.11	109	80-120	
Cadmium	mg/L	0.1	0.11	108	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Lead	mg/L	0.1	0.10	105	80-120	
Lithium	mg/L	0.1	0.11	107	80-120	
Molybdenum	mg/L	0.1	0.11	108	80-120	
Selenium	mg/L	0.1	0.11	107	80-120	
Thallium	mg/L	0.1	0.10	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155362 155363

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2622481002 Result	Spike Conc.	Spike Conc.	MSD Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.12	114	117	75-125	2	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20		
Barium	mg/L	0.027	0.1	0.1	0.13	0.13	101	107	75-125	4	20		
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2622481

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155362		155363		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2622481002 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	0.0018J	0.1	0.1	0.11	0.11	104	107	75-125	3	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.11	103	107	75-125	4	20		
Lead	mg/L	ND	0.1	0.1	0.10	0.10	101	104	75-125	3	20		
Lithium	mg/L	0.0014J	0.1	0.1	0.10	0.10	100	103	75-125	3	20		
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	106	110	75-125	4	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	4	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	102	104	75-125	3	20		

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622481

QC Batch: 34615 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622481001, 2622481002, 2622481003

METHOD BLANK: 155878 Matrix: Water
Associated Lab Samples: 2622481001, 2622481002, 2622481003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	08/31/19 20:05	1A

LABORATORY CONTROL SAMPLE: 155879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.4	94	90-110	1A

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough Background

Pace Project No.: 2622481

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.

BATCH QUALIFIERS

Batch: 34615

[1] Batch accepted based on laboratory control sample (LCS) recovery.

ANALYTE QUALIFIERS

1A Batch accepted based on laboratory control sample (LCS) recovery.

B Analyte was detected in the associated method blank.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Background
Pace Project No.: 2622481

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622481001	DGWA-70A	EPA 3005A	34496	EPA 6020B	34557
2622481002	DGWA-71	EPA 3005A	34528	EPA 6020B	34560
2622481003	FB-1	EPA 3005A	34528	EPA 6020B	34560
2622481001	DGWA-70A	EPA 7470A	34472	EPA 7470A	34485
2622481002	DGWA-71	EPA 7470A	34472	EPA 7470A	34485
2622481003	FB-1	EPA 7470A	34472	EPA 7470A	34485
2622481001	DGWA-70A	EPA 300.0	34615		
2622481002	DGWA-71	EPA 300.0	34615		
2622481003	FB-1	EPA 300.0	34615		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals		Report To: Jolu Abraham		Attention: scsinvoices@southernco.com	
Address: 2480 Maner Road Atlanta, GA 30339		Copy To: Gotder		Company Name:	
Email: jabraham@southernco.com		Purchase Order #: SCS10382775		Address:	
Phone: (404)506-7239 Fax:		Project Name: Plant McDonough Background		Pace Project Manager: betsy.mcdaniel@pacelabs.com.	
Requested Due Date: Standard TAT		Project #: 166849618		Pace Profile #: 332.7.2	
				Regulatory Agency:	
				State/Location:	
				GA	

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) □ Sample IDs must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)	
								Unpreserved - Ice	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol		Other	Metals App IV	Fluoride by 300.0		Radium 226/228
1	DGWA-70A	WT	G	8/27/2019	1020		4	X	X								X	X	X	
2	DGWA-71	WT	G	8/27/2019	1510		4	X	X								X	X	X	
3	FB-1	WT	G	8/27/2019	1030		4	X	X								X	X	X	
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

WO#: 2622481

 2622481

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
* Metals = Hg, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Mo, Se, Tl	<i>[Signature]</i> Gotder	8/28/19	908	<i>[Signature]</i> Pace	8.28.19	0908					
	<i>[Signature]</i> Pace	8.28.19	1001	<i>[Signature]</i> Adalman	8/28/19	1001					
							TEMP in C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooled (Y/N)	Samples Intact (Y/N)



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2622481**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

PM: BM Due Date: 09/05/19

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.8 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/28/19 MR

Temp should be above freezing to 6°C Comments: _____

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

September 26, 2019

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

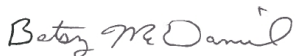
RE: Project: Plant McDonough Background
Pace Project No.: 2622482

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 28, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Ms. Jean Brown, Georgia Power_Southern Company
Ben Hodges, Georgia Power
Kristen Jurinko, Golder Associates Inc.
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta
Dominic Weatherhill, Georgia Power



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background
Pace Project No.: 2622482

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough Background

Pace Project No.: 2622482

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622482001	DGWA-70A	Water	08/27/19 10:20	08/28/19 10:01
2622482002	DGWA-71	Water	08/27/19 15:10	08/28/19 10:01
2622482003	FB-1	Water	08/27/19 10:30	08/28/19 10:01

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background

Pace Project No.: 2622482

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622482001	DGWA-70A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622482002	DGWA-71	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622482003	FB-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622482

Sample: DGWA-70A **Lab ID: 2622482001** Collected: 08/27/19 10:20 Received: 08/28/19 10:01 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.11 ± 0.420 (0.348) C:84% T:NA	pCi/L	09/20/19 07:20	13982-63-3	
Radium-228	EPA 9320	0.863 ± 0.385 (0.642) C:81% T:91%	pCi/L	09/23/19 10:55	15262-20-1	
Total Radium	Total Radium Calculation	1.97 ± 0.805 (0.990)	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622482

Sample: DGWA-71 **Lab ID: 2622482002** Collected: 08/27/19 15:10 Received: 08/28/19 10:01 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.435 ± 0.334 (0.581) C:72% T:NA	pCi/L	09/20/19 07:20	13982-63-3	
Radium-228	EPA 9320	0.867 ± 0.464 (0.843) C:81% T:78%	pCi/L	09/23/19 10:55	15262-20-1	
Total Radium	Total Radium Calculation	1.30 ± 0.798 (1.42)	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622482

Sample: FB-1 **Lab ID: 2622482003** Collected: 08/27/19 10:30 Received: 08/28/19 10:01 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.200 ± 0.274 (0.592) C:88% T:NA	pCi/L	09/20/19 07:20	13982-63-3	
Radium-228	EPA 9320	0.386 ± 0.361 (0.740) C:79% T:86%	pCi/L	09/23/19 10:55	15262-20-1	
Total Radium	Total Radium Calculation	0.586 ± 0.635 (1.33)	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622482

QC Batch: 359967 Analysis Method: EPA 9315

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

Associated Lab Samples: 2622482001, 2622482002, 2622482003

METHOD BLANK: 1747391 Matrix: Water

Associated Lab Samples: 2622482001, 2622482002, 2622482003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.763 ± 0.364 (0.510) C:93% T:NA	pCi/L	09/20/19 07:14	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622482

QC Batch: 359968

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622482001, 2622482002, 2622482003

METHOD BLANK: 1747392

Matrix: Water

Associated Lab Samples: 2622482001, 2622482002, 2622482003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.921 ± 0.439 (0.755) C:82% T:78%	pCi/L	09/23/19 10:55	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough Background
Pace Project No.: 2622482

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Background

Pace Project No.: 2622482

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622482001	DGWA-70A	EPA 9315	359967		
2622482002	DGWA-71	EPA 9315	359967		
2622482003	FB-1	EPA 9315	359967		
2622482001	DGWA-70A	EPA 9320	359968		
2622482002	DGWA-71	EPA 9320	359968		
2622482003	FB-1	EPA 9320	359968		
2622482001	DGWA-70A	Total Radium Calculation	362817		
2622482002	DGWA-71	Total Radium Calculation	362817		
2622482003	FB-1	Total Radium Calculation	362817		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com
Address: 2880 Maner Road Atlanta, GA 30339	Copy To: Golder	Company Name:
Email: jabraham@southernco.com	Purchase Order #: SCS10382775	Address:
Phone: (404)506-7239 Fax:	Project Name: Plant McDonough Background	Pace Quote:
Requested Due Date: Standard TAT	Project #: 166849618	Pace Project Manager: betsy.mcdaniel@pacelabs.com
		Pace Profile #: 332.7.2

Regulatory Agency:
State / Location:
GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analytical Test	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)
								Unpreserved - Ice	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other		Metals App IV*	Fluoride by 300.0	Radium 226/228	
1	DGWA 70A	WT	G	8/27/2019	1020		4	X	X								X	X	X	
2	DGWA 71	WT	G	8/27/2019	1510		4	X	X								X	X	X	
3	FB-1	WT	G	8/27/2019	1030		4	X	X								X	X	X	
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

WO#: 2622482

 2622482

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
* Metals = Hg, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Mo, Se, Tl	<i>Wm Golder</i>	8/28/19	908	<i>J. Ponce</i>	8.28.19	0908	
	<i>J. Ponce</i>	8.28.19	1001	<i>M. Dalman</i>	8/28/19	1001	
							0.8 F F F

DATE Signed:



Sample Condition Upon Receipt

Client Name: GAPower

Project # _____

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

WO#: **2622482**

PM: BM Due Date: 09/26/19
CLIENT: GAPower-CCR

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.8 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/28/19 MR

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

December 30, 2019

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

RE: Project: Plant McDonough AP-1
Pace Project No.: 2622587

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough AP-1

Pace Project No.: 2622587

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 McDonough AP-1
Pace Project No.: 2622587

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622587001	DGWC-37	Water	08/28/19 10:00	08/29/19 12:50
2622587002	DGWC-38	Water	08/28/19 11:25	08/29/19 12:50
2622587003	DGWC-39	Water	08/28/19 13:40	08/29/19 12:50
2622587004	DGWC-40	Water	08/28/19 15:15	08/29/19 12:50
2622587005	DGWC-67	Water	08/28/19 15:00	08/29/19 12:50
2622587006	DGWC-68A	Water	08/28/19 13:45	08/29/19 12:50
2622587007	DGWC-69	Water	08/28/19 12:00	08/29/19 12:50
2622587008	FD-2	Water	08/28/19 00:00	08/29/19 12:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622587001	DGWC-37	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587002	DGWC-38	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587003	DGWC-39	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587004	DGWC-40	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587005	DGWC-67	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587006	DGWC-68A	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587007	DGWC-69	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
2622587008	FD-2	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-37		Lab ID: 2622587001		Collected: 08/28/19 10:00		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 19:42	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 19:42	7440-38-2		
Barium	0.086	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 19:42	7440-39-3		
Beryllium	0.000086J	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 19:42	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 19:42	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 19:42	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 19:42	7440-48-4		
Lead	0.000061J	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 19:42	7439-92-1		
Lithium	0.0025J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 19:42	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 19:42	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 19:42	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 19:42	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:01	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.074J	mg/L	0.10	0.050	1		09/07/19 15:40	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-38		Lab ID: 2622587002		Collected: 08/28/19 11:25		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 19:48	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 19:48	7440-38-2		
Barium	0.033	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 19:48	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 19:48	7440-41-7		
Cadmium	0.00030J	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 19:48	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 19:48	7440-47-3		
Cobalt	0.0016J	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 19:48	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 19:48	7439-92-1		
Lithium	0.0034J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 19:48	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 19:48	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 19:48	7782-49-2		
Thallium	0.00014J	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 19:48	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:11	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.066J	mg/L	0.10	0.050	1		09/07/19 15:56	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-39		Lab ID: 2622587003		Collected: 08/28/19 13:40		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 19:53	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 19:53	7440-38-2		
Barium	0.099	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 19:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 19:53	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 19:53	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 19:53	7440-47-3		
Cobalt	0.0067	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 19:53	7440-48-4		
Lead	0.00080J	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 19:53	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 19:53	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 19:53	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 19:53	7782-49-2		
Thallium	0.00069J	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 19:53	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:13	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.086J	mg/L	0.10	0.050	1		09/07/19 16:12	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-40		Lab ID: 2622587004		Collected: 08/28/19 15:15		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 19:59	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 19:59	7440-38-2		
Barium	0.017	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 19:59	7440-39-3		
Beryllium	0.0032	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 19:59	7440-41-7		
Cadmium	0.00087J	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 19:59	7440-43-9		
Chromium	0.00061J	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 19:59	7440-47-3		
Cobalt	0.044	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 19:59	7440-48-4		
Lead	0.00081J	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 19:59	7439-92-1		
Lithium	0.0022J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 19:59	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 19:59	7439-98-7		
Selenium	0.0017J	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 19:59	7782-49-2		
Thallium	0.000070J	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 19:59	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:16	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.14	mg/L	0.10	0.050	1		09/07/19 16:27	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-67		Lab ID: 2622587005		Collected: 08/28/19 15:00		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 20:05	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 20:05	7440-38-2		
Barium	0.11	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 20:05	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 20:05	7440-41-7		
Cadmium	0.00017J	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 20:05	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 20:05	7440-47-3		
Cobalt	0.0013J	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 20:05	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 20:05	7439-92-1		
Lithium	0.0046J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 20:05	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 20:05	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 20:05	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 20:05	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:23	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.10	0.050	1		09/07/19 16:42	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-68A		Lab ID: 2622587006		Collected: 08/28/19 13:45		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 20:22	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 20:22	7440-38-2		
Barium	0.089	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 20:22	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 20:22	7440-41-7		
Cadmium	0.00017J	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 20:22	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 20:22	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 20:22	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 20:22	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 20:22	7439-93-2		
Molybdenum	0.21	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 20:22	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 20:22	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 20:22	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:25	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.10	mg/L	0.10	0.050	1		09/07/19 17:29	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: DGWC-69		Lab ID: 2622587007		Collected: 08/28/19 12:00		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 20:28	7440-36-0		
Arsenic	0.025	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 20:28	7440-38-2		
Barium	0.061	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 20:28	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 20:28	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 20:28	7440-43-9		
Chromium	0.00049J	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 20:28	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 20:28	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 20:28	7439-92-1		
Lithium	0.0024J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 20:28	7439-93-2		
Molybdenum	0.0059J	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 20:28	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 20:28	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 20:28	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:27	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.070J	mg/L	0.10	0.050	1		09/07/19 17:44	16984-48-8		

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2622587

Sample: FD-2		Lab ID: 2622587008		Collected: 08/28/19 00:00		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 20:34	7440-36-0		
Arsenic	0.025	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 20:34	7440-38-2		
Barium	0.061	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 20:34	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 20:34	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 20:34	7440-43-9		
Chromium	0.00055J	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 20:34	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 20:34	7440-48-4		
Lead	0.00016J	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 20:34	7439-92-1		
Lithium	0.0023J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 20:34	7439-93-2		
Molybdenum	0.0057J	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 20:34	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 20:34	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 20:34	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:30	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.069J	mg/L	0.10	0.050	1		09/07/19 18:00	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2622587

QC Batch: 34720 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622587001, 2622587002, 2622587003, 2622587004, 2622587005, 2622587006, 2622587007, 2622587008

METHOD BLANK: 156270 Matrix: Water
Associated Lab Samples: 2622587001, 2622587002, 2622587003, 2622587004, 2622587005, 2622587006, 2622587007, 2622587008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	09/05/19 12:57	

LABORATORY CONTROL SAMPLE: 156271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 156272 156273

Parameter	Units	2622587001 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	0.0023	91	92	75-125	2	20	

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2622587

QC Batch: 34572 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622587001, 2622587002, 2622587003, 2622587004, 2622587005, 2622587006, 2622587007, 2622587008

METHOD BLANK: 155685 Matrix: Water
Associated Lab Samples: 2622587001, 2622587002, 2622587003, 2622587004, 2622587005, 2622587006, 2622587007, 2622587008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/05/19 17:36	
Arsenic	mg/L	ND	0.0050	0.00035	09/05/19 17:36	
Barium	mg/L	ND	0.010	0.00049	09/05/19 17:36	
Beryllium	mg/L	ND	0.0030	0.000074	09/05/19 17:36	
Cadmium	mg/L	ND	0.0025	0.00011	09/05/19 17:36	
Chromium	mg/L	ND	0.010	0.00039	09/05/19 17:36	
Cobalt	mg/L	ND	0.0050	0.00030	09/05/19 17:36	
Lead	mg/L	ND	0.0050	0.000046	09/05/19 17:36	
Lithium	mg/L	ND	0.030	0.00078	09/05/19 17:36	
Molybdenum	mg/L	ND	0.010	0.00095	09/05/19 17:36	
Selenium	mg/L	ND	0.010	0.0013	09/05/19 17:36	
Thallium	mg/L	ND	0.0010	0.000052	09/05/19 17:36	

LABORATORY CONTROL SAMPLE: 155686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	108	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.097	97	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	0.10	101	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155687 155688

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2622579008	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	104	106	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Barium	mg/L	0.17	0.1	0.1	0.25	0.27	84	96	75-125	4	20	
Beryllium	mg/L	0.00022J	0.1	0.1	0.094	0.095	94	95	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1

Pace Project No.: 2622587

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155687		155688		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2622579008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Chromium	mg/L	0.00089J	0.1	0.1	0.096	0.099	95	98	75-125	2	20	
Cobalt	mg/L	0.00099J	0.1	0.1	0.096	0.097	95	96	75-125	1	20	
Lead	mg/L	0.000061J	0.1	0.1	0.096	0.098	96	98	75-125	2	20	
Lithium	mg/L	0.0018J	0.1	0.1	0.097	0.098	95	96	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20	

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2622587

QC Batch: 496582 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: 2622587001, 2622587002, 2622587003, 2622587004, 2622587005, 2622587006, 2622587007, 2622587008

METHOD BLANK: 2674477 Matrix: Water
Associated Lab Samples: 2622587001, 2622587002, 2622587003, 2622587004, 2622587005, 2622587006, 2622587007, 2622587008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	09/07/19 12:19	

LABORATORY CONTROL SAMPLE: 2674478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2674479 2674480

Parameter	Units	2622657001 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	ND	ND	0	0	90-110		10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2674481 2674482

Parameter	Units	2622587005 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	2.7	2.8	108	108	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough AP-1

Pace Project No.: 2622587

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 McDonough AP-1
Pace Project No.: 2622587

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622587001	DGWC-37	EPA 3005A	34572	EPA 6020B	34602
2622587002	DGWC-38	EPA 3005A	34572	EPA 6020B	34602
2622587003	DGWC-39	EPA 3005A	34572	EPA 6020B	34602
2622587004	DGWC-40	EPA 3005A	34572	EPA 6020B	34602
2622587005	DGWC-67	EPA 3005A	34572	EPA 6020B	34602
2622587006	DGWC-68A	EPA 3005A	34572	EPA 6020B	34602
2622587007	DGWC-69	EPA 3005A	34572	EPA 6020B	34602
2622587008	FD-2	EPA 3005A	34572	EPA 6020B	34602
2622587001	DGWC-37	EPA 7470A	34720	EPA 7470A	34792
2622587002	DGWC-38	EPA 7470A	34720	EPA 7470A	34792
2622587003	DGWC-39	EPA 7470A	34720	EPA 7470A	34792
2622587004	DGWC-40	EPA 7470A	34720	EPA 7470A	34792
2622587005	DGWC-67	EPA 7470A	34720	EPA 7470A	34792
2622587006	DGWC-68A	EPA 7470A	34720	EPA 7470A	34792
2622587007	DGWC-69	EPA 7470A	34720	EPA 7470A	34792
2622587008	FD-2	EPA 7470A	34720	EPA 7470A	34792
2622587001	DGWC-37	EPA 300.0 Rev 2.1 1993	496582		
2622587002	DGWC-38	EPA 300.0 Rev 2.1 1993	496582		
2622587003	DGWC-39	EPA 300.0 Rev 2.1 1993	496582		
2622587004	DGWC-40	EPA 300.0 Rev 2.1 1993	496582		
2622587005	DGWC-67	EPA 300.0 Rev 2.1 1993	496582		
2622587006	DGWC-68A	EPA 300.0 Rev 2.1 1993	496582		
2622587007	DGWC-69	EPA 300.0 Rev 2.1 1993	496582		
2622587008	FD-2	EPA 300.0 Rev 2.1 1993	496582		

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Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: **2622587**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

PM: BM Due Date: **09/06/19**

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

CLIENT: **GA Power-CCR**

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.0

Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 8/29/19 MK

Temp should be above freezing to 6°C

Comments: _____

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

September 24, 2019

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

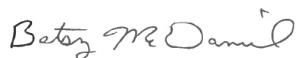
RE: Project: Plant McDonough AP-1
Pace Project No.: 2622588

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Ben Hodges, Georgia Power
Kristen Jurinko, Golder Associates Inc.
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough AP-1
Pace Project No.: 2622588

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

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SAMPLE SUMMARY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622588001	DGWC-37	Water	08/28/19 10:00	08/29/19 12:50
2622588002	DGWC-38	Water	08/28/19 11:25	08/29/19 12:50
2622588003	DGWC-39	Water	08/28/19 13:40	08/29/19 12:50
2622588004	DGWC-40	Water	08/28/19 15:15	08/29/19 12:50
2622588005	DGWC-67	Water	08/28/19 15:00	08/29/19 12:50
2622588006	DGWC-68A	Water	08/28/19 13:45	08/29/19 12:50
2622588007	DGWC-69	Water	08/28/19 12:00	08/29/19 12:50
2622588008	FD-2	Water	08/28/19 00:00	08/29/19 12:50

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622588001	DGWC-37	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588002	DGWC-38	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588003	DGWC-39	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588004	DGWC-40	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588005	DGWC-67	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588006	DGWC-68A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588007	DGWC-69	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622588008	FD-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-37 Lab ID: 2622588001 Collected: 08/28/19 10:00 Received: 08/29/19 12:50 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.508 ± 0.285 (0.394) C:84% T:NA	pCi/L	09/13/19 14:32	13982-63-3	
Radium-228	EPA 9320	0.736 ± 0.471 (0.911) C:73% T:84%	pCi/L	09/19/19 11:59	15262-20-1	
Total Radium	Total Radium Calculation	1.24 ± 0.756 (1.31)	pCi/L	09/23/19 11:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: DGWC-38 **Lab ID: 2622588002** Collected: 08/28/19 11:25 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.517 ± 0.297 (0.411) C:91% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	-0.0409 ± 0.453 (1.04) C:71% T:83%	pCi/L	09/19/19 11:59	15262-20-1	
Total Radium	Total Radium Calculation	0.517 ± 0.750 (1.45)	pCi/L	09/23/19 11:59	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: DGWC-39 **Lab ID: 2622588003** Collected: 08/28/19 13:40 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.396 ± 0.250 (0.366) C:97% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	0.754 ± 0.444 (0.826) C:71% T:90%	pCi/L	09/19/19 15:49	15262-20-1	
Total Radium	Total Radium Calculation	1.15 ± 0.694 (1.19)	pCi/L	09/23/19 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: DGWC-40 **Lab ID: 2622588004** Collected: 08/28/19 15:15 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.403 ± 0.262 (0.369) C:87% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	0.189 ± 0.443 (0.982) C:71% T:80%	pCi/L	09/19/19 15:17	15262-20-1	
Total Radium	Total Radium Calculation	0.592 ± 0.705 (1.35)	pCi/L	09/23/19 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: DGWC-67 **Lab ID: 2622588005** Collected: 08/28/19 15:00 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.540 ± 0.323 (0.485) C:87% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	0.211 ± 0.388 (0.850) C:69% T:81%	pCi/L	09/19/19 15:17	15262-20-1	
Total Radium	Total Radium Calculation	0.751 ± 0.711 (1.34)	pCi/L	09/23/19 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: DGWC-68A **Lab ID: 2622588006** Collected: 08/28/19 13:45 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.635 ± 0.345 (0.519) C:90% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	1.13 ± 0.478 (0.771) C:67% T:90%	pCi/L	09/19/19 15:16	15262-20-1	
Total Radium	Total Radium Calculation	1.77 ± 0.823 (1.29)	pCi/L	09/23/19 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: DGWC-69 **Lab ID: 2622588007** Collected: 08/28/19 12:00 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.14 ± 0.412 (0.337) C:95% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	0.236 ± 0.426 (0.932) C:73% T:83%	pCi/L	09/19/19 11:59	15262-20-1	
Total Radium	Total Radium Calculation	1.38 ± 0.838 (1.27)	pCi/L	09/23/19 11:59	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Sample: FD-2 **Lab ID: 2622588008** Collected: 08/28/19 00:00 Received: 08/29/19 12:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.985 ± 0.387 (0.376) C:90% T:NA	pCi/L	09/13/19 09:00	13982-63-3	
Radium-228	EPA 9320	0.464 ± 0.394 (0.776) C:76% T:80%	pCi/L	09/19/19 14:33	15262-20-1	
Total Radium	Total Radium Calculation	1.45 ± 0.781 (1.15)	pCi/L	09/23/19 11:58	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

QC Batch: 359955

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2622588001, 2622588002, 2622588003, 2622588004, 2622588005, 2622588006, 2622588007, 2622588008

METHOD BLANK: 1747367

Matrix: Water

Associated Lab Samples: 2622588001, 2622588002, 2622588003, 2622588004, 2622588005, 2622588006, 2622588007, 2622588008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.428 ± 0.255 (0.325) C:92% T:NA	pCi/L	09/13/19 09:00	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2622588

QC Batch: 359957

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622588001, 2622588002, 2622588003, 2622588004, 2622588005, 2622588006, 2622588007, 2622588008

METHOD BLANK: 1747374

Matrix: Water

Associated Lab Samples: 2622588001, 2622588002, 2622588003, 2622588004, 2622588005, 2622588006, 2622588007, 2622588008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.461 ± 0.411 (0.833) C:71% T:76%	pCi/L	09/19/19 12:11	

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

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QUALIFIERS

Project: Plant McDonough AP-1

Pace Project No.: 2622588

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough AP-1

Pace Project No.: 2622588

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622588001	DGWC-37	EPA 9315	359955		
2622588002	DGWC-38	EPA 9315	359955		
2622588003	DGWC-39	EPA 9315	359955		
2622588004	DGWC-40	EPA 9315	359955		
2622588005	DGWC-67	EPA 9315	359955		
2622588006	DGWC-68A	EPA 9315	359955		
2622588007	DGWC-69	EPA 9315	359955		
2622588008	FD-2	EPA 9315	359955		
2622588001	DGWC-37	EPA 9320	359957		
2622588002	DGWC-38	EPA 9320	359957		
2622588003	DGWC-39	EPA 9320	359957		
2622588004	DGWC-40	EPA 9320	359957		
2622588005	DGWC-67	EPA 9320	359957		
2622588006	DGWC-68A	EPA 9320	359957		
2622588007	DGWC-69	EPA 9320	359957		
2622588008	FD-2	EPA 9320	359957		
2622588001	DGWC-37	Total Radium Calculation	362616		
2622588002	DGWC-38	Total Radium Calculation	362617		
2622588003	DGWC-39	Total Radium Calculation	362617		
2622588004	DGWC-40	Total Radium Calculation	362617		
2622588005	DGWC-67	Total Radium Calculation	362617		
2622588006	DGWC-68A	Total Radium Calculation	362617		
2622588007	DGWC-69	Total Radium Calculation	362617		
2622588008	FD-2	Total Radium Calculation	362616		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239 Fax:
 Requested Due Date: Standard TAT

Section B

Required Project Information:
 Report To: Joju Abraham
 Copy To: Golder
 Purchase Order #: SCS10382775
 Project Name: Plant McDonough AP-1
 Project #: 166849618

Section C

Invoice Information:
 Attention: scsinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com,
 Pace Profile #: 332.7.2

Regulatory Agency:
State / Location:
 GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , .)	MATRIX Drinking Water: DW: Water: WT: Waste Water: WW: Product: P: Soil/Solid: SL: Oil: OL: Wipe: WP: Air: AR: Other: OT: Tissue: TS	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Y/N	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)
										Unpreserved - Ice	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Metals App IV*	Fluoride by 300.0		Radium 226/228			
1	DGWC-3			WT	G	8/28/2019	1000		6	X	X									X	X	X		Extra Radium
2	DGWC-3			WT	G	8/28/2019	1125		4	X	X									X	X	X		
3	DGWC-3			WT	G	8/28/2019	1340		4	X	X									X	X	X		
4	DGWC-4			WT	G	8/28/2019	1515		4	X	X									X	X	X		
5	DGWC-6			WT	G	8/28/2019	1500		4	X	X									X	X	X		
6	DGWC-6A			WT	G	8/28/2019	1345		4	X	X									X	X	X		
7	DGWC-6			WT	G	8/28/2019	1200		4	X	X									X	X	X		
8	FD-2			WT	G	8/28/2019	--		4	X	X									X	X	X		
9																								
10																								
11																								
12																								

WO# : 2622588

 2622588

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
* Metals = Hg, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Mo, Se, Ti	<i>J. Golder</i>	8-29-19		<i>M. BAH</i> <i>Charles</i>	8-29-19	10:30	2.0 X Y A

TEMP in C _____
 Received on Ice (Y/N) _____
 Custody Sealed (Y/N) _____
 Cooler (Y/N) _____
 Samples Intact (Y/N) _____
 DATE Signed: _____



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

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

WO#: 2622588

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

PM: BM Due Date: 09/27/19
CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.0 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 8/29/19 ml

Temp should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

December 30, 2019

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

RE: Project: Plant McDonough Background
Pace Project No.: 2622589

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background

Pace Project No.: 2622589

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 McDonough Background

Pace Project No.: 2622589

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622589001	DGWA-53	Water	08/28/19 15:55	08/29/19 12:50

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background

Pace Project No.: 2622589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622589001	DGWA-53	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A

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ANALYTICAL RESULTS

Project: Plant McDonough Background
Pace Project No.: 2622589

Sample: DGWA-53		Lab ID: 2622589001		Collected: 08/28/19 15:55		Received: 08/29/19 12:50		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	08/30/19 16:08	09/05/19 20:39	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/05/19 20:39	7440-38-2		
Barium	0.087	mg/L	0.010	0.00049	1	08/30/19 16:08	09/05/19 20:39	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/05/19 20:39	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/05/19 20:39	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/05/19 20:39	7440-47-3		
Cobalt	0.013	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/05/19 20:39	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/05/19 20:39	7439-92-1		
Lithium	0.0092J	mg/L	0.030	0.00078	1	08/30/19 16:08	09/05/19 20:39	7439-93-2		
Molybdenum	0.031	mg/L	0.010	0.00095	1	08/30/19 16:08	09/05/19 20:39	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/05/19 20:39	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/05/19 20:39	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:32	7439-97-6		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	0.42	mg/L	0.10	0.050	1		09/07/19 13:36	16984-48-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622589

QC Batch: 34720 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622589001

METHOD BLANK: 156270 Matrix: Water
Associated Lab Samples: 2622589001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	09/05/19 12:57	

LABORATORY CONTROL SAMPLE: 156271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 156272 156273

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2622587001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury	mg/L	ND	0.0025	0.0025	0.0023	0.0023	91	92	75-125	2	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622589

QC Batch: 34572 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622589001

METHOD BLANK: 155685 Matrix: Water
Associated Lab Samples: 2622589001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/05/19 17:36	
Arsenic	mg/L	ND	0.0050	0.00035	09/05/19 17:36	
Barium	mg/L	ND	0.010	0.00049	09/05/19 17:36	
Beryllium	mg/L	ND	0.0030	0.000074	09/05/19 17:36	
Cadmium	mg/L	ND	0.0025	0.00011	09/05/19 17:36	
Chromium	mg/L	ND	0.010	0.00039	09/05/19 17:36	
Cobalt	mg/L	ND	0.0050	0.00030	09/05/19 17:36	
Lead	mg/L	ND	0.0050	0.000046	09/05/19 17:36	
Lithium	mg/L	ND	0.030	0.00078	09/05/19 17:36	
Molybdenum	mg/L	ND	0.010	0.00095	09/05/19 17:36	
Selenium	mg/L	ND	0.010	0.0013	09/05/19 17:36	
Thallium	mg/L	ND	0.0010	0.000052	09/05/19 17:36	

LABORATORY CONTROL SAMPLE: 155686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	108	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.097	97	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	0.10	101	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155687 155688

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2622579008 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	104	106	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Barium	mg/L	0.17	0.1	0.1	0.25	0.27	84	96	75-125	4	20	
Beryllium	mg/L	0.00022J	0.1	0.1	0.094	0.095	94	95	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2622589

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155687		155688		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2622579008 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	0.00089J	0.1	0.1	0.096	0.099	95	98	75-125	2	20		
Cobalt	mg/L	0.00099J	0.1	0.1	0.096	0.097	95	96	75-125	1	20		
Lead	mg/L	0.000061J	0.1	0.1	0.096	0.098	96	98	75-125	2	20		
Lithium	mg/L	0.0018J	0.1	0.1	0.097	0.098	95	96	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	75-125	3	20		
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2622589

QC Batch: 496582 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: 2622589001

METHOD BLANK: 2674477 Matrix: Water
Associated Lab Samples: 2622589001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	09/07/19 12:19	

LABORATORY CONTROL SAMPLE: 2674478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2674479 2674480

Parameter	Units	2622657001 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	ND	ND	0	0	90-110		10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2674481 2674482

Parameter	Units	2622587005 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	2.7	2.8	108	108	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 McDonough Background
Pace Project No.: 2622589

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 McDonough Background
Pace Project No.: 2622589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622589001	DGWA-53	EPA 3005A	34572	EPA 6020B	34602
2622589001	DGWA-53	EPA 7470A	34720	EPA 7470A	34792
2622589001	DGWA-53	EPA 300.0 Rev 2.1 1993	496582		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power Project # _____

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

WO#: **2622589**

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

PM: BM Due Date: 09/06/19
CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process, has begun

Cooler Temperature 2.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/29/19 ml

Temp should be above freezing to 6°C

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

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

Project Manager Review: _____ Date: _____

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

September 27, 2019

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

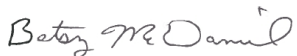
RE: Project: Plant McDonough Background
Pace Project No.: 2622590

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Ms. Jean Brown, Georgia Power_Southern Company
Ben Hodges, Georgia Power
Kristen Jurinko, Golder Associates Inc.
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta
Dominic Weatherhill, Georgia Power



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background

Pace Project No.: 2622590

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough Background

Pace Project No.: 2622590

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622590001	DGWA-53	Water	08/28/19 15:55	08/29/19 12:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background
Pace Project No.: 2622590

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622590001	DGWA-53	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622590

Sample: DGWA-53 **Lab ID: 2622590001** Collected: 08/28/19 15:55 Received: 08/29/19 12:50 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 ± 0.451 (0.394) C:81% T:NA	pCi/L	09/12/19 08:42	13982-63-3	
Radium-228	EPA 9320	1.30 ± 0.446 (0.590) C:69% T:95%	pCi/L	09/19/19 15:19	15262-20-1	
Total Radium	Total Radium Calculation	2.68 ± 0.897 (0.984)	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622590

QC Batch: 359954

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2622590001

METHOD BLANK: 1747365

Matrix: Water

Associated Lab Samples: 2622590001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0188 ± 0.324 (0.758) C:68% T:80%	pCi/L	09/19/19 15:18	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2622590

QC Batch: 359953

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2622590001

METHOD BLANK: 1747363

Matrix: Water

Associated Lab Samples: 2622590001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.412 ± 0.223 (0.263) C:94% T:NA	pCi/L	09/12/19 08:42	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough Background
Pace Project No.: 2622590

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Background

Pace Project No.: 2622590

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622590001	DGWA-53	EPA 9315	359953		
2622590001	DGWA-53	EPA 9320	359954		
2622590001	DGWA-53	Total Radium Calculation	362615		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GIA Power Project # _____

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

WO#: **2622590**

PM: **BM** Due Date: **09/27/19**

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

CLIENT: **GAPower-CCR**

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2.0

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/29/19 m

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

November 14, 2019

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

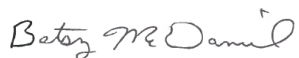
RE: Project: Plant McDonough AP-1
Pace Project No.: 2624497

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough AP-1
Pace Project No.: 2624497

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough AP-1
Pace Project No.: 2624497

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624497001	DGWC-68A	Water	10/16/19 16:10	10/17/19 12:00
2624497002	DGWC-69	Water	10/16/19 15:25	10/17/19 12:00
2624497003	FD-3	Water	10/16/19 00:00	10/17/19 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-1

Pace Project No.: 2624497

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624497001	DGWC-68A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624497002	DGWC-69	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624497003	FD-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2624497

Sample: DGWC-68A **Lab ID: 2624497001** Collected: 10/16/19 16:10 Received: 10/17/19 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.323 ± 0.276 (0.485) C:78% T:NA	pCi/L	11/06/19 08:02	13982-63-3	
Radium-228	EPA 9320	1.80 ± 0.668 (1.03) C:75% T:86%	pCi/L	11/06/19 17:26	15262-20-1	
Total Radium	Total Radium Calculation	2.12 ± 0.944 (1.52)	pCi/L	11/12/19 10:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2624497

Sample: DGWC-69 **Lab ID: 2624497002** Collected: 10/16/19 15:25 Received: 10/17/19 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.542 ± 0.303 (0.404) C:88% T:NA	pCi/L	11/06/19 08:02	13982-63-3	
Radium-228	EPA 9320	0.284 ± 0.418 (0.901) C:75% T:83%	pCi/L	11/06/19 17:26	15262-20-1	
Total Radium	Total Radium Calculation	0.826 ± 0.721 (1.31)	pCi/L	11/12/19 10:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2624497

Sample: FD-3 **Lab ID: 2624497003** Collected: 10/16/19 00:00 Received: 10/17/19 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.13 ± 0.430 (0.451) C:93% T:NA	pCi/L	11/06/19 08:02	13982-63-3	
Radium-228	EPA 9320	0.972 ± 0.595 (1.13) C:72% T:86%	pCi/L	11/06/19 17:26	15262-20-1	
Total Radium	Total Radium Calculation	2.10 ± 1.03 (1.58)	pCi/L	11/12/19 10:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2624497

QC Batch:	368259	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2624497001, 2624497002, 2624497003		

METHOD BLANK:	1786863	Matrix:	Water
Associated Lab Samples:	2624497001, 2624497002, 2624497003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.306 ± 0.244 (0.419) C:96% T:NA	pCi/L	11/06/19 08:02	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough AP-1

Pace Project No.: 2624497

QC Batch: 368258

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2624497001, 2624497002, 2624497003

METHOD BLANK: 1786861

Matrix: Water

Associated Lab Samples: 2624497001, 2624497002, 2624497003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0170 ± 0.384 (0.894) C:77% T:79%	pCi/L	11/06/19 17:17	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough AP-1

Pace Project No.: 2624497

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough AP-1

Pace Project No.: 2624497

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624497001	DGWC-68A	EPA 9315	368259		
2624497002	DGWC-69	EPA 9315	368259		
2624497003	FD-3	EPA 9315	368259		
2624497001	DGWC-68A	EPA 9320	368258		
2624497002	DGWC-69	EPA 9320	368258		
2624497003	FD-3	EPA 9320	368258		
2624497001	DGWC-68A	Total Radium Calculation	370509		
2624497002	DGWC-69	Total Radium Calculation	370509		
2624497003	FD-3	Total Radium Calculation	370509		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:

Section B
Required Project Information:

Section C
Invoice Information:

Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com
Address: 2480 Maner Road	Copy To: Golder	Company Name:
Atlanta, GA 30339		Address:
Email: jabraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:
Phone: (404)506-7239 Fax	Project Name: Plant McDonough AP-1	Pace Project Manager: betay.mcdaniel@pacelabs.com,
Requested Due Date: Standard TAT	Project #: 166849618	Pace Profile #: 332.7.2

Regulatory Agency: _____
State / Location: _____
GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) □ Sample ids must be unique	MATRIX () Drinking Water () DW () Water () WT () Waste Water () WW () Product () P () Soil/Solid () SL () Oil () OL () Wipe () WP () Air () AP () Other () OT () Tissue () TS ()	CODE ()	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Requested Analysis (Filtered (Y/N))	Residual Chlorine (Y/N)						
										Unpreserved - Ice	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			Other	Metals App. III & App. IV*	TDS, Cl, F, SO4	Radium 226/228		
1	DGWC-68A			G		10/16/2019	1810	4	X	X								X	X	X				
2	DGWC-69			G		10/16/2019	1525	4	X	X								X	X	X				
3	FD-3			G		10/16/2019	--	4	X	X								X	X	X				
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACQUIRED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS																
*App IV Metals = Do not report Sb	<i>[Signature]</i>	10/17/19	1100	<i>[Signature]</i>	10/17/19	1100																	
	<i>[Signature]</i>	10/17/19	1200	Charles Hent	10/17/19	1200	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Page 12 of 13

WO#: 2624497

2624497

TEMP in C _____

Received on _____

Sealed _____ (Y/N)

Custody _____ (Y/N)

Cooled _____ (Y/N)

Samples Intact _____ (Y/N)

DATE Signed: _____



Client Name: GA Power

WUH-2024451
PM: BM Due Date: 11/14/19
CLIENT: GRPower-GCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Proj. Due Date: _____
Proj. Name: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 214

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

Cooler Temperature 1.0°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/12/19 CD

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input 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	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. <u>Field Filtered Nets + DOC</u>
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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
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, <u>TOC</u> , O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

November 14, 2019

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

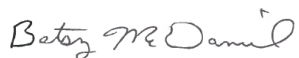
RE: Project: Plant McDonough Background
Pace Project No.: 2624495

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background
Pace Project No.: 2624495

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough Background
Pace Project No.: 2624495

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624495001	DGWA-53	Water	10/16/19 10:00	10/17/19 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background

Pace Project No.: 2624495

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624495001	DGWA-53	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2624495

Sample: DGWA-53 **Lab ID: 2624495001** Collected: 10/16/19 10:00 Received: 10/17/19 12:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.26 ± 0.449 (0.426) C:93% T:NA	pCi/L	11/06/19 08:02	13982-63-3	
Radium-228	EPA 9320	0.626 ± 0.409 (0.774) C:75% T:93%	pCi/L	11/06/19 17:17	15262-20-1	
Total Radium	Total Radium Calculation	1.89 ± 0.858 (1.20)	pCi/L	11/12/19 10:41	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2624495

QC Batch: 368259

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2624495001

METHOD BLANK: 1786863

Matrix: Water

Associated Lab Samples: 2624495001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.306 ± 0.244 (0.419) C:96% T:NA	pCi/L	11/06/19 08:02	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2624495

QC Batch: 368258

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2624495001

METHOD BLANK: 1786861

Matrix: Water

Associated Lab Samples: 2624495001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0170 ± 0.384 (0.894) C:77% T:79%	pCi/L	11/06/19 17:17	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough Background
Pace Project No.: 2624495

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Background
Pace Project No.: 2624495

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624495001	DGWA-53	EPA 9315	368259		
2624495001	DGWA-53	EPA 9320	368258		
2624495001	DGWA-53	Total Radium Calculation	370509		

REPORT OF LABORATORY ANALYSIS

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WO#: 2624495
PM: BM
Due Date: 11/14/19
CLIENT: GA Power-CCR



Client Name: GA Power

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.0°C Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 10/12/19 CDK

		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	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. <u>Field Filtered Nets + DOC</u>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, <u>DOC</u> , O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

December 30, 2019

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

RE: Project: Plant McDonough Background
Pace Project No.: 2624494

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background
Pace Project No.: 2624494

Pace Analytical Services Atlanta

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough Background
Pace Project No.: 2624494

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624494001	DGWA-53	Water	10/16/19 10:00	10/17/19 12:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background
Pace Project No.: 2624494

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624494001	DGWA-53	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Background
Pace Project No.: 2624494

Sample: DGWA-53		Lab ID: 2624494001		Collected: 10/16/19 10:00		Received: 10/17/19 12:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 23:06	7440-36-0		
Arsenic	0.0018J	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 23:06	7440-38-2		
Barium	0.077	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 23:06	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/25/19 11:41	7440-41-7		
Boron	0.059	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 23:06	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 23:06	7440-43-9		
Calcium	17.7	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 23:12	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 23:06	7440-47-3		
Cobalt	0.0090	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 23:06	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 23:06	7439-92-1		
Lithium	0.0094J	mg/L	0.030	0.00078	1	10/21/19 16:03	10/25/19 11:41	7439-93-2		
Molybdenum	0.037	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 23:06	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 23:06	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 23:06	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/23/19 10:07	10/23/19 15:34	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	126	mg/L	10.0	10.0	1		10/23/19 15:49			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	2.0	mg/L	1.0	0.024	1		10/25/19 06:39	16887-00-6		
Fluoride	0.11J	mg/L	0.30	0.029	1		10/25/19 06:39	16984-48-8		
Sulfate	15.1	mg/L	1.0	0.017	1		10/25/19 06:39	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2624494

QC Batch: 37300 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2624494001

METHOD BLANK: 168761 Matrix: Water
Associated Lab Samples: 2624494001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/23/19 14:38	

LABORATORY CONTROL SAMPLE: 168762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168763 168764

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2624388001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	97	96	75-125	2	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2624494

QC Batch: 37286 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624494001

METHOD BLANK: 168679 Matrix: Water
Associated Lab Samples: 2624494001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/23/19 18:31	
Arsenic	mg/L	ND	0.0050	0.00035	10/23/19 18:31	
Barium	mg/L	ND	0.010	0.00049	10/23/19 18:31	
Beryllium	mg/L	ND	0.0030	0.000074	10/23/19 18:31	
Boron	mg/L	ND	0.040	0.0049	10/23/19 18:31	
Cadmium	mg/L	ND	0.0025	0.00011	10/23/19 18:31	
Calcium	mg/L	ND	0.10	0.011	10/23/19 18:31	
Chromium	mg/L	ND	0.010	0.00039	10/23/19 18:31	
Cobalt	mg/L	ND	0.0050	0.00030	10/23/19 18:31	
Lead	mg/L	ND	0.0050	0.000046	10/23/19 18:31	
Lithium	mg/L	ND	0.030	0.00078	10/23/19 18:31	
Molybdenum	mg/L	ND	0.010	0.00095	10/23/19 18:31	
Selenium	mg/L	ND	0.010	0.0013	10/23/19 18:31	
Thallium	mg/L	ND	0.0010	0.000052	10/23/19 18:31	

LABORATORY CONTROL SAMPLE: 168680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681 168682

Parameter	Units	2624484003 Result	MS		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.								
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2624494

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681		168682		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2624484003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	mg/L	0.00040J	0.1	0.1	0.10	0.10	100	100	75-125	0	20		
Barium	mg/L	0.037	0.1	0.1	0.15	0.14	109	107	75-125	1	20		
Beryllium	mg/L	0.00015J	0.1	0.1	0.095	0.094	95	94	75-125	0	20		
Boron	mg/L	2.2	1	1	3.1	3.1	90	90	75-125	0	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20		
Calcium	mg/L	61.2	1	1	62.7	66.1	145	485	75-125	5	20	M6	
Chromium	mg/L	0.0064J	0.1	0.1	0.11	0.10	100	98	75-125	2	20		
Cobalt	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Lithium	mg/L	0.0022J	0.1	0.1	0.096	0.095	94	93	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.096	0.096	96	95	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2624494

QC Batch: 37419	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624494001	

LABORATORY CONTROL SAMPLE: 169291

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	391	98	84-108	

SAMPLE DUPLICATE: 169292

Parameter	Units	2624484007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 169293

Parameter	Units	2624491004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	500	501	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2624494

QC Batch: 37483 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624494001

METHOD BLANK: 169745 Matrix: Water
Associated Lab Samples: 2624494001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/25/19 02:57	
Fluoride	mg/L	ND	0.30	0.029	10/25/19 02:57	
Sulfate	mg/L	0.054J	1.0	0.017	10/25/19 02:57	

LABORATORY CONTROL SAMPLE: 169746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	5	4.8	97	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169747 169748

Parameter	Units	2624451001		169748		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	27.7	5	5	33.9	33.8	124	123	0	15	M1
Fluoride	mg/L	0.38	5	5	11.1	11.4	214	221	3	15	M1
Sulfate	mg/L	ND	5	5	ND	ND	0	0		15	M1

MATRIX SPIKE SAMPLE: 169749

Parameter	Units	2624451002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.3	5	13.6	185	90-110	M1
Fluoride	mg/L	0.57	5	10.8	204	90-110	M1
Sulfate	mg/L	ND	5	ND	0	90-110	M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough Background

Pace Project No.: 2624494

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Background

Pace Project No.: 2624494

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624494001	DGWA-53	EPA 3005A	37286	EPA 6020B	37308
2624494001	DGWA-53	EPA 7470A	37300	EPA 7470A	37416
2624494001	DGWA-53	SM 2540C	37419		
2624494001	DGWA-53	EPA 300.0	37483		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GAPower

WO#: 2624494
 PH: BN Due Date: 10/24/19
 CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 214 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 6°C

Date and Initials of person examining contents: 10/17/19 CD

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	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. <u>Field Filtered Nets + DOC</u>
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, <u>TOC</u> , O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):	_____	

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

November 14, 2019

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

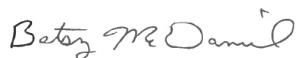
RE: Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624398

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624398

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624398001	DGWA-70A	Water	10/15/19 12:15	10/16/19 14:00
2624398002	DGWA-71	Water	10/15/19 15:08	10/16/19 14:00
2624398003	FB-1	Water	10/15/19 11:45	10/16/19 14:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624398001	DGWA-70A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624398002	DGWA-71	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624398003	FB-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWA-70A Lab ID: 2624398001 Collected: 10/15/19 12:15 Received: 10/16/19 14:00 Matrix: Water PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	0.200 ± 0.209 (0.401) C:93% T:NA	pCi/L	11/07/19 08:49	13982-63-3	
Radium-228	EPA 9320	0.119 ± 0.865 (1.98) C:63% T:78%	pCi/L	11/07/19 20:14	15262-20-1	
Total Radium	Total Radium Calculation	0.319 ± 1.07 (2.38)	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

Sample: DGWA-71 **Lab ID: 2624398002** Collected: 10/15/19 15:08 Received: 10/16/19 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.628 ± 0.348 (0.528) C:87% T:NA	pCi/L	11/07/19 08:54	13982-63-3	
Radium-228	EPA 9320	0.586 ± 0.813 (1.74) C:65% T:77%	pCi/L	11/07/19 20:14	15262-20-1	
Total Radium	Total Radium Calculation	1.21 ± 1.16 (2.27)	pCi/L	11/12/19 10:42	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

Sample: FB-1 **Lab ID: 2624398003** Collected: 10/15/19 11:45 Received: 10/16/19 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.288 ± 0.235 (0.405) C:92% T:NA	pCi/L	11/07/19 08:56	13982-63-3	
Radium-228	EPA 9320	0.864 ± 0.820 (1.68) C:70% T:77%	pCi/L	11/07/19 20:14	15262-20-1	
Total Radium	Total Radium Calculation	1.15 ± 1.06 (2.09)	pCi/L	11/12/19 10:42	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

QC Batch: 368367

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2624398001, 2624398002, 2624398003

METHOD BLANK: 1787254

Matrix: Water

Associated Lab Samples: 2624398001, 2624398002, 2624398003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.416 ± 0.262 (0.396) C:98% T:NA	pCi/L	11/07/19 07:47	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

QC Batch: 368368

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2624398001, 2624398002, 2624398003

METHOD BLANK: 1787255

Matrix: Water

Associated Lab Samples: 2624398001, 2624398002, 2624398003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.536 ± 0.405 (0.790) C:74% T:76%	pCi/L	11/07/19 14:59	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624398

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624398

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624398001	DGWA-70A	EPA 9315	368367		
2624398002	DGWA-71	EPA 9315	368367		
2624398003	FB-1	EPA 9315	368367		
2624398001	DGWA-70A	EPA 9320	368368		
2624398002	DGWA-71	EPA 9320	368368		
2624398003	FB-1	EPA 9320	368368		
2624398001	DGWA-70A	Total Radium Calculation	370512		
2624398002	DGWA-71	Total Radium Calculation	370512		
2624398003	FB-1	Total Radium Calculation	370512		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals		Report To: Joju Abraham		Attention: scslnvoices@southernco.com	
Address: 2480 Maner Road Atlanta, GA 30339		Copy To: Golder		Company Name:	
Email: jabraham@southernco.com		Purchase Order #: SCS10382775		Address:	
Phone: (404)506-7239		Project Name: Plant McDonough Background		Pace Quote:	
Fax:		Project #: 16684961		Pace Project Manager: betsy.mcdaniel@pacelabs.com.	
Requested Due Date: Standard TAT				Pace Profile #: 332.7.2	

Regulatory/Agency
State/Location
GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Metals App III and App IV Total	TDS, Cl, F, SO4	Radium 226/228	Residual Chlorine (Y/N)	
								Unpreserved - Ice	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Na2S2O3	Methanol	Other					Analysis Test
1	DGWA-70A	G		10/15/2019	1215		4	X	X									X	X	X
2	DGWA-71	G		10/15/2019	1508		4	X	X									X	X	X
3	FB-1	G		10/15/2019	1145		4	X	X									X	X	X
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

WO#: 2624398



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTEDE BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	<i>[Signature]</i> Golder	10-16-19	12:15	<i>[Signature]</i> Charles Hawke	10/16/19	12:14	1.3	Y	Y	X



Client Name: GA Power

PM: BM

Due Date: 11/13/19

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 514

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

Cooler Temperature 6.3°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/16/19

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

December 30, 2019

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

RE: Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624397

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624397

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624397001	DGWA-70A	Water	10/15/19 12:15	10/16/19 14:00
2624397002	DGWA-71	Water	10/15/19 15:08	10/16/19 14:00
2624397003	FB-1	Water	10/15/19 11:45	10/16/19 14:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624397

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624397001	DGWA-70A	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624397002	DGWA-71	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624397003	FB-1	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

Sample: DGWA-70A Lab ID: 2624397001 Collected: 10/15/19 12:15 Received: 10/16/19 14:00 Matrix: Water											
Parameters	Results	Units	Report Limit			MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A											
Antimony	ND	mg/L	0.0030	0.00027	1		10/20/19 16:44	10/22/19 22:12	7440-36-0		
Arsenic	0.00052J	mg/L	0.0050	0.00035	1		10/20/19 16:44	10/22/19 22:12	7440-38-2	B	
Barium	0.034	mg/L	0.010	0.00049	1		10/20/19 16:44	10/22/19 22:12	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1		10/20/19 16:44	10/22/19 22:12	7440-41-7		
Boron	ND	mg/L	0.040	0.0049	1		10/20/19 16:44	10/22/19 22:12	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1		10/20/19 16:44	10/22/19 22:12	7440-43-9		
Calcium	5.1	mg/L	0.10	0.011	1		10/20/19 16:44	10/22/19 22:12	7440-70-2		
Chromium	0.034	mg/L	0.010	0.00039	1		10/20/19 16:44	10/22/19 22:12	7440-47-3		
Cobalt	0.00064J	mg/L	0.0050	0.00030	1		10/20/19 16:44	10/22/19 22:12	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1		10/20/19 16:44	10/22/19 22:12	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1		10/20/19 16:44	10/22/19 22:12	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1		10/20/19 16:44	10/22/19 22:12	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1		10/20/19 16:44	10/22/19 22:12	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1		10/20/19 16:44	10/22/19 22:12	7440-28-0		
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A											
Mercury	ND	mg/L	0.00050	0.00014	1		10/23/19 10:07	10/23/19 15:06	7439-97-6		
2540C Total Dissolved Solids Analytical Method: SM 2540C											
Total Dissolved Solids	70.0	mg/L	10.0	10.0	1			10/18/19 10:46			
300.0 IC Anions 28 Days Analytical Method: EPA 300.0											
Chloride	2.2	mg/L	1.0	0.024	1			10/22/19 00:17	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1			10/22/19 00:17	16984-48-8		
Sulfate	0.16J	mg/L	1.0	0.017	1			10/22/19 00:17	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

Sample: DGWA-71 Lab ID: 2624397002 Collected: 10/15/19 15:08 Received: 10/16/19 14:00 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 22:24	7440-36-0	
Arsenic	0.00071J	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 22:24	7440-38-2	B
Barium	0.024	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 22:24	7440-39-3	
Beryllium	0.000088J	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 22:24	7440-41-7	
Boron	0.0054J	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 22:24	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 22:24	7440-43-9	
Calcium	5.1	mg/L	0.10	0.011	1	10/20/19 16:44	10/22/19 22:24	7440-70-2	
Chromium	0.0025J	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 22:24	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 22:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 22:24	7439-92-1	
Lithium	0.0012J	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 22:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 22:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 22:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 22:24	7440-28-0	
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	10/23/19 10:07	10/23/19 15:08	7439-97-6	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	89.0	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	3.3	mg/L	1.0	0.024	1		10/22/19 00:39	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/22/19 00:39	16984-48-8	
Sulfate	7.4	mg/L	1.0	0.017	1		10/22/19 00:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

Sample: FB-1		Lab ID: 2624397003		Collected: 10/15/19 11:45	Received: 10/16/19 14:00	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 22:47	7440-36-0		
Arsenic	0.00059J	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 22:47	7440-38-2	B	
Barium	ND	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 22:47	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 22:47	7440-41-7		
Boron	ND	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 22:47	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 22:47	7440-43-9		
Calcium	ND	mg/L	0.10	0.011	1	10/20/19 16:44	10/22/19 22:47	7440-70-2		
Chromium	0.00088J	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 22:47	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 22:47	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 22:47	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 22:47	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 22:47	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 22:47	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 22:47	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/23/19 10:07	10/23/19 15:11	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	18.0	mg/L	10.0	10.0	1		10/18/19 10:47			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.078J	mg/L	1.0	0.024	1		10/22/19 01:01	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/22/19 01:01	16984-48-8		
Sulfate	0.019J	mg/L	1.0	0.017	1		10/22/19 01:01	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

QC Batch: 37300 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2624397001, 2624397002, 2624397003

METHOD BLANK: 168761 Matrix: Water
Associated Lab Samples: 2624397001, 2624397002, 2624397003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/23/19 14:38	

LABORATORY CONTROL SAMPLE: 168762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168763 168764

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624388001 Result	Spike Conc.	Spike Conc.	Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	97	96	75-125	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

QC Batch: 37136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624397001, 2624397002, 2624397003

METHOD BLANK: 167849 Matrix: Water
Associated Lab Samples: 2624397001, 2624397002, 2624397003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/22/19 18:23	
Arsenic	mg/L	0.00059J	0.0050	0.00035	10/22/19 18:23	
Barium	mg/L	ND	0.010	0.00049	10/22/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000074	10/22/19 18:23	
Boron	mg/L	ND	0.040	0.0049	10/22/19 18:23	
Cadmium	mg/L	ND	0.0025	0.00011	10/22/19 18:23	
Calcium	mg/L	ND	0.10	0.011	10/22/19 18:23	
Chromium	mg/L	ND	0.010	0.00039	10/22/19 18:23	
Cobalt	mg/L	ND	0.0050	0.00030	10/22/19 18:23	
Lead	mg/L	ND	0.0050	0.000046	10/22/19 18:23	
Lithium	mg/L	ND	0.030	0.00078	10/22/19 18:23	
Molybdenum	mg/L	ND	0.010	0.00095	10/22/19 18:23	
Selenium	mg/L	ND	0.010	0.0013	10/22/19 18:23	
Thallium	mg/L	ND	0.0010	0.000052	10/22/19 18:23	

LABORATORY CONTROL SAMPLE: 167850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	80-120	
Arsenic	mg/L	0.1	0.098	98	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	0.96	96	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	0.1	0.098	98	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	0.095	95	80-120	
Molybdenum	mg/L	0.1	0.10	101	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: 168476 168477

Parameter	Units	2624389004 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	Spike Conc.							
Antimony	mg/L	ND	0.1	0.1	0.098	0.097	97	97	75-125	0	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624397

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476		168477		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2624389004 Result	MS Spike Conc.	MSD Spike Conc.									
Arsenic	mg/L	0.00063J	0.1	0.1	0.095	0.098	95	97	75-125	3	20		
Barium	mg/L	0.0091J	0.1	0.1	0.11	0.11	100	103	75-125	3	20		
Beryllium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	75-125	2	20		
Boron	mg/L	ND	1	1	0.89	0.94	88	93	75-125	6	20		
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	0	20		
Calcium	mg/L	3.7	1	1	4.5	4.5	88	82	75-125	1	20		
Chromium	mg/L	0.0083J	0.1	0.1	0.11	0.11	97	100	75-125	2	20		
Cobalt	mg/L	0.00097J	0.1	0.1	0.096	0.096	95	95	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20		
Lithium	mg/L	ND	0.1	0.1	0.092	0.094	91	93	75-125	3	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.093	0.10	93	100	75-125	7	20		
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-2,3/4
Pace Project No.: 2624397

QC Batch: 37138 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624397001, 2624397002, 2624397003

METHOD BLANK: 167857 Matrix: Water
Associated Lab Samples: 2624397001, 2624397002, 2624397003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/21/19 16:11	
Fluoride	mg/L	ND	0.30	0.029	10/21/19 16:11	
Sulfate	mg/L	ND	1.0	0.017	10/21/19 16:11	

LABORATORY CONTROL SAMPLE: 167858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.9	99	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 167859 167860

Parameter	Units	2624388001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	20.9	10	10	28.1	28.1	72	72	90-110	0	15	M1
Fluoride	mg/L	ND	10	10	10.0	10.1	100	101	90-110	1	15	

MATRIX SPIKE SAMPLE: 167861

Parameter	Units	2624389005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		2.2	10	12.2	100	90-110
Fluoride	mg/L		ND	10	10.3	103	90-110
Sulfate	mg/L		5.2	10	14.8	96	90-110

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624397

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough AP-2,3/4

Pace Project No.: 2624397

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624397001	DGWA-70A	EPA 3005A	37136	EPA 6020B	37255
2624397002	DGWA-71	EPA 3005A	37136	EPA 6020B	37255
2624397003	FB-1	EPA 3005A	37136	EPA 6020B	37255
2624397001	DGWA-70A	EPA 7470A	37300	EPA 7470A	37416
2624397002	DGWA-71	EPA 7470A	37300	EPA 7470A	37416
2624397003	FB-1	EPA 7470A	37300	EPA 7470A	37416
2624397001	DGWA-70A	SM 2540C	37181		
2624397002	DGWA-71	SM 2540C	37181		
2624397003	FB-1	SM 2540C	37181		
2624397001	DGWA-70A	EPA 300.0	37138		
2624397002	DGWA-71	EPA 300.0	37138		
2624397003	FB-1	EPA 300.0	37138		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Required Client Information:

Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: Standard TAT

Section B

Required Project Information:

Report To: Joju Abraham
 Copy To: Golder
 Purchase Order #: SCS10382775
 Project Name: Plant McDonough Background
 Project #: 16684961

Section C

Invoice Information:

Attention: scsinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com,
 Pace Profile #: 332.7.2

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX: Drinking Water: Water: Waste Water: Product: Sol/Solid: Oil: Wipe: Air: Other: Tissue	CODE: DW: WT: WW: P: SL: OL: WP: AR: OT: TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								ANALYSES TEST	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)			
										Unpreserved - Ice	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Na2S2O3	Methanol	Other		N	N	N		Metals App III and App IV Total	TDS, Cl, F, SO4	Radium 226/228
1	DGWA-70A				G	10/15/2019	1215		4	X	X								X	X	X				1
2	DGWA-71				G	10/15/2019	1508		4	X	X								X	X	X				2
3	FB-1				G	10/15/2019	1145		4	X	X								X	X	X				3
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

WO# : 2624397



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<i>[Signature]</i> Golder	10/16/19	12:15	<i>[Signature]</i> Charles Harker	10/16/19	12:14	1.3 Y Y X



Sample Condition Upon Receipt

WO#: 2624397

Client Name: GA Power

PM: BM

Due Date: 10/23/19

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 217 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 63°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: 10/16/19

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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, <u>TOC</u> , O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):	_____	

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

December 30, 2019

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

RE: Project: Plant McDonough AP-1
Pace Project No.: 2624496

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



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CERTIFICATIONS

Project: Plant McDonough AP-1
Pace Project No.: 2624496

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

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SAMPLE SUMMARY

Project: Plant McDonough AP-1

Pace Project No.: 2624496

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624496001	DGWC-68A	Water	10/16/19 16:10	10/17/19 12:00
2624496002	DGWC-69	Water	10/16/19 15:25	10/17/19 12:00
2624496003	FD-3	Water	10/16/19 00:00	10/17/19 12:00

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-1

Pace Project No.: 2624496

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624496001	DGWC-68A	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624496002	DGWC-69	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624496003	FD-3	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624496

Sample: DGWC-68A		Lab ID: 2624496001		Collected: 10/16/19 16:10		Received: 10/17/19 12:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 23:17	7440-38-2		
Barium	0.089	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 23:17	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/25/19 11:47	7440-41-7		
Boron	1.5	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 23:17	7440-42-8		
Cadmium	0.00017J	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 23:17	7440-43-9		
Calcium	49.7	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 23:23	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 23:17	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 23:17	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 23:17	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/25/19 11:47	7439-93-2		
Molybdenum	0.22	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 23:17	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 23:17	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 23:17	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/23/19 10:07	10/23/19 15:37	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	218	mg/L	10.0	10.0	1		10/23/19 15:49			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	4.2	mg/L	1.0	0.024	1		10/25/19 07:01	16887-00-6		
Fluoride	0.093J	mg/L	0.30	0.029	1		10/25/19 07:01	16984-48-8		
Sulfate	32.1	mg/L	1.0	0.017	1		10/25/19 07:01	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624496

Sample: DGWC-69 Lab ID: 2624496002 Collected: 10/16/19 15:25 Received: 10/17/19 12:00 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	0.023	mg/L	0.0050	0.00035	1	10/22/19 14:30	10/24/19 16:51	7440-38-2	
Barium	0.10	mg/L	0.010	0.00049	1	10/22/19 14:30	10/24/19 16:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/22/19 14:30	10/24/19 16:51	7440-41-7	
Boron	0.38	mg/L	0.040	0.0049	1	10/22/19 14:30	10/24/19 16:51	7440-42-8	
Cadmium	0.00017J	mg/L	0.0025	0.00011	1	10/22/19 14:30	10/24/19 16:51	7440-43-9	
Calcium	16.2	mg/L	5.0	0.55	50	10/22/19 14:30	10/24/19 16:57	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/22/19 14:30	10/24/19 16:51	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/22/19 14:30	10/24/19 16:51	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/22/19 14:30	10/24/19 16:51	7439-92-1	
Lithium	0.0032J	mg/L	0.030	0.00078	1	10/22/19 14:30	10/24/19 16:51	7439-93-2	
Molybdenum	0.010	mg/L	0.010	0.00095	1	10/22/19 14:30	10/24/19 16:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/22/19 14:30	10/24/19 16:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/22/19 14:30	10/24/19 16:51	7440-28-0	
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	10/23/19 10:07	10/23/19 15:39	7439-97-6	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	108	mg/L	10.0	10.0	1		10/23/19 15:50		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	4.7	mg/L	1.0	0.024	1		10/25/19 08:52	16887-00-6	
Fluoride	0.13J	mg/L	0.30	0.029	1		10/25/19 08:52	16984-48-8	
Sulfate	13.3	mg/L	1.0	0.017	1		10/25/19 08:52	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624496

Sample: FD-3		Lab ID: 2624496003		Collected: 10/16/19 00:00		Received: 10/17/19 12:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/22/19 14:30	10/24/19 17:53	7440-38-2		
Barium	0.089	mg/L	0.010	0.00049	1	10/22/19 14:30	10/24/19 17:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/22/19 14:30	10/24/19 17:53	7440-41-7		
Boron	1.8	mg/L	0.040	0.0049	1	10/22/19 14:30	10/24/19 17:53	7440-42-8		
Cadmium	0.00014J	mg/L	0.0025	0.00011	1	10/22/19 14:30	10/24/19 17:53	7440-43-9		
Calcium	47.2	mg/L	5.0	0.55	50	10/22/19 14:30	10/24/19 17:59	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/22/19 14:30	10/24/19 17:53	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/22/19 14:30	10/24/19 17:53	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/22/19 14:30	10/24/19 17:53	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	10/22/19 14:30	10/24/19 17:53	7439-93-2		
Molybdenum	0.21	mg/L	0.010	0.00095	1	10/22/19 14:30	10/24/19 17:53	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/22/19 14:30	10/24/19 17:53	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/22/19 14:30	10/24/19 17:53	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/23/19 10:07	10/23/19 15:42	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	247	mg/L	10.0	10.0	1		10/23/19 15:50			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	4.2	mg/L	1.0	0.024	1		10/25/19 09:14	16887-00-6		
Fluoride	0.12J	mg/L	0.30	0.029	1		10/25/19 09:14	16984-48-8		
Sulfate	32.0	mg/L	1.0	0.017	1		10/25/19 09:14	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1

Pace Project No.: 2624496

QC Batch: 37300 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2624496001, 2624496002, 2624496003

METHOD BLANK: 168761 Matrix: Water

Associated Lab Samples: 2624496001, 2624496002, 2624496003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/23/19 14:38	

LABORATORY CONTROL SAMPLE: 168762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168763 168764

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624388001 Result	Spike Conc.	Spike Conc.	Conc.								
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	97	96	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624496

QC Batch: 37286 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624496001

METHOD BLANK: 168679 Matrix: Water
Associated Lab Samples: 2624496001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	10/23/19 18:31	
Barium	mg/L	ND	0.010	0.00049	10/23/19 18:31	
Beryllium	mg/L	ND	0.0030	0.000074	10/23/19 18:31	
Boron	mg/L	ND	0.040	0.0049	10/23/19 18:31	
Cadmium	mg/L	ND	0.0025	0.00011	10/23/19 18:31	
Calcium	mg/L	ND	0.10	0.011	10/23/19 18:31	
Chromium	mg/L	ND	0.010	0.00039	10/23/19 18:31	
Cobalt	mg/L	ND	0.0050	0.00030	10/23/19 18:31	
Lead	mg/L	ND	0.0050	0.000046	10/23/19 18:31	
Lithium	mg/L	ND	0.030	0.00078	10/23/19 18:31	
Molybdenum	mg/L	ND	0.010	0.00095	10/23/19 18:31	
Selenium	mg/L	ND	0.010	0.0013	10/23/19 18:31	
Thallium	mg/L	ND	0.0010	0.000052	10/23/19 18:31	

LABORATORY CONTROL SAMPLE: 168680

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	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681 168682

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2624484003 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.00040J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Barium	mg/L	0.037	0.1	0.1	0.15	0.14	109	107	75-125	1	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.095	0.094	95	94	75-125	0	20	

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1

Pace Project No.: 2624496

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681		168682		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2624484003 Result	MS Spike Conc.	MSD Spike Conc.									
Boron	mg/L	2.2	1	1	3.1	3.1	90	90	75-125	0	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20		
Calcium	mg/L	61.2	1	1	62.7	66.1	145	485	75-125	5	20	M6	
Chromium	mg/L	0.0064J	0.1	0.1	0.11	0.10	100	98	75-125	2	20		
Cobalt	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Lithium	mg/L	0.0022J	0.1	0.1	0.096	0.095	94	93	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.096	0.096	96	95	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20		

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624496

QC Batch: 37347 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624496002, 2624496003

METHOD BLANK: 168971 Matrix: Water
Associated Lab Samples: 2624496002, 2624496003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.0010J	0.0050	0.00035	10/24/19 16:36	
Barium	mg/L	ND	0.010	0.00049	10/24/19 16:36	
Beryllium	mg/L	ND	0.0030	0.000074	10/24/19 16:36	
Boron	mg/L	ND	0.040	0.0049	10/24/19 16:36	
Cadmium	mg/L	ND	0.0025	0.00011	10/24/19 16:36	
Calcium	mg/L	ND	0.10	0.011	10/24/19 16:36	
Chromium	mg/L	ND	0.010	0.00039	10/24/19 16:36	
Cobalt	mg/L	ND	0.0050	0.00030	10/24/19 16:36	
Lead	mg/L	ND	0.0050	0.000046	10/24/19 16:36	
Lithium	mg/L	ND	0.030	0.00078	10/24/19 16:36	
Molybdenum	mg/L	ND	0.010	0.00095	10/24/19 16:36	
Selenium	mg/L	ND	0.010	0.0013	10/24/19 16:36	
Thallium	mg/L	ND	0.0010	0.000052	10/24/19 16:36	

LABORATORY CONTROL SAMPLE: 168972

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	0.11	108	80-120	
Boron	mg/L	1	1.1	107	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.10	102	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	0.11	108	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168973 168974

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2624496002 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.023	0.1	0.1	0.12	0.12	99	96	75-125	3	20	
Barium	mg/L	0.10	0.1	0.1	0.22	0.21	111	106	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.11	0.11	113	110	75-125	3	20	

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1

Pace Project No.: 2624496

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168973		168974		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2624496002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Boron	mg/L	0.38	1	1	1.5	1.5	109	109	75-125	0	20		
Cadmium	mg/L	0.00017J	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Calcium	mg/L	16.2	1	1	17.3	17.0	113	77	75-125	2	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	100	75-125	2	20		
Cobalt	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20		
Lead	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Lithium	mg/L	0.0032J	0.1	0.1	0.11	0.11	111	107	75-125	4	20		
Molybdenum	mg/L	0.010	0.1	0.1	0.11	0.11	104	101	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.095	0.093	95	93	75-125	2	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	3	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624496

QC Batch: 37483 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624496001, 2624496002, 2624496003

METHOD BLANK: 169745 Matrix: Water
Associated Lab Samples: 2624496001, 2624496002, 2624496003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/25/19 02:57	
Fluoride	mg/L	ND	0.30	0.029	10/25/19 02:57	
Sulfate	mg/L	0.054J	1.0	0.017	10/25/19 02:57	

LABORATORY CONTROL SAMPLE: 169746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	5	4.8	97	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169747 169748

Parameter	Units	2624451001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	27.7	5	5	33.9	33.8	124	123	90-110	0	15	M1
Fluoride	mg/L	0.38	5	5	11.1	11.4	214	221	90-110	3	15	M1
Sulfate	mg/L	ND	5	5	ND	ND	0	0	90-110		15	M1

MATRIX SPIKE SAMPLE: 169749

Parameter	Units	2624451002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		4.3	5	13.6	185	90-110 M1
Fluoride	mg/L		0.57	5	10.8	204	90-110 M1
Sulfate	mg/L		ND	5	ND	0	90-110 M1

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough AP-1

Pace Project No.: 2624496

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough AP-1
Pace Project No.: 2624496

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624496001	DGWC-68A	EPA 3005A	37286	EPA 6020B	37308
2624496002	DGWC-69	EPA 3005A	37347	EPA 6020B	37377
2624496003	FD-3	EPA 3005A	37347	EPA 6020B	37377
2624496001	DGWC-68A	EPA 7470A	37300	EPA 7470A	37416
2624496002	DGWC-69	EPA 7470A	37300	EPA 7470A	37416
2624496003	FD-3	EPA 7470A	37300	EPA 7470A	37416
2624496001	DGWC-68A	SM 2540C	37419		
2624496002	DGWC-69	SM 2540C	37419		
2624496003	FD-3	SM 2540C	37419		
2624496001	DGWC-68A	EPA 300.0	37483		
2624496002	DGWC-69	EPA 300.0	37483		
2624496003	FD-3	EPA 300.0	37483		

REPORT OF LABORATORY ANALYSIS

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WO#: 2624496
RM: BM
CLIENT: GAPower-CCR
Due Date: 10/24/19
Proj. Name:



Client Name: GAPower

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 214 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 6°C

Date and Initials of person examining contents: 10/12/19 CDH

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	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. <u>Field Filtered Nets + DOC</u>
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, <u>DOC</u> , O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

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

Project Manager Review: _____ Date: _____

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

December 30, 2019

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

RE: Project: Plant McDonough AP-1
Pace Project No.: 2624571

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised 11/12/19 to remove Antimony as it was not requested on the COC.

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

Sincerely,



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.

Tim Richards, Golder Associates - Atlanta
Rebecca Thornton, Pace Analytical Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough AP-1

Pace Project No.: 2624571

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

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SAMPLE SUMMARY

Project: Plant McDonough AP-1

Pace Project No.: 2624571

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624571001	DGWC-67	Water	10/17/19 15:45	10/18/19 15:40
2624571002	EB-2	Water	10/17/19 16:00	10/18/19 15:40
2624571003	DGWC-37	Water	10/18/19 09:05	10/18/19 15:40
2624571004	DGWC-38	Water	10/18/19 09:00	10/18/19 15:40
2624571005	DGWC-39	Water	10/18/19 10:40	10/18/19 15:40
2624571006	DGWC-40	Water	10/18/19 12:45	10/18/19 15:40
2624571007	EB-3	Water	10/18/19 13:25	10/18/19 15:40

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SAMPLE ANALYTE COUNT

Project: Plant McDonough AP-1

Pace Project No.: 2624571

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624571001	DGWC-67	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624571002	EB-2	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624571003	DGWC-37	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624571004	DGWC-38	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624571005	DGWC-39	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624571006	DGWC-40	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624571007	EB-3	EPA 6020B	CSW	13
		EPA 7470A	DRB	1
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624571

Sample: DGWC-67 Lab ID: 2624571001 Collected: 10/17/19 15:45 Received: 10/18/19 15:40 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	0.00042J	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 21:36	7440-38-2	B
Barium	0.10	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 21:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 21:36	7440-41-7	
Boron	3.6	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 21:36	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 21:36	7440-43-9	
Calcium	42.4	mg/L	5.0	0.55	50	10/23/19 16:22	10/24/19 21:42	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 21:36	7440-47-3	
Cobalt	0.0013J	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 21:36	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 21:36	7439-92-1	
Lithium	0.0047J	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 21:36	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 21:36	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 21:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 21:36	7440-28-0	
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:12	7439-97-6	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	281	mg/L	10.0	10.0	1		10/25/19 14:38		H1
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	6.9	mg/L	1.0	0.024	1		10/29/19 07:51	16887-00-6	
Fluoride	0.038J	mg/L	0.30	0.029	1		10/29/19 07:51	16984-48-8	
Sulfate	99.4	mg/L	10.0	0.17	10		10/29/19 20:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624571

Sample: EB-2		Lab ID: 2624571002		Collected: 10/17/19 16:00	Received: 10/18/19 15:40	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 21:47	7440-38-2	B	
Barium	ND	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 21:47	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 21:47	7440-41-7		
Boron	ND	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 21:47	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 21:47	7440-43-9		
Calcium	0.032J	mg/L	0.10	0.011	1	10/23/19 16:22	10/24/19 21:47	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 21:47	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 21:47	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 21:47	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 21:47	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 21:47	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 21:47	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 21:47	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:14	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/25/19 14:38		H1	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	0.028J	mg/L	1.0	0.024	1		10/29/19 09:20	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		10/29/19 09:20	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/29/19 09:20	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624571

Sample: DGWC-37 Lab ID: 2624571003 Collected: 10/18/19 09:05 Received: 10/18/19 15:40 Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A										
Arsenic	ND	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 21:53	7440-38-2		
Barium	0.079	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 21:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 21:53	7440-41-7		
Boron	1.3	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 21:53	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 21:53	7440-43-9		
Calcium	48.8	mg/L	5.0	0.55	50	10/23/19 16:22	10/24/19 21:59	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 21:53	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 21:53	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 21:53	7439-92-1		
Lithium	0.0026J	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 21:53	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 21:53	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 21:53	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 21:53	7440-28-0		
7470 Mercury Analytical Method: EPA 7470A Preparation Method: EPA 7470A										
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:17	7439-97-6		
2540C Total Dissolved Solids Analytical Method: SM 2540C										
Total Dissolved Solids	269	mg/L	10.0	10.0	1		10/25/19 14:38			
300.0 IC Anions 28 Days Analytical Method: EPA 300.0										
Chloride	5.8	mg/L	1.0	0.024	1		10/29/19 09:42	16887-00-6		
Fluoride	0.075J	mg/L	0.30	0.029	1		10/29/19 09:42	16984-48-8		
Sulfate	76.4	mg/L	10.0	0.17	10		10/29/19 22:15	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1

Pace Project No.: 2624571

Sample: DGWC-38		Lab ID: 2624571004		Collected: 10/18/19 09:00		Received: 10/18/19 15:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 22:05	7440-38-2	
Barium	0.032	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 22:05	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 22:05	7440-41-7	
Boron	3.1	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 22:05	7440-42-8	
Cadmium	0.00016J	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 22:05	7440-43-9	
Calcium	83.8	mg/L	5.0	0.55	50	10/23/19 16:22	10/24/19 22:10	7440-70-2	
Chromium	0.00092J	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 22:05	7440-47-3	
Cobalt	0.0016J	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 22:05	7440-48-4	
Lead	0.000074J	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 22:05	7439-92-1	
Lithium	0.0032J	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 22:05	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 22:05	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 22:05	7782-49-2	
Thallium	0.00010J	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 22:05	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:24	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	494	mg/L	10.0	10.0	1		10/25/19 14:38		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.6	mg/L	1.0	0.024	1		10/29/19 10:04	16887-00-6	
Fluoride	0.073J	mg/L	0.30	0.029	1		10/29/19 10:04	16984-48-8	
Sulfate	239	mg/L	20.0	0.34	20		10/29/19 22:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624571

Sample: DGWC-39		Lab ID: 2624571005		Collected: 10/18/19 10:40		Received: 10/18/19 15:40		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.00075J	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 22:28	7440-38-2	B	
Barium	0.10	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 22:28	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 22:28	7440-41-7		
Boron	3.6	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 22:28	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 22:28	7440-43-9		
Calcium	95.0	mg/L	5.0	0.55	50	10/23/19 16:22	10/24/19 22:33	7440-70-2		
Chromium	ND	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 22:28	7440-47-3		
Cobalt	0.0070	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 22:28	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 22:28	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 22:28	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 22:28	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 22:28	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 22:28	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:26	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
Total Dissolved Solids	489	mg/L	10.0	10.0	1		10/25/19 14:39			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	8.0	mg/L	1.0	0.024	1		10/29/19 10:26	16887-00-6		
Fluoride	0.14J	mg/L	0.30	0.029	1		10/29/19 10:26	16984-48-8		
Sulfate	182	mg/L	20.0	0.34	20		10/29/19 22:59	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1

Pace Project No.: 2624571

Sample: DGWC-40		Lab ID: 2624571006		Collected: 10/18/19 12:45		Received: 10/18/19 15:40		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 22:39	7440-38-2	
Barium	0.019	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 22:39	7440-39-3	
Beryllium	0.0033	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 22:39	7440-41-7	
Boron	0.90	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 22:39	7440-42-8	
Cadmium	0.00088J	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 22:39	7440-43-9	
Calcium	43.7	mg/L	5.0	0.55	50	10/23/19 16:22	10/24/19 22:45	7440-70-2	
Chromium	0.00078J	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 22:39	7440-47-3	
Cobalt	0.043	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 22:39	7440-48-4	
Lead	0.00015J	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 22:39	7439-92-1	
Lithium	0.0024J	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 22:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 22:39	7439-98-7	
Selenium	0.0027J	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 22:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 22:39	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:29	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	360	mg/L	10.0	10.0	1		10/25/19 14:39		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	19.2	mg/L	1.0	0.024	1		10/29/19 10:48	16887-00-6	
Fluoride	0.13J	mg/L	0.30	0.029	1		10/29/19 10:48	16984-48-8	
Sulfate	205	mg/L	20.0	0.34	20		10/29/19 23:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough AP-1
Pace Project No.: 2624571

Sample: EB-3		Lab ID: 2624571007		Collected: 10/18/19 13:25		Received: 10/18/19 15:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.0050	0.00035	1	10/23/19 16:22	10/24/19 22:50	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/23/19 16:22	10/24/19 22:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/23/19 16:22	10/24/19 22:50	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/23/19 16:22	10/24/19 22:50	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/23/19 16:22	10/24/19 22:50	7440-43-9	
Calcium	0.038J	mg/L	0.10	0.011	1	10/23/19 16:22	10/24/19 22:50	7440-70-2	
Chromium	0.00048J	mg/L	0.010	0.00039	1	10/23/19 16:22	10/24/19 22:50	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/23/19 16:22	10/24/19 22:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/23/19 16:22	10/24/19 22:50	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/23/19 16:22	10/24/19 22:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/23/19 16:22	10/24/19 22:50	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/23/19 16:22	10/24/19 22:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/23/19 16:22	10/24/19 22:50	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.00014	1	10/24/19 17:51	10/25/19 17:31	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/25/19 14:39		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	0.028J	mg/L	1.0	0.024	1		10/29/19 11:11	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/29/19 11:11	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/29/19 11:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624571

QC Batch: 37509 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

METHOD BLANK: 170040 Matrix: Water
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/25/19 16:27	

LABORATORY CONTROL SAMPLE: 170041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170042 170043

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624567002 Result	Spike Conc.	Spike Conc.	Conc.								
Mercury	mg/L	0.00042J	0.0025	0.0025	0.0030	0.0030	104	101	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624571

QC Batch: 37435 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

METHOD BLANK: 169374 Matrix: Water
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.00059J	0.0050	0.00035	10/24/19 17:54	
Barium	mg/L	ND	0.010	0.00049	10/24/19 17:54	
Beryllium	mg/L	ND	0.0030	0.000074	10/24/19 17:54	
Boron	mg/L	ND	0.040	0.0049	10/24/19 17:54	
Cadmium	mg/L	ND	0.0025	0.00011	10/24/19 17:54	
Calcium	mg/L	ND	0.10	0.011	10/24/19 17:54	
Chromium	mg/L	ND	0.010	0.00039	10/24/19 17:54	
Cobalt	mg/L	ND	0.0050	0.00030	10/24/19 17:54	
Lead	mg/L	ND	0.0050	0.000046	10/24/19 17:54	
Lithium	mg/L	ND	0.030	0.00078	10/24/19 17:54	
Molybdenum	mg/L	ND	0.010	0.00095	10/24/19 17:54	
Selenium	mg/L	ND	0.010	0.0013	10/24/19 17:54	
Thallium	mg/L	ND	0.0010	0.000052	10/24/19 17:54	

LABORATORY CONTROL SAMPLE: 169375

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.093	93	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.096	96	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.095	95	80-120	
Lithium	mg/L	0.1	0.10	101	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	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169376 169377

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624567001 Result	Spike Conc.	Spike Conc.	Conc.								
Arsenic	mg/L	ND	0.1	0.1	0.098	0.096	98	96	75-125	2	20		
Barium	mg/L	0.022	0.1	0.1	0.12	0.12	102	101	75-125	0	20		
Beryllium	mg/L	ND	0.1	0.1	0.097	0.095	96	95	75-125	1	20		

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1

Pace Project No.: 2624571

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169376		169377		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2624567001 Result	MS Spike Conc.	MSD Spike Conc.									
Boron	mg/L	0.73	1	1	1.8	1.8	102	105	75-125	1	20		
Cadmium	mg/L	0.00013J	0.1	0.1	0.098	0.096	98	96	75-125	2	20		
Calcium	mg/L	47.2	1	1	48.1	46.8	90	-44	75-125	3	20	M6	
Chromium	mg/L	0.00046J	0.1	0.1	0.10	0.098	101	98	75-125	3	20		
Cobalt	mg/L	0.0084	0.1	0.1	0.11	0.11	101	99	75-125	2	20		
Lead	mg/L	0.000086J	0.1	0.1	0.094	0.092	94	91	75-125	2	20		
Lithium	mg/L	0.029J	0.1	0.1	0.13	0.12	99	96	75-125	2	20		
Molybdenum	mg/L	0.0018J	0.1	0.1	0.10	0.10	99	100	75-125	2	20		
Selenium	mg/L	0.0051J	0.1	0.1	0.10	0.10	97	95	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.094	0.092	94	92	75-125	2	20		

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624571

QC Batch: 37487 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

LABORATORY CONTROL SAMPLE: 169757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	392	98	84-108	

SAMPLE DUPLICATE: 169758

Parameter	Units	2624567001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	302	288	5	10	H1

SAMPLE DUPLICATE: 170356

Parameter	Units	2624567012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	593	591	0	10	

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QUALITY CONTROL DATA

Project: Plant McDonough AP-1
Pace Project No.: 2624571

QC Batch: 37578 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

METHOD BLANK: 170487 Matrix: Water
Associated Lab Samples: 2624571001, 2624571002, 2624571003, 2624571004, 2624571005, 2624571006, 2624571007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/29/19 00:30	
Fluoride	mg/L	ND	0.30	0.029	10/29/19 00:30	
Sulfate	mg/L	ND	1.0	0.017	10/29/19 00:30	

LABORATORY CONTROL SAMPLE: 170488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	9.6	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170489 170490

Parameter	Units	2624567001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.8	10	10	12.8	12.8	100	100	90-110	0	15	
Fluoride	mg/L	0.042J	10	10	10.0	10.0	100	100	90-110	0	15	

MATRIX SPIKE SAMPLE: 170491

Parameter	Units	2624567002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		10	10	16.9	69	90-110 M1
Fluoride	mg/L		1.2	10	ND	-12	90-110 M1
Sulfate	mg/L		331	10	ND	-3310	90-110 M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McDonough AP-1

Pace Project No.: 2624571

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.

H1 Analysis conducted outside the EPA method holding time.

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough AP-1

Pace Project No.: 2624571

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624571001	DGWC-67	EPA 3005A	37435	EPA 6020B	37459
2624571002	EB-2	EPA 3005A	37435	EPA 6020B	37459
2624571003	DGWC-37	EPA 3005A	37435	EPA 6020B	37459
2624571004	DGWC-38	EPA 3005A	37435	EPA 6020B	37459
2624571005	DGWC-39	EPA 3005A	37435	EPA 6020B	37459
2624571006	DGWC-40	EPA 3005A	37435	EPA 6020B	37459
2624571007	EB-3	EPA 3005A	37435	EPA 6020B	37459
2624571001	DGWC-67	EPA 7470A	37509	EPA 7470A	37584
2624571002	EB-2	EPA 7470A	37509	EPA 7470A	37584
2624571003	DGWC-37	EPA 7470A	37509	EPA 7470A	37584
2624571004	DGWC-38	EPA 7470A	37509	EPA 7470A	37584
2624571005	DGWC-39	EPA 7470A	37509	EPA 7470A	37584
2624571006	DGWC-40	EPA 7470A	37509	EPA 7470A	37584
2624571007	EB-3	EPA 7470A	37509	EPA 7470A	37584
2624571001	DGWC-67	SM 2540C	37487		
2624571002	EB-2	SM 2540C	37487		
2624571003	DGWC-37	SM 2540C	37487		
2624571004	DGWC-38	SM 2540C	37487		
2624571005	DGWC-39	SM 2540C	37487		
2624571006	DGWC-40	SM 2540C	37487		
2624571007	EB-3	SM 2540C	37487		
2624571001	DGWC-67	EPA 300.0	37578		
2624571002	EB-2	EPA 300.0	37578		
2624571003	DGWC-37	EPA 300.0	37578		
2624571004	DGWC-38	EPA 300.0	37578		
2624571005	DGWC-39	EPA 300.0	37578		
2624571006	DGWC-40	EPA 300.0	37578		
2624571007	EB-3	EPA 300.0	37578		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GIA Powere 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 _____

Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.2 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: <u>10/18/19 MK</u>
--

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

February 03, 2020

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

RE: Project: PLANT MCDONOUGH RADS
Pace Project No.: 2627493

Dear Joju Abraham:

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



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

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH RADS
Pace Project No.: 2627493

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

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2627493001	DGWC-37	Water	01/06/20 11:40	01/06/20 16:00
2627493002	DGWC-38	Water	01/06/20 11:56	01/06/20 16:00
2627493003	DGWC-39	Water	01/06/20 14:18	01/06/20 16:00
2627493004	DGWC-40	Water	01/06/20 13:55	01/06/20 16:00
2627493005	DGWC-67	Water	01/06/20 12:35	01/06/20 16:00
2627493006	FD-1	Water	01/06/20 00:00	01/06/20 16:00
2627493007	FB-1	Water	01/06/20 12:15	01/06/20 16:00
2627493008	EB-1	Water	01/06/20 15:00	01/06/20 16:00

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH RADS
Pace Project No.: 2627493

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2627493001	DGWC-37	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493002	DGWC-38	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493003	DGWC-39	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493004	DGWC-40	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493005	DGWC-67	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493006	FD-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493007	FB-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2627493008	EB-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: DGWC-37 **Lab ID: 2627493001** Collected: 01/06/20 11:40 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	1.05 ± 0.438 (0.453) C:84% T:NA	pCi/L	01/17/20 08:21	13982-63-3	
Radium-228	EPA 9320	0.956 ± 0.407 (0.640) C:74% T:84%	pCi/L	01/23/20 15:20	15262-20-1	
Total Radium	Total Radium Calculation	2.01 ± 0.845 (1.09)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: DGWC-38 **Lab ID: 2627493002** Collected: 01/06/20 11:56 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.151 ± 0.218 (0.467) C:89% T:NA	pCi/L	01/17/20 08:22	13982-63-3	
Radium-228	EPA 9320	0.376 ± 0.282 (0.541) C:76% T:87%	pCi/L	01/23/20 15:20	15262-20-1	
Total Radium	Total Radium Calculation	0.527 ± 0.500 (1.01)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: DGWC-39 **Lab ID: 2627493003** Collected: 01/06/20 14:18 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.527 ± 0.299 (0.419) C:96% T:NA	pCi/L	01/17/20 08:22	13982-63-3	
Radium-228	EPA 9320	0.876 ± 0.415 (0.691) C:74% T:80%	pCi/L	01/23/20 15:20	15262-20-1	
Total Radium	Total Radium Calculation	1.40 ± 0.714 (1.11)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: DGWC-40 **Lab ID: 2627493004** Collected: 01/06/20 13:55 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.520 ± 0.342 (0.576) C:93% T:NA	pCi/L	01/17/20 08:22	13982-63-3	
Radium-228	EPA 9320	1.08 ± 0.487 (0.804) C:72% T:75%	pCi/L	01/23/20 15:20	15262-20-1	
Total Radium	Total Radium Calculation	1.60 ± 0.829 (1.38)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: DGWC-67 **Lab ID: 2627493005** Collected: 01/06/20 12:35 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.313 ± 0.291 (0.548) C:82% T:NA	pCi/L	01/17/20 08:23	13982-63-3	
Radium-228	EPA 9320	0.652 ± 0.348 (0.610) C:76% T:88%	pCi/L	01/23/20 15:21	15262-20-1	
Total Radium	Total Radium Calculation	0.965 ± 0.639 (1.16)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: FD-1 **Lab ID: 2627493006** Collected: 01/06/20 00:00 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.507 ± 0.317 (0.469) C:83% T:NA	pCi/L	01/17/20 08:23	13982-63-3	
Radium-228	EPA 9320	0.711 ± 0.347 (0.574) C:74% T:86%	pCi/L	01/23/20 15:21	15262-20-1	
Total Radium	Total Radium Calculation	1.22 ± 0.664 (1.04)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: FB-1 **Lab ID: 2627493007** Collected: 01/06/20 12:15 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.310 ± 0.285 (0.534) C:84% T:NA	pCi/L	01/17/20 08:23	13982-63-3	
Radium-228	EPA 9320	0.260 ± 0.301 (0.630) C:77% T:84%	pCi/L	01/23/20 15:21	15262-20-1	
Total Radium	Total Radium Calculation	0.570 ± 0.586 (1.16)	pCi/L	01/27/20 09:11	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

Sample: EB-1 **Lab ID: 2627493008** Collected: 01/06/20 15:00 Received: 01/06/20 16:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.196 ± 0.257 (0.540) C:80% T:NA	pCi/L	01/17/20 08:23	13982-63-3	
Radium-228	EPA 9320	0.690 ± 0.427 (0.794) C:73% T:74%	pCi/L	01/23/20 15:21	15262-20-1	
Total Radium	Total Radium Calculation	0.886 ± 0.684 (1.33)	pCi/L	01/27/20 09:11	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

QC Batch: 379570

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2627493001, 2627493002, 2627493003, 2627493004, 2627493005, 2627493006, 2627493007, 2627493008

METHOD BLANK: 1840224

Matrix: Water

Associated Lab Samples: 2627493001, 2627493002, 2627493003, 2627493004, 2627493005, 2627493006, 2627493007, 2627493008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.235 ± 0.354 (0.764) C:74% T:88%	pCi/L	01/23/20 15:17	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

QC Batch:	379543	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2627493001, 2627493002, 2627493003, 2627493004, 2627493005, 2627493006, 2627493007, 2627493008		

METHOD BLANK:	1840151	Matrix:	Water
Associated Lab Samples:	2627493001, 2627493002, 2627493003, 2627493004, 2627493005, 2627493006, 2627493007, 2627493008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.178 ± 0.213 (0.422) C:89% T:NA	pCi/L	01/17/20 08:21	

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

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QUALIFIERS

Project: PLANT MCDONOUGH RADS

Pace Project No.: 2627493

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH RADS
Pace Project No.: 2627493

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2627493001	DGWC-37	EPA 9315	379543		
2627493002	DGWC-38	EPA 9315	379543		
2627493003	DGWC-39	EPA 9315	379543		
2627493004	DGWC-40	EPA 9315	379543		
2627493005	DGWC-67	EPA 9315	379543		
2627493006	FD-1	EPA 9315	379543		
2627493007	FB-1	EPA 9315	379543		
2627493008	EB-1	EPA 9315	379543		
2627493001	DGWC-37	EPA 9320	379570		
2627493002	DGWC-38	EPA 9320	379570		
2627493003	DGWC-39	EPA 9320	379570		
2627493004	DGWC-40	EPA 9320	379570		
2627493005	DGWC-67	EPA 9320	379570		
2627493006	FD-1	EPA 9320	379570		
2627493007	FB-1	EPA 9320	379570		
2627493008	EB-1	EPA 9320	379570		
2627493001	DGWC-37	Total Radium Calculation	381188		
2627493002	DGWC-38	Total Radium Calculation	381188		
2627493003	DGWC-39	Total Radium Calculation	381188		
2627493004	DGWC-40	Total Radium Calculation	381188		
2627493005	DGWC-67	Total Radium Calculation	381188		
2627493006	FD-1	Total Radium Calculation	381188		
2627493007	FB-1	Total Radium Calculation	381188		
2627493008	EB-1	Total Radium Calculation	381188		

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Sample Condition Upon Receipt

WO#: 2627493

Client Name: Golder Assoc.

PM: KH Due Date: 02/04/20
CLIENT: 26-GA Power

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 plastic bags

Thermometer Used JHR214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 7.3/8.7 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: KW 1/6/20

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. NO MATRIX PROVIDED ON COC.
-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 <u>KW 1/6/20</u> 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: _____

3000 W28

Project Manager Review: _____ Date: _____

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

April 14, 2020

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

RE: Project: Plant McDonough Background
Pace Project No.: 2629679

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 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 - Asheville
- Pace Analytical Services - Atlanta, GA
- 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
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McDonough Background
Pace Project No.: 2629679

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 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

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 McDonough Background

Pace Project No.: 2629679

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629679001	DGWA-70A	Water	03/02/20 14:45	03/03/20 11:11
2629679002	DGWA-71	Water	03/02/20 16:20	03/03/20 11:11

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McDonough Background
Pace Project No.: 2629679

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
2629679001	DGWA-70A	EPA 6010D	DRB	1	PASI-GA		
		EPA 6020B	CSW	13	PASI-GA		
		EPA 7470A	DRB	1	PASI-GA		
		EPA 9315	LAL	1	PASI-PA		
		EPA 9320	VAL	1	PASI-PA		
		Total Radium Calculation	CMC	1	PASI-PA		
		SM 2540C	NJ1	1	PASI-GA		
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A		
		2629679002	DGWA-71	EPA 6010D	DRB	1	PASI-GA
				EPA 6020B	CSW	13	PASI-GA
EPA 7470A	DRB			1	PASI-GA		
EPA 9315	LAL			1	PASI-PA		
EPA 9320	VAL			1	PASI-PA		
Total Radium Calculation	CMC			1	PASI-PA		
SM 2540C	NJ1			1	PASI-GA		
EPA 300.0 Rev 2.1 1993	CDC			3	PASI-A		

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Background
Pace Project No.: 2629679

Sample: DGWA-70A		Lab ID: 2629679001		Collected: 03/02/20 14:45		Received: 03/03/20 11:11		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	5.54	Std. Units			1		03/03/20 14:06		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	5.3	mg/L	1.0	0.14	1	03/10/20 18:00	03/11/20 17:29	7440-70-2	M1
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 17:49	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 17:49	7440-38-2	
Barium	0.035	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 17:49	7440-39-3	
Beryllium	0.000096J	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 17:49	7440-41-7	
Boron	0.0055J	mg/L	0.10	0.0049	1	03/05/20 22:19	03/10/20 17:49	7440-42-8	
Cadmium	0.00041J	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 17:49	7440-43-9	
Chromium	0.0013J	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 17:49	7440-47-3	
Cobalt	0.00037J	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 17:49	7440-48-4	
Lead	0.000074J	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 17:49	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 17:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 17:49	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 17:49	7782-49-2	
Thallium	0.000078J	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 17:49	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/04/20 15:00	03/05/20 15:14	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	52.0	mg/L	10.0	10.0	1		03/06/20 12:44		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.9	mg/L	1.0	0.60	1		03/10/20 15:50	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/10/20 15:50	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/10/20 15:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McDonough Background

Pace Project No.: 2629679

Sample: DGWA-71		Lab ID: 2629679002		Collected: 03/02/20 16:20		Received: 03/03/20 11:11		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	5.77	Std. Units			1		03/03/20 14:07		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Atlanta, GA									
Calcium	5.8	mg/L	1.0	0.14	1	03/10/20 18:00	03/11/20 17:58	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Atlanta, GA									
Antimony	0.0018J	mg/L	0.0030	0.00027	1	03/05/20 22:19	03/10/20 18:12	7440-36-0	B
Arsenic	ND	mg/L	0.0050	0.00035	1	03/05/20 22:19	03/10/20 18:12	7440-38-2	
Barium	0.026	mg/L	0.010	0.00049	1	03/05/20 22:19	03/10/20 18:12	7440-39-3	
Beryllium	0.00010J	mg/L	0.0030	0.000074	1	03/05/20 22:19	03/10/20 18:12	7440-41-7	
Boron	0.010J	mg/L	0.10	0.0049	1	03/05/20 22:19	03/10/20 18:12	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:19	03/10/20 18:12	7440-43-9	
Chromium	0.00045J	mg/L	0.010	0.00039	1	03/05/20 22:19	03/10/20 18:12	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:19	03/10/20 18:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:19	03/10/20 18:12	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00078	1	03/05/20 22:19	03/10/20 18:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:19	03/10/20 18:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:19	03/10/20 18:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:19	03/10/20 18:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/04/20 15:00	03/05/20 15:24	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	67.0	mg/L	10.0	10.0	1		03/06/20 12:44		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	3.0	mg/L	1.0	0.60	1		03/10/20 16:04	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/10/20 16:04	16984-48-8	
Sulfate	8.5	mg/L	1.0	0.50	1		03/10/20 16:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2629679

QC Batch: 44210 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2629679001, 2629679002

METHOD BLANK: 202602 Matrix: Water
Associated Lab Samples: 2629679001, 2629679002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.14	03/05/20 14:53	

LABORATORY CONTROL SAMPLE: 202603

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.6	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 202604 202605

Parameter	Units	202604		202605		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	ND	2.5	2.5	2.6	2.6	106	106	75-125	0	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2629679

QC Batch: 44425 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2629679001, 2629679002

METHOD BLANK: 203825 Matrix: Water
Associated Lab Samples: 2629679001, 2629679002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	03/11/20 17:22	

LABORATORY CONTROL SAMPLE: 203826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203827 203828

Parameter	Units	203827		203828		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	5.3	1	1	6.6	6.3	129	101	75-125	4	20 M1

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2629679

QC Batch: 44279 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629679001, 2629679002

METHOD BLANK: 202988 Matrix: Water
Associated Lab Samples: 2629679001, 2629679002

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	
Boron	mg/L	ND	0.10	0.0049	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	
Boron	mg/L	1	1.1	106	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	2629679001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.1	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	

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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2629679

Parameter	Units	202990		202991		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629679001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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		
Boron	mg/L	0.0055J	1	1	1.1	1.1	106	107	75-125	1	20		
Cadmium	mg/L	0.00041J	0.1	0.1	0.10	0.11	102	105	75-125	2	20		
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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QUALITY CONTROL DATA

Project: Plant McDonough Background

Pace Project No.: 2629679

QC Batch: 44309	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629679001, 2629679002

LABORATORY CONTROL SAMPLE: 203157

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 203158

Parameter	Units	2629679001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	52.0	49.0	6	10	

SAMPLE DUPLICATE: 203159

Parameter	Units	2629766004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	63.0	67.0	6	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McDonough Background
Pace Project No.: 2629679

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
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 2629679001, 2629679002

METHOD BLANK: 2826400 Matrix: Water
Associated Lab Samples: 2629679001, 2629679002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/10/20 12:19	
Fluoride	mg/L	ND	0.10	0.050	03/10/20 12:19	
Sulfate	mg/L	ND	1.0	0.50	03/10/20 12:19	

LABORATORY CONTROL SAMPLE: 2826401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.3	97	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	50.2	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826402 2826403

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92468470002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	7.4	50	50	54.1	55.2	94	96	90-110	2	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	96	99	90-110	3	10		
Sulfate	mg/L	10.9	50	50	57.3	58.5	93	95	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826404 2826405

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629679002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.0	50	50	49.1	53.1	92	100	90-110	8	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.7	99	108	90-110	8	10		
Sulfate	mg/L	8.5	50	50	55.5	59.3	94	102	90-110	7	10		

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2629679

Sample: DGWA-70A **Lab ID: 2629679001** Collected: 03/02/20 14:45 Received: 03/03/20 11:11 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	0.267 ± 0.293 (0.603) C:94% T:NA	pCi/L	03/12/20 08:27	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.152 ± 0.349 (0.774) C:77% T:89%	pCi/L	03/24/20 19:43	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.419 ± 0.642 (1.38)	pCi/L	03/27/20 14:53	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2629679

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWA-71 Lab ID: 2629679002 Collected: 03/02/20 16:20 Received: 03/03/20 11:11 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.752 ± 0.337 (0.312) C:94% T:NA	pCi/L	03/12/20 08:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.545 ± 0.424 (0.835) C:78% T:81%	pCi/L	03/24/20 19:44	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.30 ± 0.761 (1.15)	pCi/L	03/27/20 14:53	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2629679

QC Batch: 387205

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629679001, 2629679002

METHOD BLANK: 1875683

Matrix: Water

Associated Lab Samples: 2629679001, 2629679002

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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McDonough Background

Pace Project No.: 2629679

QC Batch: 387208

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629679001, 2629679002

METHOD BLANK: 1875688

Matrix: Water

Associated Lab Samples: 2629679001, 2629679002

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	

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QUALIFIERS

Project: Plant McDonough Background

Pace Project No.: 2629679

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McDonough Background
Pace Project No.: 2629679

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629679001	DGWA-70A				
2629679002	DGWA-71				
2629679001	DGWA-70A	EPA 3010A	44425	EPA 6010D	44437
2629679002	DGWA-71	EPA 3010A	44425	EPA 6010D	44437
2629679001	DGWA-70A	EPA 3005A	44279	EPA 6020B	44313
2629679002	DGWA-71	EPA 3005A	44279	EPA 6020B	44313
2629679001	DGWA-70A	EPA 7470A	44210	EPA 7470A	44266
2629679002	DGWA-71	EPA 7470A	44210	EPA 7470A	44266
2629679001	DGWA-70A	EPA 9315	387205		
2629679002	DGWA-71	EPA 9315	387205		
2629679001	DGWA-70A	EPA 9320	387208		
2629679002	DGWA-71	EPA 9320	387208		
2629679001	DGWA-70A	Total Radium Calculation	390177		
2629679002	DGWA-71	Total Radium Calculation	390177		
2629679001	DGWA-70A	SM 2540C	44309		
2629679002	DGWA-71	SM 2540C	44309		
2629679001	DGWA-70A	EPA 300.0 Rev 2.1 1993	529175		
2629679002	DGWA-71	EPA 300.0 Rev 2.1 1993	529175		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: Georgia Power

WO#: 2629679
PM: KH Due Date: 03/17/20
CLIENT: 26-GA Power

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

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used THA 214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.8 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: HW 3/3/20

Table with 16 rows of sample condition checks. Columns include description, Yes/No/N/A checkboxes, and a numbered list (1-16). Includes handwritten notes like '10 day TAT' and 'WT'.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

May 27, 2020

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

RE: Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 04, 2020 and March 09, 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
- 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
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

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 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

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 MCDONOUGH AP-1
Pace Project No.: 2629779

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629779001	DGWC-40	Water	03/04/20 15:15	03/04/20 17:45
2629779002	DGWC-37	Water	03/09/20 15:05	03/09/20 17:49
2629779003	DGWC-38	Water	03/09/20 13:55	03/09/20 17:49
2629779004	DGWC-39	Water	03/09/20 11:45	03/09/20 17:49
2629779005	DGWC-67	Water	03/09/20 16:00	03/09/20 17:49
2629779006	DGWC-68A	Water	03/09/20 15:13	03/09/20 17:49
2629779007	DGWC-69	Water	03/09/20 14:23	03/09/20 17:49
2629779008	EB-3	Water	03/09/20 16:15	03/09/20 17:49
2629779009	FD-3	Water	03/09/20 00:00	03/09/20 17:49

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629779001	DGWC-40	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
2629779002	DGWC-37	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DRB	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779003	DGWC-38	SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2629779004	DGWC-39	Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
2629779005	DGWC-67	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
2629779005	DGWC-67	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		EPA 6010D	DRB	2	PASI-GA

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629779006	DGWC-68A	Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2629779007	DGWC-69	Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	DRB	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2629779008	EB-3	Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	KLH	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
2629779009	FD-3	Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	KLH	2	PASI-GA
		EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	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

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
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PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-40		Lab ID: 2629779001		Collected: 03/04/20 15:15		Received: 03/04/20 17:45		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	4.64	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	49.6	mg/L	1.0	0.14	1	03/10/20 18:30	03/11/20 20:56	7440-70-2	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Arsenic	0.00065J	mg/L	0.0050	0.00035	1	03/10/20 20:52	03/11/20 20:25	7440-38-2	
Barium	0.018	mg/L	0.010	0.00049	1	03/10/20 20:52	03/11/20 20:25	7440-39-3	
Beryllium	0.0039	mg/L	0.0030	0.000074	1	03/10/20 20:52	03/11/20 20:25	7440-41-7	
Boron	0.86	mg/L	0.10	0.0049	1	03/10/20 20:52	03/11/20 20:25	7440-42-8	
Cadmium	0.00093J	mg/L	0.0025	0.00011	1	03/10/20 20:52	03/11/20 20:25	7440-43-9	
Chromium	0.0011J	mg/L	0.010	0.00039	1	03/10/20 20:52	03/11/20 20:25	7440-47-3	B
Cobalt	0.055	mg/L	0.0050	0.00030	1	03/10/20 20:52	03/11/20 20:25	7440-48-4	
Lead	0.00017J	mg/L	0.0050	0.000046	1	03/10/20 20:52	03/11/20 20:25	7439-92-1	
Lithium	0.0027J	mg/L	0.030	0.00078	1	03/10/20 20:52	03/11/20 20:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/10/20 20:52	03/11/20 20:25	7439-98-7	
Selenium	0.0049J	mg/L	0.010	0.0013	1	03/10/20 20:52	03/11/20 20:25	7782-49-2	
Thallium	0.000068J	mg/L	0.0010	0.000052	1	03/10/20 20:52	03/11/20 20:25	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/10/20 08:40	03/10/20 18:53	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	400	mg/L	10.0	10.0	1		03/11/20 11:14		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	20.6	mg/L	1.0	0.60	1		03/10/20 21:06	16887-00-6	
Fluoride	0.11J	mg/L	0.30	0.050	1		03/10/20 21:06	16984-48-8	
Sulfate	177	mg/L	4.0	2.0	4		03/14/20 17:19	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-37		Lab ID: 2629779002		Collected: 03/09/20 15:05		Received: 03/09/20 17:49		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	6.34	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	64.2	mg/L	1.0	0.14	1	03/13/20 15:45	03/16/20 20:01	7440-70-2	
Zinc	ND	mg/L	0.020	0.018	1	03/13/20 15:45	03/16/20 20:01	7440-66-6	
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	03/16/20 18:00	03/17/20 16:55	7440-38-2	
Barium	0.092	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 16:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 16:55	7440-41-7	
Boron	1.8	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 16:55	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 16:55	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 16:55	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 16:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 16:55	7439-92-1	
Lithium	0.0017J	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 16:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 16:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 16:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 16:55	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 11:45	03/13/20 13:58	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	357	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.0	mg/L	1.0	0.60	1		03/15/20 02:45	16887-00-6	
Fluoride	0.054J	mg/L	0.30	0.050	1		03/15/20 02:45	16984-48-8	
Sulfate	90.3	mg/L	1.0	0.50	1		03/15/20 02:45	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-38		Lab ID: 2629779003		Collected: 03/09/20 13:55		Received: 03/09/20 17:49		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	6.12	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	91.9	mg/L	1.0	0.14	1	03/13/20 15:45	03/16/20 20:05	7440-70-2	
Zinc	ND	mg/L	0.020	0.018	1	03/13/20 15:45	03/16/20 20:05	7440-66-6	
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	03/16/20 18:00	03/17/20 17:38	7440-38-2	
Barium	0.032	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 17:38	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 17:38	7440-41-7	
Boron	3.0	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 17:38	7440-42-8	
Cadmium	0.00017J	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 17:38	7440-43-9	
Chromium	0.00044J	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 17:38	7440-47-3	
Cobalt	0.0016J	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 17:38	7440-48-4	
Lead	0.000061J	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 17:38	7439-92-1	
Lithium	0.0033J	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 17:38	7439-93-2	
Molybdenum	0.0010J	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 17:38	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 17:38	7782-49-2	
Thallium	0.00016J	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 17:38	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 11:45	03/13/20 14:00	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	554	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8.1	mg/L	1.0	0.60	1		03/15/20 02:59	16887-00-6	
Fluoride	0.064J	mg/L	0.30	0.050	1		03/15/20 02:59	16984-48-8	
Sulfate	244	mg/L	5.0	2.5	5		03/15/20 10:05	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-39		Lab ID: 2629779004		Collected: 03/09/20 11:45		Received: 03/09/20 17:49		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	6.37	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Atlanta, GA									
Calcium	100	mg/L	1.0	0.14	1	03/13/20 15:45	03/16/20 20:09	7440-70-2	
Zinc	ND	mg/L	0.020	0.018	1	03/13/20 15:45	03/16/20 20:09	7440-66-6	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Atlanta, GA									
Arsenic	0.00039J	mg/L	0.0050	0.00035	1	03/16/20 18:00	03/17/20 17:43	7440-38-2	
Barium	0.076	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 17:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 17:43	7440-41-7	
Boron	2.9	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 17:43	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 17:43	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 17:43	7440-47-3	
Cobalt	0.0070	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 17:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 17:43	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 17:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 17:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 17:43	7782-49-2	
Thallium	0.000071J	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 17:43	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 11:45	03/13/20 14:03	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	508	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	7.5	mg/L	1.0	0.60	1		03/15/20 03:14	16887-00-6	
Fluoride	0.075J	mg/L	0.30	0.050	1		03/15/20 03:14	16984-48-8	
Sulfate	171	mg/L	4.0	2.0	4		03/15/20 11:05	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-67		Lab ID: 2629779005		Collected: 03/09/20 16:00		Received: 03/09/20 17:49		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	6.23	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	46.9	mg/L	1.0	0.14	1	03/13/20 15:45	03/16/20 20:12	7440-70-2	
Zinc	ND	mg/L	0.020	0.018	1	03/13/20 15:45	03/16/20 20:12	7440-66-6	
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	03/16/20 18:00	03/17/20 17:49	7440-38-2	
Barium	0.11	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 17:49	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 17:49	7440-41-7	
Boron	3.6	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 17:49	7440-42-8	
Cadmium	0.00021J	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 17:49	7440-43-9	
Chromium	0.00088J	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 17:49	7440-47-3	
Cobalt	0.0015J	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 17:49	7440-48-4	
Lead	0.000047J	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 17:49	7439-92-1	
Lithium	0.0048J	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 17:49	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 17:49	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 17:49	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 17:49	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 11:45	03/13/20 14:05	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	209	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.7	mg/L	1.0	0.60	1		03/15/20 03:28	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/15/20 03:28	16984-48-8	
Sulfate	100	mg/L	2.0	1.0	2		03/15/20 11:21	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-68A		Lab ID: 2629779006		Collected: 03/09/20 15:13		Received: 03/09/20 17:49		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	6.60	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Atlanta, GA									
Calcium	54.0	mg/L	1.0	0.14	1	03/13/20 15:45	03/16/20 20:16	7440-70-2	
Zinc	ND	mg/L	0.020	0.018	1	03/13/20 15:45	03/16/20 20:16	7440-66-6	
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	03/16/20 18:00	03/17/20 17:55	7440-38-2	
Barium	0.088	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 17:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 17:55	7440-41-7	
Boron	1.8	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 17:55	7440-42-8	
Cadmium	0.00026J	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 17:55	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 17:55	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 17:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 17:55	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 17:55	7439-93-2	
Molybdenum	0.19	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 17:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 17:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 17:55	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 11:45	03/13/20 14:07	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	188	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	3.6	mg/L	1.0	0.60	1		03/15/20 03:43	16887-00-6	
Fluoride	0.082J	mg/L	0.30	0.050	1		03/15/20 03:43	16984-48-8	
Sulfate	37.4	mg/L	1.0	0.50	1		03/15/20 03:43	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: DGWC-69		Lab ID: 2629779007		Collected: 03/09/20 14:23		Received: 03/09/20 17:49		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	6.12	Std. Units			1		03/20/20 07:52		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Atlanta, GA									
Calcium	8.6	mg/L	1.0	0.14	1	03/13/20 15:45	03/16/20 20:19	7440-70-2	
Zinc	ND	mg/L	0.020	0.018	1	03/13/20 15:45	03/16/20 20:19	7440-66-6	
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Atlanta, GA									
Arsenic	0.029	mg/L	0.0050	0.00035	1	03/16/20 18:00	03/17/20 18:01	7440-38-2	
Barium	0.057	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 18:01	7440-39-3	
Beryllium	0.000075J	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 18:01	7440-41-7	
Boron	0.035J	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 18:01	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 18:01	7440-43-9	
Chromium	0.0012J	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 18:01	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 18:01	7440-48-4	
Lead	0.000090J	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 18:01	7439-92-1	
Lithium	0.0025J	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 18:01	7439-93-2	
Molybdenum	0.0062J	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 18:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 18:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 18:01	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 11:45	03/13/20 14:10	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	115	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	5.7	mg/L	1.0	0.60	1		03/15/20 03:57	16887-00-6	
Fluoride	0.068J	mg/L	0.30	0.050	1		03/15/20 03:57	16984-48-8	
Sulfate	7.6	mg/L	1.0	0.50	1		03/15/20 03:57	14808-79-8	

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: EB-3		Lab ID: 2629779008		Collected: 03/09/20 16:15	Received: 03/09/20 17:49	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
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	03/18/20 15:40	03/22/20 18:04	7440-70-2		
Zinc	ND	mg/L	0.020	0.018	1	03/18/20 15:40	03/22/20 18:04	7440-66-6		
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	03/16/20 18:00	03/17/20 18:06	7440-38-2		
Barium	ND	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 18:06	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 18:06	7440-41-7		
Boron	0.0068J	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 18:06	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 18:06	7440-43-9		
Chromium	ND	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 18:06	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 18:06	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 18:06	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 18:06	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 18:06	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 18:06	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 18:06	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA								
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 12:00	03/13/20 14:36	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA								
Total Dissolved Solids	13.0	mg/L	10.0	10.0	1		03/16/20 16:09			
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		03/15/20 04:41	16887-00-6		
Fluoride	ND	mg/L	0.30	0.050	1		03/15/20 04:41	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		03/15/20 04:41	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Sample: FD-3		Lab ID: 2629779009		Collected: 03/09/20 00:00		Received: 03/09/20 17:49		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA								
Calcium	100	mg/L	1.0	0.14	1	03/18/20 15:40	03/22/20 18:08	7440-70-2		
Zinc	ND	mg/L	0.020	0.018	1	03/18/20 15:40	03/22/20 18:08	7440-66-6		
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA								
Arsenic	0.00040J	mg/L	0.0050	0.00035	1	03/16/20 18:00	03/17/20 18:54	7440-38-2		
Barium	0.081	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 18:54	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 18:54	7440-41-7		
Boron	2.9	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 18:54	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 18:54	7440-43-9		
Chromium	0.00065J	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 18:54	7440-47-3		
Cobalt	0.0072	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 18:54	7440-48-4		
Lead	ND	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 18:54	7439-92-1		
Lithium	ND	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 18:54	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 18:54	7439-98-7		
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 18:54	7782-49-2		
Thallium	0.000072J	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 18:54	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA								
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 12:00	03/13/20 14:38	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA								
Total Dissolved Solids	492	mg/L	10.0	10.0	1		03/16/20 16:09			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	7.4	mg/L	1.0	0.60	1		03/15/20 04:55	16887-00-6		
Fluoride	0.069J	mg/L	0.30	0.050	1		03/15/20 04:55	16984-48-8		
Sulfate	176	mg/L	4.0	2.0	4		03/15/20 11:37	14808-79-8		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 44367 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629779001

METHOD BLANK: 203479 Matrix: Water
Associated Lab Samples: 2629779001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.14	03/10/20 18:17	

LABORATORY CONTROL SAMPLE: 203480

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203481 203482

Parameter	Units	203481		203482		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	ND	2.5	2.5	2.4	2.5	98	101	75-125	4	20

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 44498	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007

METHOD BLANK: 204276 Matrix: Water
Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.14	03/13/20 13:03	

LABORATORY CONTROL SAMPLE: 204277

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.6	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204278 204279

Parameter	Units	2629701014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.4	99	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 44499 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2629779008, 2629779009

METHOD BLANK: 204281 Matrix: Water
Associated Lab Samples: 2629779008, 2629779009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.14	03/13/20 14:17	

LABORATORY CONTROL SAMPLE: 204282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204283 204284

Parameter	Units	2629829002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	1.8	101	71	75-125	36	20	M1,R1

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 44426

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

Analysis Description: 6010D MET

Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629779001

METHOD BLANK: 203829

Matrix: Water

Associated Lab Samples: 2629779001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	03/11/20 19:22	

LABORATORY CONTROL SAMPLE: 203830

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: 203831 203832

Parameter	Units	203831		203832		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	49.3	1	1	50.7	50.4	137	108	75-125	1	20 M1

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 44554 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007

METHOD BLANK: 204811 Matrix: Water
Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	03/16/20 18:45	
Zinc	mg/L	ND	0.020	0.018	03/16/20 18:45	

LABORATORY CONTROL SAMPLE: 204812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	105	80-120	
Zinc	mg/L	1	1.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204813 204814

Parameter	Units	204813		204814		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Calcium	mg/L	29.2	1	1	28.5	28.3	-69	-90	75-125	1	20	M1	
Zinc	mg/L	ND	1	1	0.98	0.95	97	94	75-125	3	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 44703 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2629779008, 2629779009

METHOD BLANK: 205490 Matrix: Water
Associated Lab Samples: 2629779008, 2629779009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	03/22/20 17:57	
Zinc	mg/L	ND	0.020	0.018	03/22/20 17:57	

LABORATORY CONTROL SAMPLE: 205491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	109	80-120	
Zinc	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 205492 205493

Parameter	Units	2629901001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	23.7	1	1	25.0	25.0	126	127	75-125	0	20	M1
Zinc	mg/L	ND	1	1	1.0	1.0	101	101	75-125	0	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 44440 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629779001

METHOD BLANK: 203914 Matrix: Water
Associated Lab Samples: 2629779001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	03/11/20 18:48	
Barium	mg/L	ND	0.010	0.00049	03/11/20 18:48	
Beryllium	mg/L	ND	0.0030	0.000074	03/11/20 18:48	
Boron	mg/L	0.0084J	0.10	0.0049	03/11/20 18:48	
Cadmium	mg/L	ND	0.0025	0.00011	03/11/20 18:48	
Chromium	mg/L	0.00054J	0.010	0.00039	03/11/20 18:48	
Cobalt	mg/L	ND	0.0050	0.00030	03/11/20 18:48	
Lead	mg/L	ND	0.0050	0.000046	03/11/20 18:48	
Lithium	mg/L	ND	0.030	0.00078	03/11/20 18:48	
Molybdenum	mg/L	ND	0.010	0.00095	03/11/20 18:48	
Selenium	mg/L	ND	0.010	0.0013	03/11/20 18:48	
Thallium	mg/L	ND	0.0010	0.000052	03/11/20 18:48	

LABORATORY CONTROL SAMPLE: 203915

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	103	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	1.1	106	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Chromium	mg/L	0.1	0.11	105	80-120	
Cobalt	mg/L	0.1	0.10	103	80-120	
Lead	mg/L	0.1	0.10	104	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.10	100	80-120	
Thallium	mg/L	0.1	0.11	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203916 203917

Parameter	Units	203916		203917		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	mg/L	0.00073J	0.1	0.1	0.099	0.099	99	98	75-125	1	20	
Barium	mg/L	0.017	0.1	0.1	0.12	0.12	100	100	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	104	75-125	2	20	
Boron	mg/L	0.0096J	1	1	1.0	1.1	103	105	75-125	2	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameter	Units	203916		203917		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	0.099	100	99	75-125	1	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	2	20	
Lead	mg/L	0.000051J	0.1	0.1	0.096	0.096	96	96	75-125	0	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.10	104	105	75-125	0	20	
Molybdenum	mg/L	0.0064J	0.1	0.1	0.10	0.10	95	96	75-125	2	20	
Selenium	mg/L	0.0053J	0.1	0.1	0.10	0.11	98	104	75-125	6	20	
Thallium	mg/L	0.00012J	0.1	0.1	0.10	0.10	103	104	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 44617	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Atlanta, GA	

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

METHOD BLANK: 205055 Matrix: Water
Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	03/17/20 16:03	
Barium	mg/L	ND	0.010	0.00049	03/17/20 16:03	
Beryllium	mg/L	ND	0.0030	0.000074	03/17/20 16:03	
Boron	mg/L	ND	0.10	0.0049	03/17/20 16:03	
Cadmium	mg/L	ND	0.0025	0.00011	03/17/20 16:03	
Chromium	mg/L	ND	0.010	0.00039	03/17/20 16:03	
Cobalt	mg/L	ND	0.0050	0.00030	03/17/20 16:03	
Lead	mg/L	ND	0.0050	0.000046	03/17/20 16:03	
Lithium	mg/L	ND	0.030	0.00078	03/17/20 16:03	
Molybdenum	mg/L	ND	0.010	0.00095	03/17/20 16:03	
Selenium	mg/L	ND	0.010	0.0013	03/17/20 16:03	
Thallium	mg/L	ND	0.0010	0.000052	03/17/20 16:03	

LABORATORY CONTROL SAMPLE: 205056

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
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	0.10	102	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.11	106	80-120	
Cobalt	mg/L	0.1	0.10	105	80-120	
Lead	mg/L	0.1	0.10	100	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	0.10	100	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 205057 205058

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629875002	Conc.	Conc.	Conc.								
Arsenic	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	1	20		
Barium	mg/L	0.0066J	0.1	0.1	0.11	0.11	102	104	75-125	2	20		
Beryllium	mg/L	0.00017J	0.1	0.1	0.10	0.10	101	102	75-125	0	20		
Boron	mg/L	0.0068J	1	1	1.0	1.0	101	102	75-125	1	20		

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameter	Units	205057		205058		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	0.00014J	0.1	0.1	0.10	0.10	101	103	75-125	2	20	
Chromium	mg/L	0.00045J	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Cobalt	mg/L	0.00039J	0.1	0.1	0.10	0.10	103	104	75-125	1	20	
Lead	mg/L	0.00011J	0.1	0.1	0.096	0.098	96	97	75-125	2	20	
Lithium	mg/L	0.0032J	0.1	0.1	0.10	0.11	102	103	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	0	20	
Selenium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20	
Thallium	mg/L	0.000086J	0.1	0.1	0.097	0.098	97	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 44453	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629779001

LABORATORY CONTROL SAMPLE: 203948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	394	98	84-108	

SAMPLE DUPLICATE: 203949

Parameter	Units	2629751001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	337	344	2	10	

SAMPLE DUPLICATE: 203950

Parameter	Units	2629733003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	118	119	1	10	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch:	44623	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

LABORATORY CONTROL SAMPLE: 205066

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	424	106	84-108	

SAMPLE DUPLICATE: 205067

Parameter	Units	2629890001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 205068

Parameter	Units	2629906001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	100	86.0	15	10	D6

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 529390 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: 2629779001

METHOD BLANK: 2827590 Matrix: Water
Associated Lab Samples: 2629779001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/10/20 16:12	
Fluoride	mg/L	ND	0.10	0.050	03/10/20 16:12	

LABORATORY CONTROL SAMPLE: 2827591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.1	98	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2827592 2827593

Parameter	Units	2827592		2827593		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	42.0	50	50	92.3	92.6	101	101	90-110	0	10
Fluoride	mg/L	1.4	2.5	2.5	4.0	4.0	101	102	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2827594 2827595

Parameter	Units	2827594		2827595		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	79.1	50	50	118	119	77	79	90-110	1	10 M1
Fluoride	mg/L	0.052J	2.5	2.5	2.6	2.6	103	103	90-110	0	10

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 530339 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: 2629779001

METHOD BLANK: 2832223 Matrix: Water
Associated Lab Samples: 2629779001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.50	03/14/20 16:50	

LABORATORY CONTROL SAMPLE: 2832224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	52.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2832225 2832226

Parameter	Units	92468668081 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfate	mg/L	ND	50	50	51.6	51.1	102	101	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2832227 2832228

Parameter	Units	92469145010 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfate	mg/L	79.4	50	50	121	121	83	83	90-110	0	10 M1	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

QC Batch: 530342 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: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

METHOD BLANK: 2832234 Matrix: Water
Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/15/20 00:34	
Fluoride	mg/L	ND	0.10	0.050	03/15/20 00:34	
Sulfate	mg/L	ND	1.0	0.50	03/15/20 00:34	

LABORATORY CONTROL SAMPLE: 2832235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.7	110	90-110	
Sulfate	mg/L	50	52.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2832236 2832237

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92469145020	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	2.1	50	50	52.2	55.5	100	107	90-110	6	10		
Fluoride	mg/L	0.46	2.5	2.5	3.1	3.2	104	110	90-110	5	10		
Sulfate	mg/L	8.2	50	50	58.4	61.5	100	107	90-110	5	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2832238 2832239

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629779009	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	7.4	50	50	58.1	58.4	101	102	90-110	0	10		
Fluoride	mg/L	0.069J	2.5	2.5	2.7	2.8	107	108	90-110	1	10		
Sulfate	mg/L	176	50	50	222	221	92	91	90-110	0	10		

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-40 Lab ID: 2629779001 Collected: 03/04/20 15:15 Received: 03/04/20 17:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	1.07 ± 0.364 (0.305) C:91% T:NA	pCi/L	03/23/20 10:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.554 ± 0.385 (0.740) C:83% T:78%	pCi/L	04/02/20 11:46	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.62 ± 0.749 (1.05)	pCi/L	04/03/20 14:54	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Sample: DGWC-37 **Lab ID: 2629779002** Collected: 03/09/20 15:05 Received: 03/09/20 17:49 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	0.499 ± 0.256 (0.368) C:91% T:NA	pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0603 ± 0.307 (0.727) C:83% T:86%	pCi/L	04/02/20 14:55	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.499 ± 0.563 (1.10)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Sample: DGWC-38 **Lab ID: 2629779003** Collected: 03/09/20 13:55 Received: 03/09/20 17:49 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	0.673 ± 0.272 (0.272) C:91% T:NA	pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.364 ± 0.361 (0.746) C:81% T:86%	pCi/L	04/02/20 14:55	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.04 ± 0.633 (1.02)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-39 Lab ID: 2629779004 Collected: 03/09/20 11:45 Received: 03/09/20 17:49 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.694 ± 0.277 (0.265) C:89% T:NA	pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.664 ± 0.419 (0.795) C:83% T:81%	pCi/L	04/02/20 14:55	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.36 ± 0.696 (1.06)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Sample: DGWC-67 **Lab ID: 2629779005** Collected: 03/09/20 16:00 Received: 03/09/20 17:49 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	0.617 ± 0.259 (0.234) C:83% T:NA	pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.202 ± 0.284 (0.608) C:85% T:94%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.819 ± 0.543 (0.842)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-68A Lab ID: 2629779006 Collected: 03/09/20 15:13 Received: 03/09/20 17:49 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.840 ± 0.317 (0.266) C:74% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.489 ± 0.358 (0.701) C:83% T:89%	pCi/L	04/02/20 14:56	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.33 ± 0.675 (0.967)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWC-69 Lab ID: 2629779007 Collected: 03/09/20 14:23 Received: 03/09/20 17:49 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.839 ± 0.290 (0.234) C:92% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.549 ± 0.351 (0.666) C:83% T:92%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.39 ± 0.641 (0.900)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Sample: EB-3 **Lab ID: 2629779008** Collected: 03/09/20 16:15 Received: 03/09/20 17:49 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	0.475 ± 0.222 (0.252) C:92% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.293 ± 0.353 (0.745) C:80% T:82%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.768 ± 0.575 (0.997)	pCi/L	04/03/20 15:09	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FD-3 Lab ID: 2629779009 Collected: 03/09/20 00:00 Received: 03/09/20 17:49 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.498 ± 0.233 (0.268) C:87% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.164 ± 0.286 (0.625) C:81% T:94%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.662 ± 0.519 (0.893)	pCi/L	04/03/20 15:09	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 388318

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779001

METHOD BLANK: 1880999

Matrix: Water

Associated Lab Samples: 2629779001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.364 ± 0.221 (0.350) C:92% T:NA	pCi/L	03/23/20 10:04	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 388323

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

METHOD BLANK: 1881006

Matrix: Water

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0681 ± 0.261 (0.594) C:84% T:89%	pCi/L	04/02/20 14:56	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 388320

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

METHOD BLANK: 1881003

Matrix: Water

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.387 ± 0.205 (0.273) C:94% T:NA	pCi/L	03/23/20 10:25	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

QC Batch: 388321

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779001

METHOD BLANK: 1881004

Matrix: Water

Associated Lab Samples: 2629779001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.474 ± 0.338 (0.655) C:83% T:89%	pCi/L	04/02/20 11:45	

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QUALIFIERS

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

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.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-1
Pace Project No.: 2629779

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629779001	DGWC-40				
2629779002	DGWC-37				
2629779003	DGWC-38				
2629779004	DGWC-39				
2629779005	DGWC-67				
2629779006	DGWC-68A				
2629779007	DGWC-69				
2629779001	DGWC-40	EPA 3010A	44426	EPA 6010D	44442
2629779002	DGWC-37	EPA 3010A	44554	EPA 6010D	44569
2629779003	DGWC-38	EPA 3010A	44554	EPA 6010D	44569
2629779004	DGWC-39	EPA 3010A	44554	EPA 6010D	44569
2629779005	DGWC-67	EPA 3010A	44554	EPA 6010D	44569
2629779006	DGWC-68A	EPA 3010A	44554	EPA 6010D	44569
2629779007	DGWC-69	EPA 3010A	44554	EPA 6010D	44569
2629779008	EB-3	EPA 3010A	44703	EPA 6010D	44716
2629779009	FD-3	EPA 3010A	44703	EPA 6010D	44716
2629779001	DGWC-40	EPA 3005A	44440	EPA 6020B	44463
2629779002	DGWC-37	EPA 3005A	44617	EPA 6020B	44630
2629779003	DGWC-38	EPA 3005A	44617	EPA 6020B	44630
2629779004	DGWC-39	EPA 3005A	44617	EPA 6020B	44630
2629779005	DGWC-67	EPA 3005A	44617	EPA 6020B	44630
2629779006	DGWC-68A	EPA 3005A	44617	EPA 6020B	44630
2629779007	DGWC-69	EPA 3005A	44617	EPA 6020B	44630
2629779008	EB-3	EPA 3005A	44617	EPA 6020B	44630
2629779009	FD-3	EPA 3005A	44617	EPA 6020B	44630
2629779001	DGWC-40	EPA 7470A	44367	EPA 7470A	44420
2629779002	DGWC-37	EPA 7470A	44498	EPA 7470A	44524
2629779003	DGWC-38	EPA 7470A	44498	EPA 7470A	44524
2629779004	DGWC-39	EPA 7470A	44498	EPA 7470A	44524
2629779005	DGWC-67	EPA 7470A	44498	EPA 7470A	44524
2629779006	DGWC-68A	EPA 7470A	44498	EPA 7470A	44524
2629779007	DGWC-69	EPA 7470A	44498	EPA 7470A	44524
2629779008	EB-3	EPA 7470A	44499	EPA 7470A	44525
2629779009	FD-3	EPA 7470A	44499	EPA 7470A	44525
2629779001	DGWC-40	EPA 9315	388318		
2629779002	DGWC-37	EPA 9315	388320		
2629779003	DGWC-38	EPA 9315	388320		
2629779004	DGWC-39	EPA 9315	388320		
2629779005	DGWC-67	EPA 9315	388320		
2629779006	DGWC-68A	EPA 9315	388320		
2629779007	DGWC-69	EPA 9315	388320		
2629779008	EB-3	EPA 9315	388320		
2629779009	FD-3	EPA 9315	388320		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH AP-1

Pace Project No.: 2629779

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629779001	DGWC-40	EPA 9320	388321		
2629779002	DGWC-37	EPA 9320	388323		
2629779003	DGWC-38	EPA 9320	388323		
2629779004	DGWC-39	EPA 9320	388323		
2629779005	DGWC-67	EPA 9320	388323		
2629779006	DGWC-68A	EPA 9320	388323		
2629779007	DGWC-69	EPA 9320	388323		
2629779008	EB-3	EPA 9320	388323		
2629779009	FD-3	EPA 9320	388323		
2629779001	DGWC-40	Total Radium Calculation	391073		
2629779002	DGWC-37	Total Radium Calculation	391075		
2629779003	DGWC-38	Total Radium Calculation	391075		
2629779004	DGWC-39	Total Radium Calculation	391075		
2629779005	DGWC-67	Total Radium Calculation	391075		
2629779006	DGWC-68A	Total Radium Calculation	391075		
2629779007	DGWC-69	Total Radium Calculation	391075		
2629779008	EB-3	Total Radium Calculation	391075		
2629779009	FD-3	Total Radium Calculation	391075		
2629779001	DGWC-40	SM 2540C	44453		
2629779002	DGWC-37	SM 2540C	44623		
2629779003	DGWC-38	SM 2540C	44623		
2629779004	DGWC-39	SM 2540C	44623		
2629779005	DGWC-67	SM 2540C	44623		
2629779006	DGWC-68A	SM 2540C	44623		
2629779007	DGWC-69	SM 2540C	44623		
2629779008	EB-3	SM 2540C	44623		
2629779009	FD-3	SM 2540C	44623		
2629779001	DGWC-40	EPA 300.0 Rev 2.1 1993	529390		
2629779001	DGWC-40	EPA 300.0 Rev 2.1 1993	530339		
2629779002	DGWC-37	EPA 300.0 Rev 2.1 1993	530342		
2629779003	DGWC-38	EPA 300.0 Rev 2.1 1993	530342		
2629779004	DGWC-39	EPA 300.0 Rev 2.1 1993	530342		
2629779005	DGWC-67	EPA 300.0 Rev 2.1 1993	530342		
2629779006	DGWC-68A	EPA 300.0 Rev 2.1 1993	530342		
2629779007	DGWC-69	EPA 300.0 Rev 2.1 1993	530342		
2629779008	EB-3	EPA 300.0 Rev 2.1 1993	530342		
2629779009	FD-3	EPA 300.0 Rev 2.1 1993	530342		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GTA POWER

WO#: 2629779

PM: KH Due Date: 03/19/20
CLIENT: 26-GA Power

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

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

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Thermometer Used THR214 Type of Ice: Ice Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.8 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KRW 3/10/20

		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 type="checkbox"/> Yes <input checked="" 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. <u>10 DAY TAT</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input 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, MI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>KRW</u> 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)



Ship To:
 Pace Analytical Ashville
 2225 Riverside Dr.
 Asheville, NC 28804
 Phone (828)254-7176

INTER_LABORATORY WORK ORDER # 2629779

(To be completed by sending lab)

Sending Project No:	2629779
Receiving Project No:	
Check Box for Consolidated Invoice:	<input type="checkbox"/>
Date Prepared:	03/05/20
REQUESTED COMPLETION DATE:	3/19/2020

Sending Region	IR26-Atlanta	Sending Project Mgr.	Kevin Herring
Receiving Region	IR93-Asheville	External Client	Georgia Power
State of Sample Origin	GA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight Cert. Needed _____

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
300.0 - Cl, F, SO4	BP3U	1	Unpreserved	1	\$34.00	\$34.00
TOTAL						\$34.00

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Wet Chemistry	21	\$34.00	\$27.20	\$6.80
* Custom Revenue Allocation		TOTAL	\$27.20	\$6.80

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Chain of Custody Included: Yes No
 Return Samples to Sending Region: Yes No
 Matrix: Drinking Water Soil Water Air Other (identify) _____

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.



Ship To:
 Pace Analytical Pittsburgh
 1638 Roseytown Road
 Suites 2,3, & 4
 Greensburg, PA 15601
 Phone (724)850-5600

INTER_LABORATORY WORK ORDER # 2629779

(To be completed by sending lab)

Sending Project No:	2629779
Receiving Project No:	
Check Box for Consolidated Invoice:	<input type="checkbox"/>
Date Prepared:	03/05/20
REQUESTED COMPLETION DATE:	3/19/2020

Sending Region	IR26-Atlanta	Sending Project Mgr.	Kevin Herring
Receiving Region	IR30-Pittsburgh	External Client	Georgia Power
State of Sample Origin	GA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight Cert. Needed _____

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
RAD 9315	BP1N	2	HNO3	1	\$65.00	\$65.00
RAD 9320	BP1N		HNO3	1	\$65.00	\$65.00
TOTAL						\$130.00

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Waltz Mill Radiochemistry	38	\$130.00	\$104.00	\$26.00
TOTAL		\$130.00	\$104.00	\$26.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Chain of Custody Included: Yes No
 Return Samples to Sending Region: Yes No
 Matrix: Drinking Water Soil Water Air Other (Identify) _____

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

DISPOSITION OF FORM

Original sent to the receiving lab - Copy kept at the sending lab.
 When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

April 14, 2020

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

RE: Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629901

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 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
- 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
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629901

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 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

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 MCDONOUGH BACKGROUND
Pace Project No.: 2629901

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629901001	DGWA-53	Water	03/09/20 12:12	03/09/20 17:49

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629901001	DGWA-53	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	NJ1	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

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629901

Sample: DGWA-53		Lab ID: 2629901001		Collected: 03/09/20 12:12		Received: 03/09/20 17:49		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	6.41	Std. Units			1		03/10/20 09:17		
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium	23.7	mg/L	1.0	0.14	1	03/18/20 15:40	03/22/20 18:12	7440-70-2	M1
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony	ND	mg/L	0.0030	0.00027	1	03/16/20 18:00	03/17/20 19:00	7440-36-0	
Arsenic	0.00068J	mg/L	0.0050	0.00035	1	03/16/20 18:00	03/17/20 19:00	7440-38-2	
Barium	0.099	mg/L	0.010	0.00049	1	03/16/20 18:00	03/17/20 19:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/16/20 18:00	03/17/20 19:00	7440-41-7	
Boron	0.080J	mg/L	0.10	0.0049	1	03/16/20 18:00	03/17/20 19:00	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/16/20 18:00	03/17/20 19:00	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/16/20 18:00	03/17/20 19:00	7440-47-3	
Cobalt	0.016	mg/L	0.0050	0.00030	1	03/16/20 18:00	03/17/20 19:00	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/16/20 18:00	03/17/20 19:00	7439-92-1	
Lithium	0.0077J	mg/L	0.030	0.00078	1	03/16/20 18:00	03/17/20 19:00	7439-93-2	
Molybdenum	0.026	mg/L	0.010	0.00095	1	03/16/20 18:00	03/17/20 19:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/16/20 18:00	03/17/20 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/16/20 18:00	03/17/20 19:00	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury	ND	ug/L	0.20	0.14	1	03/12/20 12:00	03/13/20 14:41	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Atlanta, GA									
Total Dissolved Solids	171	mg/L	10.0	10.0	1		03/16/20 16:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.8	mg/L	1.0	0.60	1		03/15/20 02:30	16887-00-6	
Fluoride	0.10J	mg/L	0.30	0.050	1		03/15/20 02:30	16984-48-8	
Sulfate	9.5	mg/L	1.0	0.50	1		03/15/20 02:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

QC Batch: 44499	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629901001

METHOD BLANK: 204281 Matrix: Water

Associated Lab Samples: 2629901001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.14	03/13/20 14:17	

LABORATORY CONTROL SAMPLE: 204282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204283 204284

Parameter	Units	2629829002		204284		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	ND	2.5	2.5	2.5	1.8	101	71	75-125	36	20 M1,R1

Results presented on this page are in 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 MCDONOUGH BACKGROUND
Pace Project No.: 2629901

QC Batch: 44703 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Atlanta, GA
Associated Lab Samples: 2629901001

METHOD BLANK: 205490 Matrix: Water
Associated Lab Samples: 2629901001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	03/22/20 17:57	

LABORATORY CONTROL SAMPLE: 205491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.1	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 205492 205493

Parameter	Units	2629901001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	23.7	1	1	25.0	25.0	126	127	75-125	0	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

QC Batch: 44617	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629901001

METHOD BLANK: 205055 Matrix: Water

Associated Lab Samples: 2629901001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00031J	0.0030	0.00027	03/17/20 16:03	
Arsenic	mg/L	ND	0.0050	0.00035	03/17/20 16:03	
Barium	mg/L	ND	0.010	0.00049	03/17/20 16:03	
Beryllium	mg/L	ND	0.0030	0.000074	03/17/20 16:03	
Boron	mg/L	ND	0.10	0.0049	03/17/20 16:03	
Cadmium	mg/L	ND	0.0025	0.00011	03/17/20 16:03	
Chromium	mg/L	ND	0.010	0.00039	03/17/20 16:03	
Cobalt	mg/L	ND	0.0050	0.00030	03/17/20 16:03	
Lead	mg/L	ND	0.0050	0.000046	03/17/20 16:03	
Lithium	mg/L	ND	0.030	0.00078	03/17/20 16:03	
Molybdenum	mg/L	ND	0.010	0.00095	03/17/20 16:03	
Selenium	mg/L	ND	0.010	0.0013	03/17/20 16:03	
Thallium	mg/L	ND	0.0010	0.000052	03/17/20 16:03	

LABORATORY CONTROL SAMPLE: 205056

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	104	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	0.10	102	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.11	106	80-120	
Cobalt	mg/L	0.1	0.10	105	80-120	
Lead	mg/L	0.1	0.10	100	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	0.10	100	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 205057 205058

Parameter	Units	2629875002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	104	105	75-125	1	20	
Arsenic	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629901

Parameter	Units	205057		205058		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Barium	mg/L	0.0066J	0.1	0.1	0.11	0.11	102	104	75-125	2	20	
Beryllium	mg/L	0.00017J	0.1	0.1	0.10	0.10	101	102	75-125	0	20	
Boron	mg/L	0.0068J	1	1	1.0	1.0	101	102	75-125	1	20	
Cadmium	mg/L	0.00014J	0.1	0.1	0.10	0.10	101	103	75-125	2	20	
Chromium	mg/L	0.00045J	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Cobalt	mg/L	0.00039J	0.1	0.1	0.10	0.10	103	104	75-125	1	20	
Lead	mg/L	0.00011J	0.1	0.1	0.096	0.098	96	97	75-125	2	20	
Lithium	mg/L	0.0032J	0.1	0.1	0.10	0.11	102	103	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	0	20	
Selenium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20	
Thallium	mg/L	0.000086J	0.1	0.1	0.097	0.098	97	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

QC Batch: 44623	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629901001

LABORATORY CONTROL SAMPLE: 205066

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	424	106	84-108	

SAMPLE DUPLICATE: 205067

Parameter	Units	2629890001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 205068

Parameter	Units	2629906001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	100	86.0	15	10	D6

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629901

QC Batch: 530342 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: 2629901001

METHOD BLANK: 2832234 Matrix: Water
Associated Lab Samples: 2629901001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/15/20 00:34	
Fluoride	mg/L	ND	0.10	0.050	03/15/20 00:34	
Sulfate	mg/L	ND	1.0	0.50	03/15/20 00:34	

LABORATORY CONTROL SAMPLE: 2832235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.7	110	90-110	
Sulfate	mg/L	50	52.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2832236 2832237

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92469145020	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	2.1	50	50	52.2	55.5	100	107	90-110	6	10		
Fluoride	mg/L	0.46	2.5	2.5	3.1	3.2	104	110	90-110	5	10		
Sulfate	mg/L	8.2	50	50	58.4	61.5	100	107	90-110	5	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2832238 2832239

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629779009	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	7.4	50	50	58.1	58.4	101	102	90-110	0	10		
Fluoride	mg/L	0.069J	2.5	2.5	2.7	2.8	107	108	90-110	1	10		
Sulfate	mg/L	176	50	50	222	221	92	91	90-110	0	10		

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

Sample: DGWA-53 **Lab ID: 2629901001** Collected: 03/09/20 12:12 Received: 03/09/20 17:49 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	2.32 ± 0.659 (0.411) C:89% T:NA	pCi/L	03/19/20 08:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.19 ± 0.469 (0.718) C:81% T:96%	pCi/L	03/29/20 17:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	3.51 ± 1.13 (1.13)	pCi/L	03/30/20 15:02	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

QC Batch:	388189	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 2629901001

METHOD BLANK: 1880480 Matrix: Water

Associated Lab Samples: 2629901001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.349 ± 0.224 (0.368) C:90% T:NA	pCi/L	03/18/20 19:54	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

QC Batch: 388190

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629901001

METHOD BLANK: 1880481

Matrix: Water

Associated Lab Samples: 2629901001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0172 ± 0.277 (0.657) C:79% T:93%	pCi/L	03/29/20 17:28	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629901

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

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.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629901

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629901001	DGWA-53				
2629901001	DGWA-53	EPA 3010A	44703	EPA 6010D	44716
2629901001	DGWA-53	EPA 3005A	44617	EPA 6020B	44630
2629901001	DGWA-53	EPA 7470A	44499	EPA 7470A	44525
2629901001	DGWA-53	EPA 9315	388189		
2629901001	DGWA-53	EPA 9320	388190		
2629901001	DGWA-53	Total Radium Calculation	390347		
2629901001	DGWA-53	SM 2540C	44623		
2629901001	DGWA-53	EPA 300.0 Rev 2.1 1993	530342		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: GA POWER

Project # **WO# 2629901**

PM: KH Due Date: 03/24/20
CLIENT: 26-GA Power

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

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

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Thermometer Used THR214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: KRW 3/10/20

Temp should be above freezing to 6°C Comments:

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

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

Project Manager Review: _____ Date: _____

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

April 14, 2020

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

RE: Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629903

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 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 - 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: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629903

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

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SAMPLE SUMMARY

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629903

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629903001	DGWA-53 FILTERED	Water	03/09/20 12:12	03/09/20 17:49

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SAMPLE ANALYTE COUNT

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629903

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2629903001	DGWA-53 FILTERED	EPA 6010D	KLH	1
		EPA 6020B	CSW	13
		EPA 7470A	DRB	1

PASI-GA = Pace Analytical Services - Atlanta, GA

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ANALYTICAL RESULTS

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629903

Sample: DGWA-53 FILTERED		Lab ID: 2629903001		Collected: 03/09/20 12:12		Received: 03/09/20 17:49		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	6.41	Std. Units			1		03/10/20 09:26		
6010D MET ICP Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Atlanta, GA									
Calcium, Dissolved	23300	ug/L	1000	141	1	03/20/20 14:22	03/22/20 21:55	7440-70-2	
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Atlanta, GA									
Antimony, Dissolved	ND	ug/L	3.0	0.27	1	03/19/20 14:45	03/20/20 15:50	7440-36-0	
Arsenic, Dissolved	0.73J	ug/L	5.0	0.35	1	03/19/20 14:45	03/20/20 15:50	7440-38-2	
Barium, Dissolved	96.5	ug/L	10.0	0.49	1	03/19/20 14:45	03/20/20 15:50	7440-39-3	
Beryllium, Dissolved	ND	ug/L	3.0	0.074	1	03/19/20 14:45	03/20/20 15:50	7440-41-7	
Boron, Dissolved	82.4J	ug/L	100	4.9	1	03/19/20 14:45	03/20/20 15:50	7440-42-8	
Cadmium, Dissolved	ND	ug/L	2.5	0.11	1	03/19/20 14:45	03/20/20 15:50	7440-43-9	
Chromium, Dissolved	0.44J	ug/L	10.0	0.39	1	03/19/20 14:45	03/20/20 15:50	7440-47-3	
Cobalt, Dissolved	15.4	ug/L	5.0	0.30	1	03/19/20 14:45	03/20/20 15:50	7440-48-4	
Lead, Dissolved	ND	ug/L	5.0	0.046	1	03/19/20 14:45	03/20/20 15:50	7439-92-1	
Lithium, Dissolved	8.0J	ug/L	30.0	0.78	1	03/19/20 14:45	03/20/20 15:50	7439-93-2	
Molybdenum, Dissolved	27.5	ug/L	10.0	0.95	1	03/19/20 14:45	03/20/20 15:50	7439-98-7	
Selenium, Dissolved	ND	ug/L	10.0	1.3	1	03/19/20 14:45	03/20/20 15:50	7782-49-2	
Thallium, Dissolved	0.099J	ug/L	1.0	0.052	1	03/19/20 14:45	03/20/20 15:50	7440-28-0	
7470 Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Atlanta, GA									
Mercury, Dissolved	ND	ug/L	0.20	0.14	1	03/20/20 08:57	03/20/20 14:31	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629903

QC Batch: 44780

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury Dissolved

Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629903001

METHOD BLANK: 206008

Matrix: Water

Associated Lab Samples: 2629903001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	0.14	03/20/20 14:26	

LABORATORY CONTROL SAMPLE: 206009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	2.5	2.8	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 206010 206011

Parameter	Units	2629903001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	2.5	2.5	2.5	2.4	101	94	75-125	7	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629903

QC Batch: 44792	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET Dissolved
	Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629903001

METHOD BLANK: 206065 Matrix: Water

Associated Lab Samples: 2629903001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	ug/L	ND	1000	141	03/22/20 21:48	

LABORATORY CONTROL SAMPLE: 206066

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	ug/L	1000	1020	102	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND
Pace Project No.: 2629903

QC Batch: 44746 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Laboratory: Pace Analytical Services - Atlanta, GA

Associated Lab Samples: 2629903001

METHOD BLANK: 205787 Matrix: Water
Associated Lab Samples: 2629903001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	0.37J	3.0	0.27	03/20/20 15:39	
Arsenic, Dissolved	ug/L	ND	5.0	0.35	03/20/20 15:39	
Barium, Dissolved	ug/L	ND	10.0	0.49	03/20/20 15:39	
Beryllium, Dissolved	ug/L	ND	3.0	0.074	03/20/20 15:39	
Boron, Dissolved	ug/L	5.2J	100	4.9	03/20/20 15:39	
Cadmium, Dissolved	ug/L	ND	2.5	0.11	03/20/20 15:39	
Chromium, Dissolved	ug/L	ND	10.0	0.39	03/20/20 15:39	
Cobalt, Dissolved	ug/L	ND	5.0	0.30	03/20/20 15:39	
Lead, Dissolved	ug/L	ND	5.0	0.046	03/20/20 15:39	
Lithium, Dissolved	ug/L	ND	30.0	0.78	03/20/20 15:39	
Molybdenum, Dissolved	ug/L	ND	10.0	0.95	03/20/20 15:39	
Selenium, Dissolved	ug/L	ND	10.0	1.3	03/20/20 15:39	
Thallium, Dissolved	ug/L	ND	1.0	0.052	03/20/20 15:39	

LABORATORY CONTROL SAMPLE: 205788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	100	102	102	80-120	
Arsenic, Dissolved	ug/L	100	97.5	97	80-120	
Barium, Dissolved	ug/L	100	103	103	80-120	
Beryllium, Dissolved	ug/L	100	102	102	80-120	
Boron, Dissolved	ug/L	1000	1050	105	80-120	
Cadmium, Dissolved	ug/L	100	101	101	80-120	
Chromium, Dissolved	ug/L	100	104	104	80-120	
Cobalt, Dissolved	ug/L	100	101	101	80-120	
Lead, Dissolved	ug/L	100	99.7	100	80-120	
Lithium, Dissolved	ug/L	100	104	104	80-120	
Molybdenum, Dissolved	ug/L	100	104	104	80-120	
Selenium, Dissolved	ug/L	100	98.0	98	80-120	
Thallium, Dissolved	ug/L	100	102	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 205789 205790

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2629903001 Result	Spike Conc.	Spike Conc.	MS Result						
Antimony, Dissolved	ug/L	ND	100	100	102	99.2	102	99	75-125	3	20
Arsenic, Dissolved	ug/L	0.73J	100	100	97.6	97.2	97	96	75-125	0	20

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QUALITY CONTROL DATA

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629903

Parameter	Units	205789		205790		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Barium, Dissolved	ug/L	96.5	100	100	200	192	104	95	75-125	4	20		
Beryllium, Dissolved	ug/L	ND	100	100	96.9	95.5	97	95	75-125	1	20		
Boron, Dissolved	ug/L	82.4J	1000	1000	1080	1050	100	97	75-125	3	20		
Cadmium, Dissolved	ug/L	ND	100	100	99.4	98.4	99	98	75-125	1	20		
Chromium, Dissolved	ug/L	0.44J	100	100	103	103	103	103	75-125	0	20		
Cobalt, Dissolved	ug/L	15.4	100	100	118	114	102	98	75-125	3	20		
Lead, Dissolved	ug/L	ND	100	100	95.9	92.6	96	93	75-125	4	20		
Lithium, Dissolved	ug/L	8.0J	100	100	107	105	99	97	75-125	2	20		
Molybdenum, Dissolved	ug/L	27.5	100	100	132	128	104	100	75-125	3	20		
Selenium, Dissolved	ug/L	ND	100	100	93.9	93.7	94	93	75-125	0	20		
Thallium, Dissolved	ug/L	0.099J	100	100	97.5	94.3	97	94	75-125	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629903

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCDONOUGH BACKGROUND

Pace Project No.: 2629903

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629903001	DGWA-53 FILTERED				
2629903001	DGWA-53 FILTERED	EPA 3010A	44792	EPA 6010D	44793
2629903001	DGWA-53 FILTERED	EPA 3005A	44746	EPA 6020B	44759
2629903001	DGWA-53 FILTERED	EPA 7470A	44780	EPA 7470A	44789

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2629903

PM: KH Due Date: 03/24/20

CLIENT: 26-GA Power

Client Name: GA POWER

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

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

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Thermometer Used THR214 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.7 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: KRW 3/10/20

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" 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. 10 DAY TAT
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	WFI	
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, VI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed KRW 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)

March 27, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629679
Pace Project No.: 30353293

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 05, 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: 2629679

Pace Project No.: 30353293

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: 2629679
Pace Project No.: 30353293

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629679001	DGWA-70A	Water	03/02/20 14:45	03/05/20 09:15
2629679002	DGWA-71	Water	03/02/20 16:20	03/05/20 09:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2629679
Pace Project No.: 30353293

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629679001	DGWA-70A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629679002	DGWA-71	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: 2629679
Pace Project No.: 30353293

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.267 ± 0.293 (0.603) C:94% T:NA	pCi/L	03/12/20 08:27	13982-63-3	
Radium-228		EPA 9320	0.152 ± 0.349 (0.774) C:77% T:89%	pCi/L	03/24/20 19:43	15262-20-1	
Total Radium		Total Radium Calculation	0.419 ± 0.642 (1.38)	pCi/L	03/27/20 14:53	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	0.752 ± 0.337 (0.312) C:94% T:NA	pCi/L	03/12/20 08:32	13982-63-3	
Radium-228		EPA 9320	0.545 ± 0.424 (0.835) C:78% T:81%	pCi/L	03/24/20 19:44	15262-20-1	
Total Radium		Total Radium Calculation	1.30 ± 0.761 (1.15)	pCi/L	03/27/20 14:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629679
Pace Project No.: 30353293

QC Batch: 387205	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
Associated Lab Samples: 2629679001, 2629679002	

METHOD BLANK: 1875683	Matrix: Water
Associated Lab Samples: 2629679001, 2629679002	

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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629679
Pace Project No.: 30353293

QC Batch: 387208	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
Associated Lab Samples: 2629679001, 2629679002	

METHOD BLANK: 1875688	Matrix: Water
Associated Lab Samples: 2629679001, 2629679002	

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	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 2629679
Pace Project No.: 30353293

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: *21 days* 3/17/2020



Workorder: 2629679 Workorder Name: Plant McDonough Background

Requested Analysis:

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# : 30353293

RAD 9815
RAD 9820

Item	Sample ID	Sample Type	Collection Date/Time	Lab ID	Matrix	Preserved Containers		RAD 9815	RAD 9820	LAB USE ONLY
						1	2			
1	DGWA-70A	PS	3/2/2020 14:45	2629679001	Water	1	2			X X
2	DGWA-71	PS	3/2/2020 16:20	2629679002	Water	1	2			X X
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time
1	<i>[Signature]</i>	3-4-20/1:20	<i>[Signature]</i>	3-5-20/9:15
2				
3				

Cooler Temperature on Receipt *11.1* °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 # 30353293

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1857 9506 7400

Label	<u>PK</u>
LIMS Login	<u>PK</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>1002191</u>	<u>PK 3-5-20</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous 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.	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>PK</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>OK</u>	Date: <u>3-5-20</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.



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52794
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

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	LCSD (Y or N)?	Y
	LCSD52794	LCSD52794
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%

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:		

Duplicate Sample Assessment		LCSD (Y or N)?	Y
		LCSD52794	LCSD52794
Sample I.D.:	LCSD52794	Enter Duplicate	
Duplicate Sample I.D.:	LCSD52794	sample IDs if	
Sample Result (pCi/L, g, F):	5.759	other than	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.851	LCS/LCSD in	
Sample Duplicate Result (pCi/L, g, F):	4.415	the space below.	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.768		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	2.299	2629679001	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	25.78%	2629679001DUP	
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Fail****		
% RPD Limit:	25%		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
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:		

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.

N/A OK 3/12/20

OK 3/12/2020

LAL 3/12/20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/11/2020
Worklist: 52794
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

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	LCSD (Y or N)?	N
	LCSD52794	LCSD52794
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):	0.508	
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%	

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:		

Duplicate Sample Assessment		
Sample I.D.:	2629679001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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	2629679001
Duplicate RPD:	86.67%	2629679001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail****	
% RPD Limit:	25%	

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:		

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.

LAL
3/12/20

3/12/2020

LAM 3/12/20



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
	LCS52796	LCS52796
Count Date:	3/24/2020	3/24/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.729	34.729
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.805	0.809
Target Conc. (pCi/L, g, F):	4.315	4.294
Uncertainty (Calculated):	0.311	0.309
Result (pCi/L, g, F):	2.200	3.349
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.658	0.938
Numerical Performance Indicator:	-5.69	-1.88
Percent Recovery:	50.99%	77.99%
Status vs Numerical Indicator:	Fail**	N/A
Status vs Recovery:	Fail Low**	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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:		
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:		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.	LCS52796	
Duplicate Sample I.D.	LCS52796	
Sample Result (pCi/L, g, F):	2.200	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.658	
Sample Duplicate Result (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 LCS/LCSD Percent Recoveries) Duplicate RPD:	41.86%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Fail**	
% RPD Limit:	36%	

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:		
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 & space
su 2nd basket
3/27/20*

*JJ
3-25-20*

Arblastro



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:	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCSD52796	LCSD52796
Count Date:	3/27/2020	3/27/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.699	34.699
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.805	0.809
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
	0.919	0.889
Numerical Performance Indicator:	-1.32	-1.83
Percent Recovery:	84.79%	79.49%
Status vs Numerical indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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:		
Sample Matrix Spike Duplicate Result:		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment	LCSD52796	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD52796	
Duplicate Sample I.D.:	LCSD52796	
Sample Result (pCi/L, g, F):	3.656	
	0.919	
Sample Duplicate Result (pCi/L, g, F):	3.410	
	0.889	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.378	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.45%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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:		

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

Comments:

TV
3-27-20

April 06, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629779
Pace Project No.: 30354071

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 07, 2020 and March 11, 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: 2629779
Pace Project No.: 30354071

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: 2629779
Pace Project No.: 30354071

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629779001	DGWC-40	Water	03/04/20 15:15	03/07/20 10:30
2629779002	DGWC-37	Water	03/09/20 15:05	03/11/20 09:20
2629779003	DGWC-38	Water	03/09/20 13:55	03/11/20 09:20
2629779004	DGWC-39	Water	03/09/20 11:45	03/11/20 09:20
2629779005	DGWC-67	Water	03/09/20 16:00	03/11/20 09:20
2629779006	DGWC-68A	Water	03/09/20 15:13	03/11/20 09:20
2629779007	DGWC-69	Water	03/09/20 14:23	03/11/20 09:20
2629779008	EB-3	Water	03/09/20 16:15	03/11/20 09:20
2629779009	FD-3	Water	03/09/20 00:01	03/11/20 09:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2629779
Pace Project No.: 30354071

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629779001	DGWC-40	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779002	DGWC-37	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779003	DGWC-38	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779004	DGWC-39	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779005	DGWC-67	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779006	DGWC-68A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779007	DGWC-69	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779008	EB-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629779009	FD-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629779
Pace Project No.: 30354071

Sample: DGWC-40		Lab ID: 2629779001	Collected: 03/04/20 15:15	Received: 03/07/20 10:30	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	1.07 ± 0.364 (0.305) C:91% T:NA		pCi/L	03/23/20 10:05	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.554 ± 0.385 (0.740) C:83% T:78%		pCi/L	04/02/20 11:46	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	1.62 ± 0.749 (1.05)		pCi/L	04/03/20 14:54	7440-14-4	

Sample: DGWC-37		Lab ID: 2629779002	Collected: 03/09/20 15:05	Received: 03/11/20 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	0.499 ± 0.256 (0.368) C:91% T:NA		pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	-0.0603 ± 0.307 (0.727) C:83% T:86%		pCi/L	04/02/20 14:55	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	0.499 ± 0.563 (1.10)		pCi/L	04/03/20 15:09	7440-14-4	

Sample: DGWC-38		Lab ID: 2629779003	Collected: 03/09/20 13:55	Received: 03/11/20 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	0.673 ± 0.272 (0.272) C:91% T:NA		pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 9320	0.364 ± 0.361 (0.746) C:81% T:86%		pCi/L	04/02/20 14:55	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	1.04 ± 0.633 (1.02)		pCi/L	04/03/20 15:09	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629779
Pace Project No.: 30354071

Sample: DGWC-39		Lab ID: 2629779004	Collected: 03/09/20 11:45	Received: 03/11/20 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	0.694 ± 0.277 (0.265) C:89% T:NA	pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.664 ± 0.419 (0.795) C:83% T:81%	pCi/L	04/02/20 14:55	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.36 ± 0.696 (1.06)	pCi/L	04/03/20 15:09	7440-14-4	

Sample: DGWC-67		Lab ID: 2629779005	Collected: 03/09/20 16:00	Received: 03/11/20 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	0.617 ± 0.259 (0.234) C:83% T:NA	pCi/L	03/23/20 10:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.202 ± 0.284 (0.608) C:85% T:94%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.819 ± 0.543 (0.842)	pCi/L	04/03/20 15:09	7440-14-4	

Sample: DGWC-68A		Lab ID: 2629779006	Collected: 03/09/20 15:13	Received: 03/11/20 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	0.840 ± 0.317 (0.266) C:74% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.489 ± 0.358 (0.701) C:83% T:89%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.33 ± 0.675 (0.967)	pCi/L	04/03/20 15:09	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629779
Pace Project No.: 30354071

Sample: DGWC-69		Lab ID: 2629779007	Collected: 03/09/20 14:23	Received: 03/11/20 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	0.839 ± 0.290 (0.234) C:92% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.549 ± 0.351 (0.666) C:83% T:92%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.39 ± 0.641 (0.900)	pCi/L	04/03/20 15:09	7440-14-4	

Sample: EB-3		Lab ID: 2629779008	Collected: 03/09/20 16:15	Received: 03/11/20 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	0.475 ± 0.222 (0.252) C:92% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.293 ± 0.353 (0.745) C:80% T:82%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.768 ± 0.575 (0.997)	pCi/L	04/03/20 15:09	7440-14-4	

Sample: FD-3		Lab ID: 2629779009	Collected: 03/09/20 00:01	Received: 03/11/20 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	0.498 ± 0.233 (0.268) C:87% T:NA	pCi/L	03/23/20 10:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.164 ± 0.286 (0.625) C:81% T:94%	pCi/L	04/02/20 14:56	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.662 ± 0.519 (0.893)	pCi/L	04/03/20 15:09	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629779

Pace Project No.: 30354071

QC Batch: 388318

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779001

METHOD BLANK: 1880999

Matrix: Water

Associated Lab Samples: 2629779001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.364 ± 0.221 (0.350) C:92% T:NA	pCi/L	03/23/20 10:04	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629779

Pace Project No.: 30354071

QC Batch: 388323

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

METHOD BLANK: 1881006

Matrix: Water

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0681 ± 0.261 (0.594) C:84% T:89%	pCi/L	04/02/20 14:56	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629779

Pace Project No.: 30354071

QC Batch: 388320

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

METHOD BLANK: 1881003

Matrix: Water

Associated Lab Samples: 2629779002, 2629779003, 2629779004, 2629779005, 2629779006, 2629779007, 2629779008, 2629779009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.387 ± 0.205 (0.273) C:94% T:NA	pCi/L	03/23/20 10:25	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629779

Pace Project No.: 30354071

QC Batch: 388321

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629779001

METHOD BLANK: 1881004

Matrix: Water

Associated Lab Samples: 2629779001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.474 ± 0.338 (0.655) C:83% T:89%	pCi/L	04/02/20 11:45	

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: 2629779
Pace Project No.: 30354071

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.

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: 3/4/2020



Workorder: 2629779 Workorder Name: PLANT MCDONOUGH AP-1

Results Requested By: 5/19/2020

Report To: Kevin Herring Subcontract ID: Pace Analytical Pittsburgh

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# : 30354071



30354071

Sl. No.	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	PHOS	Preserved	Containers	LAB USE ONLY
1	DGWC-40	PS	3/4/2020 15:15	2629779001	Water	1	2	X X	001
2									
3									
4									
5									

Transfers	Released By	Date/Time	Received By	Date/Time
1			<i>[Signature]</i>	3-1-20 16:30
2				
3				

Cooler Temperature on Receipt *N/A* °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: 3/4/2020 Results Requested By: 3/19/2020



Workorder: 2629779

Workorder Name: PLANT MCDONOUGH AP-1

Report To: Kevin Herring | Subcontract To: Pace Analytical Pittsburgh | Requested Analysis:

Kevin Herring
Pace Analytical Charlotte
9800 Kincey 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#: 30354071

PM: JAC Due Date: 03/30/20
CLIENT: PACE_26_ATGA

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		RAD 9315		RAD 9320		LAB USE ONLY
						HNO3						
1	DGWC-36	PS	3/9/2020 13:15	2629779001	Water	✓	2	X	X			
2	DGWC-37	PS	3/9/2020 15:05	2629779002	Water	✓	2	X	X			CO2
3	DGWC-38	PS	3/9/2020 13:55	2629779003	Water	✓	2	X	X			CO3
4	DGWC-39	PS	3/9/2020 11:45	2629779004	Water	✓	2	X	X			CO4
5	DGWC-67	PS	3/9/2020 16:00	2629779005	Water	✓	2	X	X			CO5
6	DGWC-68A	PS	3/9/2020 15:13	2629779006	Water	✓	2	X	X			CO6
7	DGWC-69	PS	3/9/2020 14:23	2629779007	Water	✓	2	X	X			CO7
8	EB-3	PS	3/9/2020 16:15	2629779008	Water	✓	2	X	X			CO8
9	FD-3	PS	3/9/2020 00:00	2629779009	Water	✓	2	X	X			CO9

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	3/10/201700	<i>[Signature]</i>	3/10/2019:20	Add on project
2					
3					

Cooler Temperature on Receipt *11/1* °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 # 30354071

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1657 9506 8598

Label	<u>ML</u>
LIMS Login	<u>ML</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>ML 3-9-20</u>
	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1. <u>ML 3-11-20</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		5.
-Includes date/time/ID Matrix: <u>W</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		11. <u>(one bottle spilled in lab, around 250 mL left)</u>
Orthophosphate field filtered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		12.
Hex Cr Aqueous sample field filtered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		13.
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		14.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		16. <u>ML</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Initial when completed: <u>ML</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		17.
Trip Blank Present:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		18.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Initial when completed: <u>ML</u> Date: <u>3-9-20</u>

Client Notification/ Resolution:

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

Comments/ Resolution: retrieved 2 BPIN sample ID: 2029779-001 - sampled @ 3-9-20 15:15

retrieved @ 3-7-20 10:36

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

WO#: 30354071

PM: JAC Due Date: 03/30/20
 CLIENT: PACE_26_ATGA



Client Name: Pace NC

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1057 9506 8911

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:	Yes	No	N/A	pH paper Lot#	Date and initials of person examining contents:
				<u>10D2191</u>	<u>DK 3-1-20</u>
Chain of Custody Present:	/				
Chain of Custody Filled Out:	/				
Chain of Custody Relinquished:	/				
Sampler Name & Signature on COC:	/				
Sample Labels match COC:	/				
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):	/				
Rush Turn Around Time Requested:	/				
Sufficient Volume:	/				
Correct Containers Used:	/				
-Pace Containers Used:	/				
Containers Intact:	/				
Orthophosphate field filtered			/		
Hex Cr Aqueous sample field filtered			/		
Organic Samples checked for dechlorination:			/		
Filtered volume received for Dissolved tests			/		
All containers have been checked for preservation.	/				
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	/			Initial when completed <u>DK</u>	Date/time of preservation
				Lot # of added preservative	
Headspace In VOA Vials (>6mm):			/		
Trip Blank Present:			/		
Trip Blank Custody Seals Present			/		
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed <u>DK</u>	Date: <u>3-1-20</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.



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/20/2020
Worklist: 52921
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1880999
MB concentration:	0.364
M/B Counting Uncertainty:	0.215
MB MDC:	0.350
MB Numerical Performance Indicator:	3.32
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCSD52921	LCSD52921
Count Date:	3/23/2020	3/23/2020
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):	0.505	0.502
Target Conc. (pCi/L, g, F):	4.762	4.789
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	4.919	4.732
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.637	0.633
Numerical Performance Indicator:	0.48	-0.17
Percent Recovery:	103.28%	98.82%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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:		

Duplicate Sample Assessment	LCSD (Y or N)?	Y
Sample I.D.:	LCSD52921	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD52921	
Sample Result (pCi/L, g, F):	4.919	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.637	
Sample Duplicate Result (pCi/L, g, F):	4.732	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.633	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.407	2629980002
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	4.41%	2629980002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
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:		

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.

LAN 3/23/20

Cu 3/23/20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/20/2020
Worklist: 52921
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1880999	
MB concentration:	0.364	
M/B Counting Uncertainty:	0.215	
MB MDC:	0.350	
MB Numerical Performance Indicator:	3.32	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD52921	LCSD52921
Count Date:	3/23/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.049	0.10
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	4.762	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.919	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.637	
Numerical Performance Indicator:	0.48	
Percent Recovery:	103.28%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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:		

Duplicate Sample Assessment		
Sample I.D.:	2629980002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	2629980002DUP	
Sample Result (pCi/L, g, F):	1.046	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.339	
Sample Duplicate Result (pCi/L, g, F):	0.829	
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:	0.985	2629980002
Duplicate RPD:	23.16%	2629980002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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:		

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.

AM 3/23/20

Signature 3/23/20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/20/2020
Worklist: 52923
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1881003	
MB concentration:	0.387	
M/B Counting Uncertainty:	0.197	
MB MDC:	0.273	
MB Numerical Performance Indicator:	3.85	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCSD52923	LCSD52923
Count Date:	3/23/2020	3/23/2020
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):	0.501	0.506
Target Conc. (pCi/L, g, F):	4.801	4.755
Uncertainty (Calculated):	0.058	0.057
Result (pCi/L, g, F):	5.204	4.652
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.615	0.586
Numerical Performance Indicator:	1.28	-0.34
Percent Recovery:	108.39%	97.83%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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:		

Duplicate Sample Assessment		
Sample I.D.:	LCSD52923	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD52923	
Sample Result (pCi/L, g, F):	5.204	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.615	
Sample Duplicate Result (pCi/L, g, F):	4.652	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.586	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.275	2629733017
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	10.24%	2629733017DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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:		

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.

LAM 3/23/20

See 3/23/20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/20/2020
Worklist: 52923
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1881003
MB concentration:	0.387
M/B Counting Uncertainty:	0.197
MB MDC:	0.273
MB Numerical Performance Indicator:	3.85
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD52923	LCSD52923
Count Date:	3/23/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.049	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	4.801	
Uncertainty (Calculated):	0.058	
Result (pCi/L, g, F):	5.204	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.615	
Numerical Performance Indicator:	1.28	
Percent Recovery:	108.39%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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:		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	2629733017	
Duplicate Sample I.D.:	2629733017DUP	
Sample Result (pCi/L, g, F):	0.309	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.207	
Sample Duplicate Result (pCi/L, g, F):	0.232	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.155	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.588	
Duplicate RPD:	28.68%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	25%	

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:		

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.

LAL
3/23/20

UAM 3/23/20

Ue 3/23/20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 3/24/2020
Worklist: 52924
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1881004
MB concentration:	0.474
M/B 2 Sigma CSU:	0.338
MB MDC:	0.655
MB Numerical Performance Indicator:	2.75
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
		LCS52924
Count Date:	4/2/2020	
Spike I.D.:	19-057	
Decay Corrected Spike Concentration (pCi/mL):	34.630	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.802	
Target Conc. (pCi/L, g, F):	4.318	
Uncertainty (Calculated):	0.311	
Result (pCi/L, g, F):	3.525	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.833	
Numerical Performance Indicator:	-1.75	
Percent Recovery:	81.62%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

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:		
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:		

Duplicate Sample Assessment		
Sample I.D.:	2629980001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	2629980001DUP	
Sample Result (pCi/L, g, F):	0.271	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.325	
Sample Duplicate Result (pCi/L, g, F):	0.242	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.351	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.119	2629980001
Duplicate RPD:	11.32%	2629980001DUP
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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:		
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 initials and number: JJJ 4-3-20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 3/25/2020
Worklist: 52926
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1881006
MB Concentration:	0.068
M/B 2 Sigma CSU:	0.261
MB MDC:	0.594
MB Numerical Performance Indicator:	0.51
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS52926	LCSD52926
Count Date:	4/2/2020	4/2/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.629	34.629
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.806
Target Conc. (pCi/L, g, F):	4.262	4.297
Uncertainty (Calculated):	0.307	0.309
Result (pCi/L, g, F):	4.498	2.740
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.984	0.683
Numerical Performance Indicator:	0.45	-4.07
Percent Recovery:	105.54%	63.76%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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:		
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:		

Duplicate Sample Assessment		
Sample I.D.:	LCS52926	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD52926	
Sample Result (pCi/L, g, F):	4.498	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.984	
Sample Duplicate Result (pCi/L, g, F):	2.740	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.683	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	2.878	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	49.36%	
Duplicate Status vs Numerical Indicator:	Warning	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	35%	

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:		
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 notes: JJ 4/3/20, Cu 4/3/20

April 01, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629901
Pace Project No.: 30354096

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 11, 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: 2629901
Pace Project No.: 30354096

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: 2629901
Pace Project No.: 30354096

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629901001	DGWA-53	Water	03/09/20 12:12	03/11/20 09:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2629901
Pace Project No.: 30354096

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629901001	DGWA-53	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629901
Pace Project No.: 30354096

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: DGWA-53 Lab ID: 2629901001 Collected: 03/09/20 12:12 Received: 03/11/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	2.32 ± 0.659 (0.411) C:89% T:NA	pCi/L	03/19/20 08:08	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.19 ± 0.469 (0.718) C:81% T:96%	pCi/L	03/29/20 17:27	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	3.51 ± 1.13 (1.13)	pCi/L	03/30/20 15:02	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629901
Pace Project No.: 30354096

QC Batch: 388189	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629901001

METHOD BLANK: 1880480 Matrix: Water

Associated Lab Samples: 2629901001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.349 ± 0.224 (0.368) C:90% T:NA	pCi/L	03/18/20 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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629901
Pace Project No.: 30354096

QC Batch: 388190	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 2629901001

METHOD BLANK: 1880481 Matrix: Water

Associated Lab Samples: 2629901001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0172 ± 0.277 (0.657) C:79% T:93%	pCi/L	03/29/20 17:28	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 2629901
Pace Project No.: 30354096

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.

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: 3/9/2020

Results Requested By: *21 days*
3/24/2020



Workorder: 2629901

Workorder Name: PLANT MCDONOUGH BACKGROUND

Report To: Subcontractor: Requested Analysis:

Kevin Herring
Pace Analytical Charlotte
9800 Kincey 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#: 30354096



30354096

RAD 9815
RAD 9820

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				LAB USE ONLY			
						HNO3							
1	DGWA-53	PS	3/9/2020 12:12	2629901001	Water	<i>A</i>	<i>L</i>			X	X		<i>cc</i>
2													
3													
4													
5													

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>K Herring</i>	<i>3/10/20 1700</i>	<i>[Signature]</i>	<i>3-11-20 9:20</i>	
2					
3					

Cooler Temperature on Receipt *M/A* °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 # 30354096

Label	<u>DK</u>
LIMS Login	<u>DK</u>

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1057 9506 8911

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>10D2191</u>	<u>DK 3-11-20</u>
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>PM 2</u>
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	Date/time of preservation
				<u>DK</u>	
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	Date: <u>3-11-20</u>
				<u>DK</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: 3/18/2020
Worklist: 52916
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1880480
MB concentration:	0.349
M/B Counting Uncertainty:	0.218
MB MDC:	0.368
MB Numerical Performance Indicator:	3.14
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS52916	LCS52916
Count Date:	3/19/2020	3/19/2020
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):	0.500	0.507
Target Conc. (pCi/L, g, F):	4.814	4.745
Uncertainty (Calculated):	0.058	0.057
Result (pCi/L, g, F):	3.914	4.217
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.746	0.760
Numerical Performance Indicator:	-2.36	-1.36
Percent Recovery:	81.31%	88.88%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

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:		

Duplicate Sample Assessment		
Sample I.D.:	LCS52916	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS52916	
Sample Result (pCi/L, g, F):	3.914	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.746	
Sample Duplicate Result (pCi/L, g, F):	4.217	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.760	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.557	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	8.89%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

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:		

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

Comments:

Ch 3/19/20

JJI
3-19-20



Quality Control Sample Performance Assessment

Test: Ra-226
Analyst: LAL
Date: 3/18/2020
Worklist: 52916
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1880480
MB concentration:	0.349
M/B Counting Uncertainty:	0.218
MB MDC:	0.368
MB Numerical Performance Indicator:	3.14
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD52916	LCSD52916
Count Date:	3/19/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.050	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.500	
Target Conc. (pCi/L, g, F):	4.814	
Uncertainty (Calculated):	0.058	
Result (pCi/L, g, F):	3.914	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.746	
Numerical Performance Indicator:	-2.36	
Percent Recovery:	81.31%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

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:		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92468160004	
Duplicate Sample I.D.:	92468160004DUP	
Sample Result (pCi/L, g, F):	0.705	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.273	
Sample Duplicate Result (pCi/L, g, F):	0.619	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.358	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.377	
Duplicate RPD:	13.07%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MS/MSD 1	MS/MSD 2
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:		

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

Comments:

JJ
3-19-20

Or 3/19/20



Quality Control Sample Performance Assessment

Test: Ra-228
Analyst: VAL
Date: 3/19/2020
Worklist: 52917
Matrix: WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1880481	
MB concentration:	-0.017	
M/B 2 Sigma CSU:	0.277	
MB MDC:	0.657	
MB Numerical Performance Indicator:	-0.12	
MB Status vs Numerical Indicator:	Pass	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS52917	LCS52917
Count Date:	3/29/2020	3/29/2020
Spike I.D.:	19-057	19-057
Decay Corrected Spike Concentration (pCi/mL):	34.673	34.673
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.806	0.806
Target Conc. (pCi/L, g, F):	4.291	4.301
Uncertainty (Calculated):	0.309	0.310
Result (pCi/L, g, F):	3.889	3.464
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.927	0.881
Numerical Performance Indicator:	-0.81	-1.76
Percent Recovery:	90.64%	80.54%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

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:		
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:		

Duplicate Sample Assessment		
Sample I.D.:	LCS52917	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD52917	
Sample Result (pCi/L, g, F):	3.889	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.927	
Sample Duplicate Result (pCi/L, g, F):	3.464	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.881	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	0.652	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.80%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

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:		
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:

JD
3-30-20

KLB
3-30-20

Product Name: Low-Flow System

Date: 2019-08-27 15:12:10

Project Information:

Operator Name D. Herrera
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 43.05 ft

Pump placement from TOC 43.05 ft

Well Information:

Well ID DGWA-71
Well diameter 2 in
Well Total Depth 47.79 ft
Screen Length 10 ft
Depth to Water 28.55 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.4381711 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5.4 in
Total Volume Pumped 6.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:49:32	300.03	22.12	5.82	73.52	5.48	29.00	2.30	99.06
Last 5	14:54:32	600.02	20.98	5.86	74.00	3.18	29.00	3.27	88.08
Last 5	14:59:32	900.02	20.97	5.88	74.19	3.62	29.00	3.47	81.08
Last 5	15:04:32	1200.02	21.17	5.87	73.95	2.98	29.00	3.52	81.70
Last 5	15:09:32	1500.02	21.27	5.87	73.53	3.33	29.00	3.56	78.32
Variance 0			-0.01	0.01	0.19			0.20	-7.00
Variance 1			0.20	-0.00	-0.23			0.05	0.62
Variance 2			0.11	-0.00	-0.42			0.04	-3.38

Notes

Sampled DGWA-71
Sampled DGWA-71

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 10:01:56

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 0.170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.89 ft
Screen Length 10 ft
Depth to Water 15.63 ft

Pumping Information:

Final Pumping Rate 120 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 137.64 in
Total Volume Pumped 13.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:38:45	1200.00	19.32	5.99	163.51	17.10	24.67	0.36	73.84
Last 5	09:43:45	1499.99	19.71	5.97	165.81	11.10	25.80	0.42	72.33
Last 5	09:48:45	1799.99	20.32	5.98	166.85	6.71	26.25	0.45	69.93
Last 5	09:53:45	2099.98	20.62	5.98	171.34	5.55	26.88	0.47	66.93
Last 5	09:58:45	2399.98	21.08	5.99	172.58	5.07	27.10	0.49	63.67
Variance 0			0.61	0.01	1.04			0.03	-2.40
Variance 1			0.30	-0.00	4.49			0.02	-2.99
Variance 2			0.46	0.01	1.24			0.01	-3.27

Notes

Purged dry with final DTW at 27.10. Returning to sample 8/28

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 11:06:07

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 0.170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.89 ft
Screen Length 10 ft
Depth to Water 15.59 ft

Pumping Information:

Final Pumping Rate 480 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 141.24 in
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:42:13	2099.98	20.35	6.17	188.61	5.89	21.31	0.12	41.31
Last 5	10:47:13	2399.98	19.86	6.17	172.49	5.14	23.50	0.20	43.20
Last 5	10:52:13	2699.97	20.26	6.15	170.78	4.01	25.45	0.26	44.73
Last 5	10:57:13	2999.97	20.48	6.13	170.58	3.80	26.80	0.33	45.67
Last 5	11:02:13	3299.96	21.24	6.11	170.74	3.88	27.36	0.41	45.80
Variance 0			0.40	-0.02	-1.71			0.06	1.52
Variance 1			0.23	-0.02	-0.20			0.07	0.94
Variance 2			0.75	-0.02	0.16			0.08	0.13

Notes

Missed 24hr sample deadline. Purged dry again, will sample 8/29

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 15:58:36

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 0.170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.89 ft
Screen Length 10 ft
Depth to Water 15.80 ft

Pumping Information:

Final Pumping Rate 120 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 10.2 in
Total Volume Pumped 30 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	15:56:26	300.04	26.84	6.04	208.53	2.99	16.65	0.88	51.78
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

Sampled DGWA-53 at 1555. Previously purged dry twice

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 10:16:14

Project Information:

Operator Name D. Herrera
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 56.00 ft

Pump placement from TOC 56.00 ft

Well Information:

Well ID DGWA-70A
Well diameter 2 in
Well Total Depth 62.54 ft
Screen Length 10 ft
Depth to Water 40.40 ft

Pumping Information:

Final Pumping Rate 220 mL/min
Total System Volume 0.5051225 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 7.8 in
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:50:15	600.02	20.32	5.50	63.51	9.71	41.05	4.71	79.84
Last 5	09:55:15	899.92	20.17	5.52	64.35	3.20	41.05	4.64	76.74
Last 5	10:00:15	1199.92	20.22	5.54	65.40	1.92	41.05	4.66	75.61
Last 5	10:05:15	1499.91	20.04	5.54	65.74	1.80	41.05	4.64	76.17
Last 5	10:10:15	1799.92	20.17	5.53	65.72	1.12	41.05	4.61	75.13
Variance 0			0.05	0.02	1.05			0.01	-1.13
Variance 1			-0.18	0.00	0.34			-0.02	0.56
Variance 2			0.13	-0.00	-0.02			-0.03	-1.04

Notes

Sampling GWA-70A plus field blank
Sampled DGWA-70A and FB-1

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 09:58:14

Project Information:

Operator Name C. Tidwell
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 .17 in
Tubing Length 38 ft

Pump placement from TOC 38 ft

Well Information:

Well ID DGWC-37
Well diameter 2 in
Well Total Depth 43.10 ft
Screen Length 10 ft
Depth to Water 13.79 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.5 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:35:35	900.02	20.17	6.26	400.84	12.58	14.01	1.77	120.91
Last 5	09:40:35	1200.02	20.50	6.28	397.76	6.58	14.00	2.03	123.16
Last 5	09:45:35	1500.02	20.40	6.26	401.45	4.88	14.00	1.82	125.02
Last 5	09:50:35	1800.02	20.48	6.26	401.39	7.74	14.01	1.73	128.65
Last 5	09:55:35	2100.02	20.51	6.27	399.06	4.46	14.00	1.71	131.73
Variance 0			-0.11	-0.02	3.69			-0.21	1.86
Variance 1			0.09	0.00	-0.06			-0.10	3.63
Variance 2			0.02	0.01	-2.33			-0.02	3.07

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 11:27:47

Project Information:

Operator Name C. Tidwell
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 .17 in
Tubing Length 23 ft

Pump placement from TOC 23 ft

Well Information:

Well ID DGWC-38
Well diameter 2 in
Well Total Depth 28 ft
Screen Length 10 ft
Depth to Water 6.62 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1926587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.08 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	11:13:10	300.09	22.09	5.98	684.06	4.31	6.96	0.13	102.73
Last 5	11:18:10	600.02	22.38	5.98	683.79	2.52	6.96	0.12	106.78
Last 5	11:23:10	900.02	22.28	5.98	682.95	1.05	6.96	0.12	110.47
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.29	0.00	-0.27			-0.01	4.05
Variance 2			-0.10	0.00	-0.84			-0.00	3.69

Notes

I-pad overheated. First 30 minutes of readings lost.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 13:42:49

Project Information:

Operator Name C. Tidwell
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 .17 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-39
Well diameter 2 in
Well Total Depth 24.65 ft
Screen Length 10 ft
Depth to Water 8.95 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1748051 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 10.8 in
Total Volume Pumped 6.0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:19:23	600.02	22.62	6.34	804.34	4.48	9.85	0.16	30.92
Last 5	13:24:23	900.02	22.81	6.38	799.53	2.33	9.83	0.14	25.61
Last 5	13:29:23	1200.02	22.38	6.39	799.76	2.30	9.85	0.13	23.56
Last 5	13:34:23	1500.02	22.18	6.40	805.01	2.17	9.85	0.12	20.54
Last 5	13:39:23	1800.02	22.36	6.41	800.94	2.05	9.85	0.11	18.94
Variance 0			-0.43	0.01	0.22			-0.01	-2.05
Variance 1			-0.20	0.01	5.25			-0.00	-3.03
Variance 2			0.18	0.01	-4.07			-0.01	-1.59

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 15:17:09

Project Information:

Operator Name C. Tidwell
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 .17 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWC-40
Well diameter 2 in
Well Total Depth 38.45 ft
Screen Length 10 ft
Depth to Water 20.15 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.72 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:53:29	600.02	23.34	4.89	545.88	2.04	20.21	2.26	178.78
Last 5	14:58:29	900.02	23.39	4.74	539.83	1.60	20.21	2.36	203.13
Last 5	15:03:29	1200.02	23.83	4.70	541.55	1.02	20.21	2.35	223.02
Last 5	15:08:29	1500.02	23.79	4.69	539.02	1.33	20.21	2.34	239.28
Last 5	15:13:29	1800.02	23.55	4.68	537.92	0.91	20.21	2.37	252.08
Variance 0			0.44	-0.04	1.71			-0.01	19.89
Variance 1			-0.04	-0.01	-2.53			-0.01	16.26
Variance 2			-0.25	-0.01	-1.09			0.03	12.81

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 15:02:50

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 0.170 in
Tubing Length 50 ft

Pump placement from TOC 50 ft

Well Information:

Well ID DGWC-67
Well diameter 2 in
Well Total Depth 55.50 ft
Screen Length 10 ft
Depth to Water 9.99 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3131711 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5.76 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:49:22	300.03	22.47	6.26	405.15	2.13	10.43	0.31	70.38
Last 5	14:54:22	600.02	21.39	6.23	408.07	1.93	10.47	0.21	71.36
Last 5	14:59:22	900.01	21.42	6.22	410.11	3.58	10.47	0.18	71.67
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-1.08	-0.03	2.92			-0.10	0.98
Variance 2			0.03	-0.01	2.04			-0.03	0.31

Notes

Sampled DGWC-67 at 1500

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 13:49:16

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 0.170 in
Tubing Length 25 ft

Pump placement from TOC 25 ft

Well Information:

Well ID DGWC-68A
Well diameter 2 in
Well Total Depth 29.79 ft
Screen Length 10 ft
Depth to Water 10.11 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2015856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.36 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:36:45	300.03	22.17	6.60	412.29	0.40	10.36	0.28	67.34
Last 5	13:41:45	600.01	20.18	6.60	425.41	0.46	10.38	0.19	67.76
Last 5	13:46:45	900.01	20.39	6.60	425.53	0.97	10.39	0.13	67.60
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-1.99	0.00	13.12			-0.09	0.42
Variance 2			0.21	0.00	0.13			-0.06	-0.16

Notes

Sampled DGWC-68A at 1345

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 12:04:19

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
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 0.170 in
Tubing Length 17 ft

Pump placement from TOC 17 ft

Well Information:

Well ID DGWC-69
Well diameter 2 in
Well Total Depth 24.03 ft
Screen Length 10 ft
Depth to Water 5.86 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1658782 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 14.88 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	11:47:18	300.03	23.14	6.16	107.01	1.17	6.70	2.99	53.89
Last 5	11:52:18	600.02	22.65	6.12	108.17	0.60	6.96	2.97	53.26
Last 5	11:57:18	900.01	21.81	6.10	108.71	0.48	7.06	2.98	54.57
Last 5	12:02:18	1200.00	21.42	6.09	108.85	0.40	7.10	2.97	55.79
Last 5									
Variance 0			-0.49	-0.04	1.16			-0.01	-0.63
Variance 1			-0.84	-0.02	0.54			0.01	1.31
Variance 2			-0.39	-0.01	0.14			-0.01	1.23

Notes

Sampled DGWC-69 at 1200. FD-2 here

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 11:02:28

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type
Tubing Type
Tubing Diameter
Tubing Length
Bailer Teflon
in
ft

Pump placement from TOC ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.85 ft
Screen Length 10 ft
Depth to Water 15.22 ft

Pumping Information:

Final Pumping Rate 0 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 180 sec
Stabilization Drawdown 259.44 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	10:54:56	180.05	17.94	6.46	205.79	--	--	2.84	-15.61
Last 5	10:57:56	360.02	17.45	6.47	190.24	--	--	4.01	-15.53
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.49	0.01	-15.55			1.17	0.08
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

Purging dry via bailer. Will sample within 24hr. Recording well volumes until dry
Purged dry at 4.5gal removed. Recorded initial + 1 well volume (3.5 gal)

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 10:07:38

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.85 ft
Screen Length 10 ft
Depth to Water 15.05 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 30 sec
Stabilization Drawdown 0 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:04:15	30.05	20.35	6.69	190.27	2.27	15.05	4.85	15.16
Last 5	10:04:45	60.03	20.21	6.60	191.32	--	--	4.77	16.32
Last 5	10:05:15	90.02	20.12	6.55	192.38	--	--	4.73	16.77
Last 5	10:05:45	120.02	20.08	6.51	193.62	--	--	4.70	16.89
Last 5									
Variance 0			-0.14	-0.09	1.05			-0.09	1.16
Variance 1			-0.09	-0.05	1.07			-0.03	0.45
Variance 2			-0.04	-0.03	1.23			-0.03	0.12

Notes

Purged dry 10-15-19. Use initial reading for field data.Sampled at 1000.

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 12:18:51

Project Information:

Operator Name D. Herrera
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 54.7 ft

Pump placement from TOC 54.7 ft

Well Information:

Well ID DGWA-70A
Well diameter 2 in
Well Total Depth 62.41 ft
Screen Length 10 ft
Depth to Water 42.68 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4591492 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 12.84 in
Total Volume Pumped 15.0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 10
Last 5	11:54:49	1800.01	14.03	5.59	67.00	0.45	43.75	5.13	112.11
Last 5	11:59:50	2101.00	13.98	5.59	66.79	0.65	43.75	5.13	111.94
Last 5	12:04:50	2401.00	13.90	5.60	66.83	0.63	43.75	5.12	110.12
Last 5	12:09:50	2700.99	13.91	5.61	66.69	0.66	43.75	5.12	109.93
Last 5	12:14:51	3001.99	13.80	5.61	66.72	0.19	43.75	5.11	108.54
Variance 0			-0.08	0.01	0.04			-0.01	-1.81
Variance 1			0.01	0.00	-0.14			-0.01	-0.19
Variance 2			-0.11	0.00	0.03			-0.01	-1.39

Notes

Sampled DGWA-70A and FB-1

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 15:11:35

Project Information:

Operator Name D. Herrera
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364456
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type SamplePro
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 42.71 ft

Pump placement from TOC 42.71 ft

Well Information:

Well ID DGWA-71
Well diameter 2 in
Well Total Depth 47.71 ft
Screen Length 10 ft
Depth to Water 29.42 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.4056328 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 6.48 in
Total Volume Pumped 13.50 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%	+/- 5		+/- 10%	+/- 10
Last 5	14:47:05	1500.01	14.63	5.87	75.11	6.56	29.96	1.14	56.32
Last 5	14:52:05	1800.01	14.62	5.88	74.98	5.42	29.96	1.11	57.14
Last 5	14:57:05	2100.00	14.60	5.87	76.50	4.08	29.96	0.70	58.25
Last 5	15:02:05	2400.00	14.59	5.88	76.22	3.50	29.96	0.70	58.58
Last 5	15:07:05	2699.99	14.62	5.88	76.06	1.99	29.96	0.71	60.21
Variance 0			-0.02	-0.01	1.52			-0.41	1.11
Variance 1			-0.02	0.01	-0.28			0.01	0.33
Variance 2			0.03	-0.00	-0.16			0.00	1.63

Notes

Sampled DGWA-71

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-18 09:07:12

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 38 ft

Pump placement from TOC 38 ft

Well Information:

Well ID DGWC-37
Well diameter 2 in
Well Total Depth 43.08 ft
Screen Length 10 ft
Depth to Water 13.99 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.48 in
Total Volume Pumped 6.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:44:47	300.05	15.39	6.19	436.79	5.76	14.26	1.20	38.12
Last 5	08:49:47	600.02	15.86	6.22	416.71	3.01	14.28	1.29	32.17
Last 5	08:54:47	900.02	15.94	6.24	409.99	1.62	14.28	1.48	34.52
Last 5	08:59:47	1200.02	15.89	6.25	404.41	2.20	14.28	1.56	36.42
Last 5	09:04:47	1500.02	15.89	6.26	396.22	1.14	14.28	1.52	37.00
Variance 0			0.08	0.01	-6.72			0.19	2.35
Variance 1			-0.05	0.01	-5.58			0.09	1.90
Variance 2			-0.00	0.01	-8.19			-0.05	0.58

Notes

Extra radium

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-18 09:03:45

Project Information:

Operator Name A. McClure
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 23 ft

Pump placement from TOC 23 ft

Well Information:

Well ID DGWC-38
Well diameter 2 in
Well Total Depth 28.8 ft
Screen Length 10 ft
Depth to Water 6.82 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1926587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.92 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:50:39	300.06	17.14	6.07	690.50	2.54	7.23	0.24	32.49
Last 5	08:55:39	600.02	17.41	6.00	682.24	1.27	7.23	0.13	36.10
Last 5	09:00:39	900.02	17.38	6.00	683.45	1.24	7.23	0.11	36.08
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.27	-0.07	-8.26			-0.10	3.61
Variance 2			-0.03	-0.00	1.21			-0.02	-0.02

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-18 10:44:36

Project Information:

Operator Name A. McClure
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 553835
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-39
Well diameter 2 in
Well Total Depth 24.62 ft
Screen Length 10 ft
Depth to Water 8.64 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1748051 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 11.28 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	10:25:43	300.11	17.60	6.28	813.79	4.20	9.37	0.25	-31.51
Last 5	10:30:43	600.02	17.90	6.33	810.85	4.68	9.51	0.14	-44.04
Last 5	10:35:43	900.02	18.17	6.34	810.65	3.48	9.56	0.12	-51.38
Last 5	10:40:43	1200.02	18.08	6.35	807.94	2.25	9.58	0.11	-54.58
Last 5									
Variance 0			0.30	0.04	-2.94			-0.10	-12.53
Variance 1			0.26	0.01	-0.19			-0.02	-7.34
Variance 2			-0.09	0.01	-2.71			-0.01	-3.20

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-18 12:49:18

Project Information:

Operator Name Y. C. Soo
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 364452
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWC-40
Well diameter 2 in
Well Total Depth 38.4 ft
Screen Length 10 ft
Depth to Water 20.82 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.96 in
Total Volume Pumped 16.5 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%	+/- 5		+/- 10%	+/- 10
Last 5	12:26:20	2100.04	20.31	4.72	534.22	5.28	20.90	1.94	112.23
Last 5	12:31:20	2400.04	20.35	4.73	532.41	4.93	20.90	1.92	117.55
Last 5	12:36:20	2700.04	20.35	4.72	534.98	4.41	20.90	1.92	115.41
Last 5	12:41:21	3001.04	20.20	4.74	533.72	4.25	20.90	1.89	114.15
Last 5	12:46:21	3301.04	20.21	4.71	535.20	4.64	20.90	1.93	121.97
Variance 0			0.00	-0.01	2.57			-0.00	-2.15
Variance 1			-0.15	0.02	-1.27			-0.03	-1.25
Variance 2			0.02	-0.02	1.48			0.04	7.82

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-17 15:47:50

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 50 ft

Pump placement from TOC 50 ft

Well Information:

Well ID DGWC-67
Well diameter 2 in
Well Total Depth 55.5 ft
Screen Length 10 ft
Depth to Water 10.10 ft

Pumping Information:

Final Pumping Rate 250 mL/min
Total System Volume 0.3131711 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 8.16 in
Total Volume Pumped 3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:35:18	300.03	19.19	6.13	408.46	1.26	10.74	0.83	51.59
Last 5	15:40:18	600.02	18.57	6.14	408.05	0.83	10.76	0.64	36.86
Last 5	15:45:18	900.02	18.63	6.14	412.12	1.15	10.78	0.30	30.83
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.62	0.01	-0.42			-0.19	-14.72
Variance 2			0.05	0.00	4.07			-0.34	-6.03

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 16:13:49

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 25 ft

Pump placement from TOC 25 ft

Well Information:

Well ID DGWC-68A
Well diameter 2 in
Well Total Depth 29.79 ft
Screen Length 10 ft
Depth to Water 10.13 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.2015856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.68 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:01:37	300.02	17.63	6.57	431.74	0.72	10.50	0.36	55.23
Last 5	16:06:37	600.02	17.41	6.59	432.51	0.48	10.51	0.24	40.84
Last 5	16:11:37	900.02	17.28	6.60	431.91	0.51	10.52	0.17	41.62
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.23	0.02	0.77			-0.12	-14.40
Variance 2			-0.13	0.01	-0.60			-0.07	0.79

Notes

Sampled DGWC-68A at 1610. FD-3 here

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 15:25:46

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463453
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-69
Well diameter 2 in
Well Total Depth 24.06 ft
Screen Length 10 ft
Depth to Water 5.87 ft

Pumping Information:

Final Pumping Rate 300 mL/min
Total System Volume 0.1748051 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 26.16 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:04:16	300.02	18.95	6.18	174.35	4.02	7.30	1.13	124.80
Last 5	15:09:16	600.02	18.44	6.20	173.72	3.09	7.72	1.09	117.26
Last 5	15:14:16	900.02	18.19	6.20	161.06	1.74	7.94	1.22	112.12
Last 5	15:19:16	1200.02	18.07	6.20	157.50	1.59	8.01	1.32	108.32
Last 5	15:24:17	1501.02	17.98	6.19	159.24	1.53	8.05	1.36	108.81
Variance 0			-0.25	-0.00	-12.66			0.13	-5.14
Variance 1			-0.12	0.00	-3.56			0.10	-3.80
Variance 2			-0.08	-0.01	1.74			0.04	0.49

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 12:14:05

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 565679
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 32 ft

Pump placement from TOC 32 ft

Well Information:

Well ID DGWA-53
Well diameter 2 in
Well Total Depth 36.89 ft
Screen Length 10 ft
Depth to Water 12.83 ft

Pumping Information:

Final Pumping Rate 120 mL/min
Total System Volume 0.2328295 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 110.76 in
Total Volume Pumped 24.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:52:54	9603.70	18.69	6.41	239.37	8.91	22.06	0.32	-49.05
Last 5	11:57:54	9903.69	18.47	6.41	238.76	8.39	22.06	0.33	-48.03
Last 5	12:02:54	10203.68	18.53	6.41	239.83	8.74	22.06	0.32	-50.04
Last 5	12:07:54	10503.67	18.92	6.41	240.66	8.92	22.06	0.31	-51.33
Last 5	12:12:56	10805.66	18.69	6.41	240.41	8.84	22.06	0.32	-50.44
Variance 0			0.06	0.01	1.07			-0.00	-2.01
Variance 1			0.39	-0.00	0.83			-0.01	-1.29
Variance 2			-0.23	-0.00	-0.25			0.01	0.89

Notes

Final purge (3hr) taking total and dissolved metals

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-02 14:47:40

Project Information:

Operator Name D.Thomas
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 410135
Turbidity Make/Model Lamotte 2020

Pump Information:

Pump Model/Type Samplepro
Tubing Type Poly
Tubing Diameter .170 in
Tubing Length 57 ft

Pump placement from TOC 57 ft

Well Information:

Well ID DGWA-70A
Well diameter 2 in
Well Total Depth 62.41 ft
Screen Length 10 ft
Depth to Water 38.52 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.4591492 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.56 in
Total Volume Pumped 3.75 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	14:25:03	300.11	15.12	5.85	53.48	13.20	38.90	5.31	156.26
Last 5	14:30:03	600.02	15.12	5.62	53.80	6.65	38.90	5.26	155.31
Last 5	14:35:03	900.02	15.17	5.58	54.34	4.82	38.90	5.24	152.62
Last 5	14:40:03	1200.02	15.21	5.55	54.47	2.47	38.90	5.21	149.83
Last 5	14:45:03	1500.42	15.26	5.54	54.61	2.30	38.90	5.20	148.63
Variance 0			0.04	-0.04	0.53			-0.01	-2.69
Variance 1			0.04	-0.03	0.13			-0.03	-2.79
Variance 2			0.05	-0.00	0.14			-0.01	-1.20

Notes

Started purging at 1420
Stopped purging and began sampling at 1445

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-02 16:19:02

Project Information:

Operator Name D.Thomas
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 410135
Turbidity Make/Model Lamotte 2020

Pump Information:

Pump Model/Type Samplepro
Tubing Type Poly
Tubing Diameter .170 in
Tubing Length 42 ft

Pump placement from TOC 42 ft

Well Information:

Well ID DGWA-71
Well diameter 2 in
Well Total Depth 47.71 ft
Screen Length 10 ft
Depth to Water 26.42 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4024638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.32 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	16:01:06	300.03	16.40	5.75	64.77	1.64	26.60	0.39	47.11
Last 5	16:06:06	600.02	16.37	5.75	65.97	0.83	26.60	0.33	51.31
Last 5	16:11:06	900.02	16.38	5.77	66.85	0.58	26.60	0.32	55.57
Last 5	16:16:06	1200.02	16.29	5.77	67.10	0.57	26.60	0.31	62.37
Last 5									
Variance 0			-0.03	0.00	1.20			-0.07	4.20
Variance 1			0.01	0.01	0.88			-0.01	4.26
Variance 2			-0.09	0.01	0.25			-0.01	6.80

Notes

Started purging at 1556
Stopped purging and began sampling at 1620

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 15:06:33

Project Information:

Operator Name D.Thomas
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 410135
Turbidity Make/Model Lamotte 2020

Pump Information:

Pump Model/Type Alexis
Tubing Type Poly
Tubing Diameter .170 in
Tubing Length 38 ft

Pump placement from TOC 38 ft

Well Information:

Well ID DGWC-37
Well diameter 2 in
Well Total Depth 43.08 ft
Screen Length 10 ft
Depth to Water 12.04 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2596101 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.12 in
Total Volume Pumped 3 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		+/- 0.2	+/- 10
Last 5	14:54:06	300.09	18.40	6.36	456.79	0.32	12.30	0.36	29.60
Last 5	14:59:06	600.21	18.48	6.34	455.13	0.44	12.30	0.34	25.20
Last 5	15:04:06	900.20	18.51	6.34	445.30	0.32	12.30	0.44	23.73
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.08	-0.01	-1.65			-0.02	-4.40
Variance 2			0.03	-0.01	-9.83			0.11	-1.47

Notes

Started purging at 1449
Stopped purging and began sampling at 1505

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 13:54:51

Project Information:

Operator Name D.Thomas
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 410135
Turbidity Make/Model Lamotte 2020

Pump Information:

Pump Model/Type Alexis
Tubing Type Poly
Tubing Diameter .170 in
Tubing Length 23 ft

Pump placement from TOC 23 ft

Well Information:

Well ID DGWC-38
Well diameter 2 in
Well Total Depth 28.80 ft
Screen Length 10 ft
Depth to Water 4.36 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1926587 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 5.76 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		+/- 0.2	+/- 10
Last 5	13:37:00	300.10	18.71	6.24	640.96	1.17	4.84	0.26	3.53
Last 5	13:42:00	600.02	18.30	6.18	641.49	1.15	4.84	0.20	0.33
Last 5	13:47:00	900.02	17.95	6.15	646.56	0.88	4.84	0.18	-1.51
Last 5	13:52:00	1200.02	18.44	6.12	642.05	0.93	4.84	0.16	-5.50
Last 5									
Variance 0			-0.41	-0.06	0.53			-0.05	-3.20
Variance 1			-0.35	-0.03	5.07			-0.02	-1.84
Variance 2			0.49	-0.02	-4.51			-0.03	-3.99

Notes

Started purging at 1331
Stopped purging and began sampling at 1355

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 11:44:02

Project Information:

Operator Name D.Thomas
Company Name Golder Associates
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 410135
Turbidity Make/Model Lamotte 2020

Pump Information:

Pump Model/Type Alexis
Tubing Type Poly
Tubing Diameter .170 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-39
Well diameter 2 in
Well Total Depth 24.62 ft
Screen Length 10 ft
Depth to Water 4.65 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1748051 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 15 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		+/- 0.2	+/- 10
Last 5	11:21:04	900.02	16.85	6.43	700.29	10.45	5.70	0.19	48.40
Last 5	11:26:04	1200.07	16.92	6.38	702.35	6.61	5.74	0.16	37.92
Last 5	11:31:04	1500.29	16.78	6.38	707.89	6.99	5.80	0.17	28.96
Last 5	11:36:04	1800.27	16.83	6.38	708.13	5.97	5.87	0.14	21.28
Last 5	11:41:04	2100.27	16.99	6.37	709.99	6.58	5.90	0.12	14.36
Variance 0			-0.14	-0.01	5.54			0.01	-8.97
Variance 1			0.05	0.00	0.23			-0.03	-7.67
Variance 2			0.16	-0.00	1.86			-0.01	-6.93

Notes

Started purging at 1106
Stopped purging and began sampling at 1145

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-04 15:19:57

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 565679
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 33 ft

Pump placement from TOC 33 ft

Well Information:

Well ID DGWC-40
Well diameter 2 in
Well Total Depth 38.4 ft
Screen Length 10 ft
Depth to Water 15.39 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.237293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0.36 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:07:53	300.01	17.89	4.65	567.59	3.19	15.42	3.73	253.58
Last 5	15:12:53	599.99	18.04	4.65	565.19	2.53	15.42	3.96	246.15
Last 5	15:17:53	899.99	17.89	4.64	561.11	1.38	15.42	3.94	239.71
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.15	-0.00	-2.40			0.23	-7.44
Variance 2			-0.15	-0.01	-4.08			-0.02	-6.44

Notes

Purge began at 1455

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 16:02:51

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 565679
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 50 ft

Pump placement from TOC 50 ft

Well Information:

Well ID DGWC-67
Well diameter 2 in
Well Total Depth 55.5 ft
Screen Length 10 ft
Depth to Water 8.60 ft

Pumping Information:

Final Pumping Rate 280 mL/min
Total System Volume 0.3131711 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 8.28 in
Total Volume Pumped 4.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:50:52	300.06	18.20	6.29	404.16	1.99	9.20	0.62	55.43
Last 5	15:55:52	600.00	17.74	6.24	406.87	1.08	9.28	0.31	50.91
Last 5	16:00:52	899.99	17.66	6.23	406.66	0.96	9.29	0.25	49.05
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.46	-0.05	2.71			-0.30	-4.52
Variance 2			-0.07	-0.00	-0.21			-0.06	-1.85

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 15:15:02

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 565679
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 25 ft

Pump placement from TOC 25 ft

Well Information:

Well ID DGWC-68A
Well diameter 2 in
Well Total Depth 29.79 ft
Screen Length 10 ft
Depth to Water 8.82 ft

Pumping Information:

Final Pumping Rate 280 mL/min
Total System Volume 0.2015856 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4.44 in
Total Volume Pumped 4.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:03:01	300.02	17.87	6.60	395.53	0.96	9.18	0.20	44.02
Last 5	15:08:01	600.00	17.44	6.60	397.79	0.89	9.18	0.15	39.97
Last 5	15:13:01	899.99	17.40	6.60	399.37	0.46	9.19	0.13	38.21
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.43	0.00	2.26			-0.05	-4.04
Variance 2			-0.04	0.00	1.58			-0.02	-1.76

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-09 14:25:20

Project Information:

Operator Name K. Minkara
Company Name Golder
Project Name 166849618
Site Name Plant McDonough
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 565679
Turbidity Make/Model LaMotte

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.170 in
Tubing Length 19 ft

Pump placement from TOC 19 ft

Well Information:

Well ID DGWC-69
Well diameter 2 in
Well Total Depth 24.06 ft
Screen Length 10 ft
Depth to Water 5.02 ft

Pumping Information:

Final Pumping Rate 280 mL/min
Total System Volume 0.1748051 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 24.12 in
Total Volume Pumped 5.6 L

Low-Flow Sampling Stabilization Summary

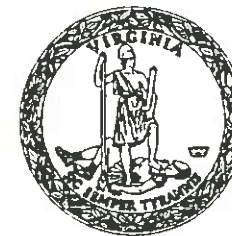
	Time	Elapsed	Temp C	pH	SpCond	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:08:16	300.07	18.51	6.21	106.82	6.51	6.30	5.09	52.54
Last 5	14:13:16	600.00	18.25	6.13	107.92	3.12	6.77	2.70	62.93
Last 5	14:18:16	899.99	18.11	6.12	108.21	3.40	6.96	2.65	65.64
Last 5	14:23:16	1199.98	18.02	6.12	108.20	4.24	7.03	2.65	66.91
Last 5									
Variance 0			-0.27	-0.08	1.11			-2.39	10.39
Variance 1			-0.13	-0.01	0.29			-0.04	2.72
Variance 2			-0.09	-0.00	-0.01			-0.00	1.27

Notes

Grab Samples



**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES**



Certifies that

**VA Laboratory ID#: 460222
Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville, NC 28804**

**Owner: PAS PARENT, LLC
Operator: PACE ANALYTICAL SERVICES, LLC
Responsible Official: FELICIA GROGAN**

Having met the requirements of 1 VAC 30-46 and
having been found compliant with the 2009 TNI Standard approved by The NELAC Institute
is hereby approved as an
Accredited Environmental Laboratory

As more fully described in the attached Scope of Accreditation

Effective Date: December 10, 2019

Expiration Date: June 14, 2020

Certificate # 10657

A handwritten signature in black ink that reads "Denise M. Toney".

**Denise M. Toney, Ph.D., HCLD
DGS Deputy Director for Laboratories**

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP)
Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.



Commonwealth of Virginia
 Department of General Services
 Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10657

Pace Analytical Services, LLC - Asheville NC
 2225 Riverside Drive
 Asheville, NC 28804

Virginia Laboratory ID: 460222
 Effective Date: December 10, 2019
 Expiration Date: June 14, 2020

DRINKING WATER

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 200.8 REV 5.4	COPPER	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1 A + C)	NITRATE AS N	VA
SM 2320 B-2011	ALKALINITY AS CaCO3	VA
SM 9223 COLISURE®	TOTAL COLIFORMS	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 200.8 REV 5.4	LEAD	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRITE AS N	VA
SM 9223 COLISURE®	ESCHERICHIA COLI	VA

NON-POTABLE WATER

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 1010	FLASHPOINT	VA
EPA 160.4	RESIDUE-VOLATILE	VA
EPA 180.1 REV 2	TURBIDITY	VA
EPA 200.7 REV 4.4	ANTIMONY	VA
EPA 200.7 REV 4.4	BARIUM	VA
EPA 200.7 REV 4.4	BORON	VA
EPA 200.7 REV 4.4	CALCIUM	VA
EPA 200.7 REV 4.4	COBALT	VA
EPA 200.7 REV 4.4	IRON	VA
EPA 200.7 REV 4.4	MAGNESIUM	VA
EPA 200.7 REV 4.4	MOLYBDENUM	VA
EPA 200.7 REV 4.4	POTASSIUM	VA
EPA 200.7 REV 4.4	SILICA AS SiO2	VA
EPA 200.7 REV 4.4	SODIUM	VA
EPA 200.7 REV 4.4	TIN	VA
EPA 200.7 REV 4.4	VANADIUM	VA
EPA 200.8 REV 5.4	ALUMINUM	VA
EPA 200.8 REV 5.4	ARSENIC	VA
EPA 200.8 REV 5.4	BERYLLIUM	VA
EPA 200.8 REV 5.4	CHROMIUM	VA
EPA 200.8 REV 5.4	COPPER	VA
EPA 200.8 REV 5.4	MANGANESE	VA
EPA 200.8 REV 5.4	NICKEL	VA
EPA 200.8 REV 5.4	SILVER	VA
EPA 200.8 REV 5.4	VANADIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	BORON	VA
EPA 200.8 REV 5.4 - EXTENDED	IRON	VA
EPA 200.8 REV 5.4 - EXTENDED	POTASSIUM	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 120.1	CONDUCTIVITY	VA
EPA 1631 E	MERCURY	VA
EPA 200.7 REV 4.4	ALUMINUM	VA
EPA 200.7 REV 4.4	ARSENIC	VA
EPA 200.7 REV 4.4	BERYLLIUM	VA
EPA 200.7 REV 4.4	CADMIUM	VA
EPA 200.7 REV 4.4	CHROMIUM	VA
EPA 200.7 REV 4.4	COPPER	VA
EPA 200.7 REV 4.4	LEAD	VA
EPA 200.7 REV 4.4	MANGANESE	VA
EPA 200.7 REV 4.4	NICKEL	VA
EPA 200.7 REV 4.4	SELENIUM	VA
EPA 200.7 REV 4.4	SILVER	VA
EPA 200.7 REV 4.4	THALLIUM	VA
EPA 200.7 REV 4.4	TITANIUM	VA
EPA 200.7 REV 4.4	ZINC	VA
EPA 200.8 REV 5.4	ANTIMONY	VA
EPA 200.8 REV 5.4	BARIUM	VA
EPA 200.8 REV 5.4	CADMIUM	VA
EPA 200.8 REV 5.4	COBALT	VA
EPA 200.8 REV 5.4	LEAD	VA
EPA 200.8 REV 5.4	MOLYBDENUM	VA
EPA 200.8 REV 5.4	SELENIUM	VA
EPA 200.8 REV 5.4	THALLIUM	VA
EPA 200.8 REV 5.4	ZINC	VA
EPA 200.8 REV 5.4 - EXTENDED	CALCIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	MAGNESIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	SODIUM	VA

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.



Commonwealth of Virginia
 Department of General Services
 Division of Consolidated Laboratory Services



Scope of Accreditation

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NON-POTABLE WATER

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 200.8 REV 5.4 - EXTENDED	TIN	VA
EPA 218.6 REV 3.3	CHROMIUM VI	VA
EPA 300.0 REV 2.1	BROMIDE	VA
EPA 300.0 REV 2.1	FLUORIDE	VA
EPA 300.0 REV 2.1	NITRATE/NITRITE	VA
EPA 300.0 REV 2.1	ORTHOPHOSPHATE AS P	VA
EPA 3005 A	PREP: ACID DIGESTION OF WATERS FOR TOTAL RECOVERABLE OR DISSOLVED METALS	VA
EPA 350.1 REV 2	AMMONIA AS N	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1 A + C)	NITRATE AS N	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRITE AS N	VA
EPA 420.4 REV 1 (AS LACHAT 10-210-00-1-X)	TOTAL PHENOLICS	VA
EPA 6010 D	ANTIMONY	VA
EPA 6010 D	BARIUM	VA
EPA 6010 D	BORON	VA
EPA 6010 D	CALCIUM	VA
EPA 6010 D	COBALT	VA
EPA 6010 D	IRON	VA
EPA 6010 D	LITHIUM	VA
EPA 6010 D	MANGANESE	VA
EPA 6010 D	NICKEL	VA
EPA 6010 D	SELENIUM	VA
EPA 6010 D	SILVER	VA
EPA 6010 D	STRONTIUM	VA
EPA 6010 D	TIN	VA
EPA 6010 D	VANADIUM	VA
EPA 6010 D - EXTENDED	SILICON	VA
EPA 6020 B	ANTIMONY	VA
EPA 6020 B	BARIUM	VA
EPA 6020 B	CADMIUM	VA
EPA 6020 B	CHROMIUM	VA
EPA 6020 B	COPPER	VA
EPA 6020 B	LEAD	VA
EPA 6020 B	MANGANESE	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 200.8 REV 5.4 - EXTENDED	TITANIUM	VA
EPA 245.1 REV 3	MERCURY	VA
EPA 300.0 REV 2.1	CHLORIDE	VA
EPA 300.0 REV 2.1	NITRATE AS N	VA
EPA 300.0 REV 2.1	NITRITE AS N	VA
EPA 300.0 REV 2.1	SULFATE	VA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	VA
EPA 351.2 REV 2 (AS LACHAT 10-107-06-2-D)	KJELDAHL NITROGEN - TOTAL (TKN)	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRATE/NITRITE	VA
EPA 365.1 REV 2 (AS LACHAT 10-115-01-1-E)	PHOSPHORUS, TOTAL	VA
EPA 6010 D	ALUMINUM	VA
EPA 6010 D	ARSENIC	VA
EPA 6010 D	BERYLLIUM	VA
EPA 6010 D	CADMIUM	VA
EPA 6010 D	CHROMIUM	VA
EPA 6010 D	COPPER	VA
EPA 6010 D	LEAD	VA
EPA 6010 D	MAGNESIUM	VA
EPA 6010 D	MOLYBDENUM	VA
EPA 6010 D	POTASSIUM	VA
EPA 6010 D	SILICA AS SiO2	VA
EPA 6010 D	SODIUM	VA
EPA 6010 D	THALLIUM	VA
EPA 6010 D	TITANIUM	VA
EPA 6010 D	ZINC	VA
EPA 6020 B	ALUMINUM	VA
EPA 6020 B	ARSENIC	VA
EPA 6020 B	BERYLLIUM	VA
EPA 6020 B	CALCIUM	VA
EPA 6020 B	COBALT	VA
EPA 6020 B	IRON	VA
EPA 6020 B	MAGNESIUM	VA
EPA 6020 B	MOLYBDENUM	VA

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NON-POTABLE WATER

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6020 B	NICKEL	VA
EPA 6020 B	SELENIUM	VA
EPA 6020 B	SODIUM	VA
EPA 6020 B	TIN	VA
EPA 6020 B	ZINC	VA
EPA 6020 B - EXTENDED	BORON	VA
EPA 6020 B - EXTENDED	STRONTIUM	VA
EPA 6020 B - EXTENDED	URANIUM	VA
EPA 7470 A	MERCURY	VA
EPA 9012 B	TOTAL CYANIDE	VA
EPA 9056 A	BROMIDE	VA
EPA 9056 A	FLUORIDE	VA
EPA 9056 A	NITRITE AS N	VA
EPA 9056 A	SULFATE	VA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	VA
LACHAT QUIKCHEM 10-204-00-1-X	CYANIDE	VA
SM 2340 B-2011	TOTAL HARDNESS AS CaCO3	VA
SM 2540 C-2011	RESIDUE-FILTERABLE (TDS)	VA
SM 2540 F-2011	RESIDUE-SETTLABLE	VA
SM 4500-CL ⁻ E-2011	CHLORIDE	VA
SM 4500-P E-2011	ORTHOPHOSPHATE AS P	VA
SM 5210 B-2011	BIOCHEMICAL OXYGEN DEMAND (BOD)	VA
SM 5220 D-2011	CHEMICAL OXYGEN DEMAND (COD)	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6020 B	POTASSIUM	VA
EPA 6020 B	SILVER	VA
EPA 6020 B	THALLIUM	VA
EPA 6020 B	VANADIUM	VA
EPA 6020 B - EXTENDED	BISMUTH	VA
EPA 6020 B - EXTENDED	LITHIUM	VA
EPA 6020 B - EXTENDED	TITANIUM	VA
EPA 7196 A	CHROMIUM VI	VA
EPA 9010 C	PREP: CYANIDE DISTILLATION	VA
EPA 9040 C	PH	VA
EPA 9056 A	CHLORIDE	VA
EPA 9056 A	NITRATE AS N	VA
EPA 9056 A	ORTHOPHOSPHATE AS P	VA
EPA 9056 A - EXTENDED	NITRATE/NITRITE	VA
EPA 9095 B	FREE LIQUID	VA
SM 2320 B-2011	ALKALINITY AS CaCO3	VA
SM 2540 B-2011	RESIDUE-TOTAL (TS)	VA
SM 2540 D-2011	RESIDUE-NONFILTERABLE (TSS)	VA
SM 3500-CR B-2011	CHROMIUM VI	VA
SM 4500-CN ⁻ E-2011	CYANIDE	VA
SM 4500-S2 ⁻ D-2011	SULFIDE	VA
SM 5210 B-2011	CARBONACEOUS BOD (CBOD)	VA
SM 5310 B-2011	TOTAL ORGANIC CARBON (TOC)	VA

SOLID AND CHEMICAL MATERIALS

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 1010 A	FLASHPOINT	VA
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	VA
EPA 3050 B	PREP: ACID DIGESTION OF SEDIMENTS, SLUDGES, AND SOILS	VA
EPA 6010 D	ANTIMONY	VA
EPA 6010 D	BARIUM	VA
EPA 6010 D	BORON	VA
EPA 6010 D	CALCIUM	VA
EPA 6010 D	COBALT	VA
EPA 6010 D	IRON	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	VA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	VA
EPA 6010 D	ALUMINUM	VA
EPA 6010 D	ARSENIC	VA
EPA 6010 D	BERYLLIUM	VA
EPA 6010 D	CADMIUM	VA
EPA 6010 D	CHROMIUM	VA
EPA 6010 D	COPPER	VA
EPA 6010 D	LEAD	VA

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Scope of Accreditation

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 Asheville, NC 28804

Virginia Laboratory ID: 460222
 Effective Date: December 10, 2019
 Expiration Date: June 14, 2020

SOLID AND CHEMICAL MATERIALS

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6010 D	MAGNESIUM	VA
EPA 6010 D	MOLYBDENUM	VA
EPA 6010 D	POTASSIUM	VA
EPA 6010 D	SILVER	VA
EPA 6010 D	STRONTIUM	VA
EPA 6010 D	TITANIUM	VA
EPA 6010 D	ZINC	VA
EPA 7471 B	MERCURY	VA
EPA 9060	TOTAL ORGANIC CARBON (TOC)	VA
EPA 9065	TOTAL PHENOLICS	VA

<u>METHOD</u>	<u>ANALYTE</u>	<u>PRIMARY</u>
EPA 6010 D	MANGANESE	VA
EPA 6010 D	NICKEL	VA
EPA 6010 D	SELENIUM	VA
EPA 6010 D	SODIUM	VA
EPA 6010 D	THALLIUM	VA
EPA 6010 D	VANADIUM	VA
EPA 6010 D - EXTENDED	SILICON	VA
EPA 9045 D	PH	VA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	VA
EPA 9095 B	FREE LIQUID	VA



State of Florida
Department of Health, Bureau of Public Health Laboratories
This is to certify that



E87315

PACE ANALYTICAL SERVICES, LLC- ATLANTA GA
110 TECHNOLOGY PARKWAY
PEACHTREE CORNERS, GA 30092

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories

DRINKING WATER - MICROBIOLOGY, DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS, DRINKING WATER - SECONDARY INORGANIC CONTAMINANTS, NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - METALS, NON-POTABLE WATER - MICROBIOLOGY, SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY, SOLID AND CHEMICAL MATERIALS - METALS, SOLID AND CHEMICAL MATERIALS - MICROBIOLOGY, SOLID AND CHEMICAL MATERIALS - PESTICIDES-HERBICIDES-PCB'S

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: May 01, 2020 Expiration Date: June 30, 2020



A blue ink signature of Patty A. Lewandowski.

Patty A. Lewandowski, MBA, MT(ASCP)
Chief Bureau of Public Health Laboratories
DH Form 1697, 7/04
NON-TRANSFERABLE E87315-45-05/01/2020
Supersedes all previously issued certificates



Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315**

EPA Lab Code: **GA00051**

(770) 734-4200

E87315

**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Drinking Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Color	SM 2120 B	Secondary Inorganic Contaminants	NELAP	4/10/2002
Escherichia coli	SM 9223 B	Microbiology	NELAP	4/10/2002
Escherichia coli	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Heterotrophic plate count	SIMPLATE	Microbiology	NELAP	5/29/2012
Nitrate	EPA 300.0	Primary Inorganic Contaminants	NELAP	4/10/2002
Nitrate	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	4/10/2002
Nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Orthophosphate as P	SM 4500-P E	Primary Inorganic Contaminants	NELAP	4/10/2002
pH	SM 4500-H+-B	Primary Inorganic Contaminants, Secondary Inorganic Contaminants	NELAP	4/10/2002
Residual free chlorine	SM 4500-Cl G	Primary Inorganic Contaminants	NELAP	11/4/2010
Total coliforms	SM 9223 B	Microbiology	NELAP	4/10/2002
Total coliforms	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Total nitrate-nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	4/10/2002
Total nitrate-nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Total residual chlorine	SM 4500-Cl G	Primary Inorganic Contaminants	NELAP	11/4/2010
Turbidity	EPA 180.1	Secondary Inorganic Contaminants	NELAP	4/10/2002



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E87315

**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chromium	EPA 200.7	Metals	NELAP	4/10/2002
Chromium	EPA 200.8	Metals	NELAP	8/30/2004
Chromium	EPA 6010	Metals	NELAP	7/1/2003
Chromium	EPA 6020	Metals	NELAP	8/30/2004
Chromium VI	SM 3500-Cr B (20th/21st/22nd Ed.)/UV-VIS	General Chemistry	NELAP	7/28/2009
Cobalt	EPA 200.7	Metals	NELAP	4/10/2002
Cobalt	EPA 200.8	Metals	NELAP	8/30/2004
Cobalt	EPA 6010	Metals	NELAP	7/1/2003
Cobalt	EPA 6020	Metals	NELAP	8/30/2004
Color	SM 2120 B	General Chemistry	NELAP	4/10/2002
Copper	EPA 200.7	Metals	NELAP	4/10/2002
Copper	EPA 200.8	Metals	NELAP	8/30/2004
Copper	EPA 6010	Metals	NELAP	4/10/2002
Copper	EPA 6020	Metals	NELAP	8/30/2004
Corrosivity (pH)	EPA 9040	General Chemistry	NELAP	7/1/2003
Cyanide	SM 4500-CN E	General Chemistry	NELAP	10/15/2007
Escherichia coli	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Fecal coliforms	COLILERT®-18 (Fecal Coliforms)	Microbiology	NELAP	11/6/2014
Fecal coliforms	SM 9222 D	Microbiology	NELAP	2/21/2002
Ferrous iron	SM 3500-Fe B (20th/21st Ed.)/UV-VIS	General Chemistry	NELAP	7/28/2009
Hardness	SM 2340 B	General Chemistry	NELAP	7/28/2009
Hardness (calc.)	EPA 200.7	Metals	NELAP	6/6/2002
Heterotrophic plate count	SIMPLATE	Microbiology	NELAP	5/29/2012
Iron	EPA 200.7	Metals	NELAP	4/10/2002
Iron	EPA 200.8	Metals	NELAP	11/6/2014
Iron	EPA 6010	Metals	NELAP	7/1/2003
Iron	EPA 6020	Metals	NELAP	8/30/2004
Iron	SM 3500-Fe D (18th/19th Ed.)/UV-VIS	General Chemistry	NELAP	2/5/2002
Lead	EPA 200.7	Metals	NELAP	4/10/2002
Lead	EPA 200.8	Metals	NELAP	8/30/2004
Lead	EPA 6010	Metals	NELAP	4/10/2002
Lead	EPA 6020	Metals	NELAP	8/30/2004
Lithium	EPA 200.8	Metals	NELAP	10/6/2016

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Issue Date: 5/1/2020

Expiration Date: 6/30/2020



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EPA Lab Code: **GA00051**

(770) 734-4200

E87315

**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 200.7	Metals	NELAP	4/10/2002
Aluminum	EPA 200.8	Metals	NELAP	8/30/2004
Aluminum	EPA 6010	Metals	NELAP	7/1/2003
Aluminum	EPA 6020	Metals	NELAP	8/30/2004
Amenable cyanide	EPA 9010/9014	General Chemistry	NELAP	7/1/2003
Amenable cyanide	SM 4500-CN- G	General Chemistry	NELAP	10/15/2007
Antimony	EPA 200.7	Metals	NELAP	4/10/2002
Antimony	EPA 200.8	Metals	NELAP	8/30/2004
Antimony	EPA 6010	Metals	NELAP	7/1/2003
Antimony	EPA 6020	Metals	NELAP	8/30/2004
Arsenic	EPA 200.7	Metals	NELAP	4/10/2002
Arsenic	EPA 200.8	Metals	NELAP	8/30/2004
Arsenic	EPA 6010	Metals	NELAP	4/10/2002
Arsenic	EPA 6020	Metals	NELAP	8/30/2004
Barium	EPA 200.7	Metals	NELAP	4/10/2002
Barium	EPA 200.8	Metals	NELAP	8/30/2004
Barium	EPA 6010	Metals	NELAP	7/1/2003
Barium	EPA 6020	Metals	NELAP	8/30/2004
Beryllium	EPA 200.7	Metals	NELAP	4/10/2002
Beryllium	EPA 200.8	Metals	NELAP	8/30/2004
Beryllium	EPA 6010	Metals	NELAP	7/1/2003
Beryllium	EPA 6020	Metals	NELAP	8/30/2004
Biochemical oxygen demand	SM 5210 B	General Chemistry	NELAP	4/10/2002
Boron	EPA 200.7	Metals	NELAP	4/10/2002
Boron	EPA 200.8	Metals	NELAP	11/6/2014
Boron	EPA 6010	Metals	NELAP	7/1/2003
Boron	EPA 6020	Metals	NELAP	8/30/2004
Cadmium	EPA 200.7	Metals	NELAP	4/10/2002
Cadmium	EPA 200.8	Metals	NELAP	8/30/2004
Cadmium	EPA 6010	Metals	NELAP	4/10/2002
Cadmium	EPA 6020	Metals	NELAP	8/30/2004
Calcium	EPA 200.7	Metals	NELAP	4/10/2002
Calcium	EPA 200.8	Metals	NELAP	11/6/2014
Calcium	EPA 6010	Metals	NELAP	7/1/2003
Calcium	EPA 6020	Metals	NELAP	8/30/2004
Carbonaceous BOD (CBOD)	SM 5210 B	General Chemistry	NELAP	4/10/2002

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State Laboratory ID: **E87315**

EPA Lab Code: **GA00051**

(770) 734-4200

E87315

**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Lithium	EPA 6020	Metals	NELAP	10/6/2016
Magnesium	EPA 200.7	Metals	NELAP	4/10/2002
Magnesium	EPA 200.8	Metals	NELAP	11/6/2014
Magnesium	EPA 6010	Metals	NELAP	7/1/2003
Magnesium	EPA 6020	Metals	NELAP	8/30/2004
Manganese	EPA 200.7	Metals	NELAP	4/10/2002
Manganese	EPA 200.8	Metals	NELAP	8/30/2004
Manganese	EPA 6010	Metals	NELAP	7/1/2003
Manganese	EPA 6020	Metals	NELAP	8/30/2004
Mercury	EPA 245.1	Metals	NELAP	4/10/2002
Mercury	EPA 7470	Metals	NELAP	4/10/2002
Molybdenum	EPA 200.7	Metals	NELAP	4/10/2002
Molybdenum	EPA 200.8	Metals	NELAP	8/30/2004
Molybdenum	EPA 6010	Metals	NELAP	4/10/2002
Molybdenum	EPA 6020	Metals	NELAP	8/30/2004
Nickel	EPA 200.7	Metals	NELAP	4/10/2002
Nickel	EPA 200.8	Metals	NELAP	8/30/2004
Nickel	EPA 6010	Metals	NELAP	4/10/2002
Nickel	EPA 6020	Metals	NELAP	8/30/2004
Nitrate	EPA 9056	General Chemistry	NELAP	7/1/2003
Nitrate as N	EPA 300.0	General Chemistry	NELAP	4/10/2002
Nitrate as N	EPA 353.2	General Chemistry	NELAP	4/17/2020
Nitrate-nitrite	EPA 300.0	General Chemistry	NELAP	4/10/2002
Nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	4/17/2020
Nitrite	EPA 9056	General Chemistry	NELAP	7/1/2003
Nitrite as N	EPA 300.0	General Chemistry	NELAP	4/10/2002
Nitrite as N	EPA 353.2	General Chemistry	NELAP	4/17/2020
Orthophosphate as P	SM 4500-P E	General Chemistry	NELAP	4/10/2002
Oxygen, dissolved	ASTM D888-09C	General Chemistry	NELAP	11/6/2014
Oxygen, dissolved	SM 4500-O G	General Chemistry	NELAP	4/10/2002
pH	EPA 9040	General Chemistry	NELAP	7/1/2003
pH	SM 4500-H+-B	General Chemistry	NELAP	10/15/2007
Phosphorus, total	EPA 200.7	Metals	NELAP	9/27/2002
Phosphorus, total	EPA 6010	Metals	NELAP	7/1/2003
Potassium	EPA 200.7	Metals	NELAP	4/10/2002
Potassium	EPA 200.8	Metals	NELAP	11/6/2014

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E87315

**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Potassium	EPA 6010	Metals	NELAP	4/10/2002
Potassium	EPA 6020	Metals	NELAP	8/30/2004
Residual free chlorine	SM 4500-Cl G	General Chemistry	NELAP	11/4/2010
Residue-filterable (TDS)	SM 2540 C	General Chemistry	NELAP	10/15/2007
Residue-nonfilterable (TSS)	SM 2540 D	General Chemistry	NELAP	10/15/2007
Residue-settleable	SM 2540 F	General Chemistry	NELAP	10/15/2007
Residue-total	SM 2540 B	General Chemistry	NELAP	10/15/2007
Residue-volatile	SM 2540 E	General Chemistry	NELAP	10/6/2016
Selenium	EPA 200.7	Metals	NELAP	4/10/2002
Selenium	EPA 200.8	Metals	NELAP	8/30/2004
Selenium	EPA 6010	Metals	NELAP	4/10/2002
Selenium	EPA 6020	Metals	NELAP	8/30/2004
Silicon	EPA 200.7	Metals	NELAP	4/10/2002
Silicon	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 200.7	Metals	NELAP	4/10/2002
Silver	EPA 200.8	Metals	NELAP	8/30/2004
Silver	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 6020	Metals	NELAP	8/30/2004
Sodium	EPA 200.7	Metals	NELAP	4/10/2002
Sodium	EPA 200.8	Metals	NELAP	11/6/2014
Sodium	EPA 6010	Metals	NELAP	7/1/2003
Sodium	EPA 6020	Metals	NELAP	8/30/2004
Strontium	EPA 200.7	Metals	NELAP	9/27/2002
Strontium	EPA 6010	Metals	NELAP	7/1/2003
Strontium	EPA 6020	Metals	NELAP	8/30/2004
Thallium	EPA 200.7	Metals	NELAP	4/10/2002
Thallium	EPA 200.8	Metals	NELAP	8/30/2004
Thallium	EPA 6010	Metals	NELAP	7/1/2003
Thallium	EPA 6020	Metals	NELAP	8/30/2004
Tin	EPA 200.7	Metals	NELAP	4/10/2002
Tin	EPA 200.8	Metals	NELAP	11/6/2014
Tin	EPA 6010	Metals	NELAP	7/1/2003
Tin	EPA 6020	Metals	NELAP	8/30/2004
Titanium	EPA 200.7	Metals	NELAP	4/10/2002
Titanium	EPA 200.8	Metals	NELAP	11/6/2014
Titanium	EPA 6010	Metals	NELAP	7/1/2003

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E87315

**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Titanium	EPA 6020	Metals	NELAP	8/30/2004
Total coliforms	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Total cyanide	EPA 9010/9014	General Chemistry	NELAP	7/1/2003
Total nitrate-nitrite	EPA 9056	General Chemistry	NELAP	7/1/2003
Total residual chlorine	SM 4500-Cl G	General Chemistry	NELAP	11/4/2010
Total, fixed, and volatile residue	SM 2540 G	General Chemistry	NELAP	9/27/2002
Turbidity	EPA 180.1	General Chemistry	NELAP	4/10/2002
Vanadium	EPA 200.7	Metals	NELAP	4/10/2002
Vanadium	EPA 200.8	Metals	NELAP	8/30/2004
Vanadium	EPA 6010	Metals	NELAP	7/1/2003
Vanadium	EPA 6020	Metals	NELAP	8/30/2004
Zinc	EPA 200.7	Metals	NELAP	4/10/2002
Zinc	EPA 200.8	Metals	NELAP	8/30/2004
Zinc	EPA 6010	Metals	NELAP	4/10/2002
Zinc	EPA 6020	Metals	NELAP	8/30/2004



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**Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092**

Matrix: **Solid and Chemical Materials**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 6010	Metals	NELAP	4/10/2002
Amenable cyanide	EPA 9010/9014	General Chemistry	NELAP	4/10/2002
Antimony	EPA 6010	Metals	NELAP	4/10/2002
Aroclor-1016 (PCB-1016)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1221 (PCB-1221)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1232 (PCB-1232)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1242 (PCB-1242)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1248 (PCB-1248)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1254 (PCB-1254)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1260 (PCB-1260)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Arsenic	EPA 6010	Metals	NELAP	4/10/2002
Barium	EPA 6010	Metals	NELAP	4/10/2002
Beryllium	EPA 6010	Metals	NELAP	4/10/2002
Boron	EPA 6010	Metals	NELAP	4/10/2002
Cadmium	EPA 6010	Metals	NELAP	4/10/2002
Calcium	EPA 6010	Metals	NELAP	4/10/2002
Chromium	EPA 6010	Metals	NELAP	4/10/2002
Cobalt	EPA 6010	Metals	NELAP	4/10/2002
Copper	EPA 6010	Metals	NELAP	4/10/2002
Fecal coliforms	SM 9222 D	Microbiology	NELAP	7/28/2009
Iron	EPA 6010	Metals	NELAP	4/10/2002
Lead	EPA 6010	Metals	NELAP	4/10/2002
Magnesium	EPA 6010	Metals	NELAP	4/10/2002
Manganese	EPA 6010	Metals	NELAP	4/10/2002
Mercury	EPA 7471	Metals	NELAP	4/10/2002
Molybdenum	EPA 6010	Metals	NELAP	4/10/2002
Nickel	EPA 6010	Metals	NELAP	4/10/2002
pH	EPA 9045	General Chemistry	NELAP	4/10/2002
Phosphorus, total	EPA 6010	Metals	NELAP	4/10/2002
Potassium	EPA 6010	Metals	NELAP	4/10/2002
Selenium	EPA 6010	Metals	NELAP	4/10/2002
Silicon	EPA 6010	Metals	NELAP	4/10/2002
Silver	EPA 6010	Metals	NELAP	4/10/2002
Sodium	EPA 6010	Metals	NELAP	7/9/2002
Strontium	EPA 6010	Metals	NELAP	4/10/2002
Thallium	EPA 6010	Metals	NELAP	4/10/2002

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E87315

Pace Analytical Services, LLC- Atlanta GA

110 Technology Parkway

Peachtree Corners, GA 30092

Matrix: **Solid and Chemical Materials**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Tin	EPA 6010	Metals	NELAP	4/10/2002
Titanium	EPA 6010	Metals	NELAP	9/27/2002
Total cyanide	EPA 9010/9014	General Chemistry	NELAP	4/10/2002
Toxicity Characteristic Leaching Procedure	EPA 1311	General Chemistry	NELAP	4/10/2002
Vanadium	EPA 6010	Metals	NELAP	4/10/2002
Zinc	EPA 6010	Metals	NELAP	4/10/2002

Quality Control Review of Analytical Data- Ash Pond AP-1 Submitted by Pace Analytical Services, LLC August 2019 - January 2020

This narrative presents results of the quality control (QC) data review performed on analytical data submitted by Pace Analytical Services, LLC. for groundwater samples collected at Plant McDonough CCR Ash Pond AP-1 between August 27, 2019 and January 6, 2020. The chemical data were reviewed to identify quality issues which could affect the use of the data for decision making purposes.

Information regarding the primary sample locations, analytical parameters, QC samples, sampling dates, and laboratory sample delivery group (SDG) designations is summarized in Table 1. In accordance with groundwater monitoring and corrective action procedures discussed in Title 40 CFR, Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, the samples were analyzed for detection monitoring constituents listed in 40 CFR, Part 257, Appendix III and assessment monitoring constituents listed in 40 CFR, Part 257, Appendix IV. Test methods included Inductively Coupled Plasma- Mass Spectrometry (USEPA Method 6020B), Mercury in Liquid Wastes (USEPA Method 7470A), Determination of Inorganic Anions By Ion Chromatography (USEPA Method 300.0), Total Dissolved Solids (Standard Methods 2540C), Radium-226 (USEPA Method 9315) and Radium-228 (USEPA Method 9320).

Data were reviewed in accordance with the US EPA Region IV Data Validation Standard Operating Procedures for Contract Laboratory Program (CLP) Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy (September 2011, Rev. 2.0), US EPA Region IV Data Validation Standard Operating Procedures for CLP Mercury Data by Cold Vapor Atomic Absorption (September 2011, Rev. 2.0), the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017), and US Department of Energy, Evaluation of Radiochemical Data Usability (April 1997). The review included an assessment of the results for completeness, precision (laboratory duplicates, matrix spike/matrix spike duplicates), accuracy (laboratory control samples and matrix spike samples), and blank contamination (including field, equipment and laboratory blanks). Additionally, sample procedures, holding times and chains-of-custody were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytic methodology, method-specific criteria or professional judgment was used.

DATA QUALITY OBJECTIVES

Laboratory Precision:	Laboratory goals for precision were met.
Field Precision:	Field goals for precision were met.
Accuracy:	Laboratory goals for accuracy were met.
Detection Limits:	Project goals for detection limits were met. Certain samples were diluted due to elevated concentrations of target analytes. Dilutions do not require qualifications based on USEPA guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of site-wide characterization.
Completeness:	There were no rejected analytical results for this event, resulting in a completion of 100%.
Holding Times:	All holding time requirements were met in accordance with specific analytical methods with the exception of Total Dissolved Solids (TDS) in sample DGWC-67.

The analysis was conducted one day past the TDS seven day holding time requirement. Using professional judgment, no qualifications were applied.

QUALIFICATIONS

In general, chemical results for the samples collected at the Site were qualified on the basis of low precision or accuracy, or on the basis of professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data by the laboratory during the data validation process.

- J+** The analyte was reported above the method detection limit; however, the concentration reported is an estimated value that may be biased high.
- U** The analyte was not detected above the method detection limit.

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines except as specified below. Although these qualifications were applied to some data from samples collected at the site and reported in sample delivery groups (SDGs), qualifications may not have been required or applied to all samples collected. A summary of sample qualifications can be found in Table 2.

- Certain arsenic, chromium, fluoride, total radium, radium-226, radium-228, sulfate, and TDS results were qualified as non-detect (U) when the analyte was detected at a similar level in an associated blank sample. As shown in Table 2, if the original sample results were below the reporting limit (RL) or the minimum detectable concentration (MDC), the results were qualified as non-detect (U) and the results were raised to the RL or MDC. If results were above the RL or MDC, the results were qualified U and the RL or MDC was raised to the sample result.
- Total radium was qualified as biased high (J+) in certain samples when one radium isotope was detected above the MDC and the other isotope was U qualified.

Golder reviewed the data from samples collected at Plant McDonough CCR Ash Pond AP-1 between August 27, 2019 and January 6, 2020 in accordance with the analytical methods, the laboratory specific QC criteria, and the guidelines. As described above, 100% of the results were acceptable for project use.

REFERENCE

Paar, J.G. & Porterfield, D.R. *Evaluation of Radiochemical Data Usability*. United States Department of Energy, Office of Environmental Restoration and Waste Management, Oak Ridge National Laboratory, April 1997.

USEPA, January 2017, National, Office of Superfund Remediation and Technology Innovation, *National Functional Guidelines for Inorganic Superfund Methods Data Review*, Revision 0.0.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data By Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy*, Revision 2.0.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Mercury Data By Cold Vapor Atomic Absorption*, Revision 2.0.

TABLE 1
Qualifier Summary Table
SCS Plant McDonough AP-1

SDGs	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Analyses				
						Select Metals (6020B)	Anions (300.0)	TDS (SM 2540C)	Mercury (7470A)	Radium (EPA 9315/9320)
2622481/2622482	DGWA-70A	8/27/2019	2622481001/2622482001	GW	-	X	X	-	X	X
2622481/2622482	DGWA-71	8/27/2019	2622481002/2622482002	GW	-	X	X	-	X	X
2622589/2622590	DGWA-53	8/28/2019	2622589001/2622590001	GW	-	X	X	-	X	X
2622587/2622588	DGWC-37	8/28/2019	2622587001/2622588001	GW	-	X	X	-	X	X
2622587/2622588	DGWC-38	8/28/2019	2622587002/2622588002	GW	-	X	X	-	X	X
2622587/2622588	DGWC-39	8/28/2019	2622587003/2622588003	GW	-	X	X	-	X	X
2622587/2622588	DGWC-40	8/28/2019	2622587004/2622588004	GW	-	X	X	-	X	X
2622587/2622588	DGWC-67	8/28/2019	2622587005/2622588005	GW	-	X	X	-	X	X
2622587/2622588	DGWC-68A	8/28/2019	2622587006/2622588006	GW	-	X	X	-	X	X
2622587/2622588	DGWC-69	8/28/2019	2622587007/2622588007	GW	-	X	X	-	X	X
2622587/2622588	FD-2	8/28/2019	2622587008/2622588008	GW	FD (DGWC-69)	X	X	-	X	X
2624397/2624398	DGWA-70A	10/15/2019	2624397001/2624398001	GW	-	X	X	X	X	X
2624397/2624398	DGWA-71	10/15/2019	2624397002/2624398002	GW	-	X	X	X	X	X
2624494/2624495	DGWA-53	10/16/2019	2624494001/2624495001	GW	-	X	X	-	X	X
2624496/2624497	DGWC-68A	10/16/2019	2624496001/2624497001	GW	-	X	X	-	X	X
2624496/2624497	DGWC-69	10/16/2019	2624496002/2624497002	GW	-	X	X	-	X	X
2624496/2624497	FD-3	10/16/2019	2624496003/2624497003	GW	FD (DGWC-68A)	X	X	-	X	X
2624571	DGWC-37	10/18/2019	2624571003	GW	-	X	X	X	X	-
2624571	DGWC-38	10/18/2019	2624571004	GW	-	X	X	X	X	-
2624571	DGWC-39	10/18/2019	2624571005	GW	-	X	X	X	X	-
2624571	DGWC-40	10/18/2019	2624571006	GW	-	X	X	X	X	-
2627493	DGWC-37	1/6/2020	2627493001	GW	-	-	-	-	-	X
2627493	DGWC-38	1/6/2020	2627493002	GW	-	-	-	-	-	X
2627493	DGWC-39	1/6/2020	2627493003	GW	-	-	-	-	-	X
2627493	DGWC-40	1/6/2020	2627493004	GW	-	-	-	-	-	X
2627493	DGWC-67	1/6/2020	2627493005	GW	-	-	-	-	-	X
2627493	FD-1	1/6/2020	2627493006	GW	FD (DGWC-67)	-	-	-	-	X

Abbreviations:

- FD - Field duplicate
- GW - Groundwater
- TDS - Total Dissolved Solids
- SDG - Sample Delivery Group
- QC - Quality Control

TABLE 2
Qualifier Summary Table
SCS Plant McDonough AP-1

SDG	Sample Name	Constituent	New Result	New RL or MDC	Qualifier	Reason
2622481	DGWA-70A	Chromium	0.010	-	U	Blank contamination
2622481	DGWA-71	Chromium	0.010	-	U	Blank contamination
2622482	DGWA-70A	Radium-226	-	1.110	U	Blank contamination
2622482	DGWA-70A	Radium-228	-	0.863	U	Blank contamination
2622482	DGWA-71	Radium-228	-	0.867	U	Blank contamination
2622482	DGWA-70A	Total Radium	-	-	J+	Blank contamination
2622586	FD-2	Total Radium	-	1.450	U	Blank contamination
2622588	DGWC-37	Radium-226	-	0.508	U	Blank contamination
2622588	DGWC-38	Radium-226	-	0.517	U	Blank contamination
2622588	DGWC-39	Radium-226	-	0.396	U	Blank contamination
2622588	DGWC-40	Radium-226	-	0.403	U	Blank contamination
2622588	DGWC-67	Radium-226	-	0.540	U	Blank contamination
2622588	DGWC-68A	Radium-226	-	0.635	U	Blank contamination
2622588	DGWC-69	Radium-226	-	1.140	U	Blank contamination
2622588	FD-2	Radium-226	-	0.985	U	Blank contamination
2622588	DGWC-68A	Total Radium	-	-	J+	Blank contamination
2622588	DGWC-69	Total Radium	-	1.380	U	Blank contamination
2622590	DGWA-53	Radium-226	-	1.380	U	Blank contamination
2622590	DGWA-53	Total Radium	-	-	J+	Blank contamination
2624397	DGWA-70A	Arsenic	0.005	-	U	Blank contamination
2624397	DGWA-71	Arsenic	0.005	-	U	Blank contamination
2624397	DGWA-71	Chromium	0.01	-	U	Blank contamination
2624397	DGWA-70A	Sulfate	1	-	U	Blank contamination
2624397	DGWA-70A	TDS	-	70	U	Blank contamination
2624397	DGWA-71	TDS	-	89	U	Blank contamination
2624398	DGWA-71	Radium-226	-	0.628	U	Blank contamination
2624494	DGWA-53	Fluoride	0.3	-	U	Blank contamination
2624496	DGWC-68A	Fluoride	0.3	-	U	Blank contamination
2624496	DGWC-69	Fluoride	0.3	-	U	Blank contamination
2624496	FD-3	Fluoride	0.3	-	U	Blank contamination
2624571	DGWC-39	Arsenic	0.005	-	U	Blank contamination
2624571	DGWC-38	Chromium	0.01	-	U	Blank contamination
2624571	DGWC-40	Chromium	0.01	-	U	Blank contamination
2624571	DGWC-67	Arsenic	0.005	-	U	Blank contamination

Abbreviations:

MDC: Minimum detectable concentration

MDL: Method detection limit

RL : Reporting limit

SDG : Sample delivery group

Qualifiers:

J+ : Estimated result, biased high

U : Non-detect result

Quality Control Review of Analytical Data- Ash Pond AP-1 Submitted by Pace Analytical Services, LLC March 2020

This narrative presents results of the quality control (QC) data review performed on analytical data submitted by Pace Analytical Services, LLC. for groundwater samples collected at Plant McDonough CCR Ash Pond AP-1 between March 2, 2020 and March 9, 2020. The chemical data were reviewed to identify quality issues which could affect the use of the data for decision making purposes.

Information regarding the primary sample locations, analytical parameters, QC samples, sampling dates, and laboratory sample delivery group (SDG) designations is summarized in Table 1. In accordance with groundwater monitoring and corrective action procedures discussed in Title 40 CFR, Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, the samples were analyzed for detection monitoring constituents listed in 40 CFR, Part 257, Appendix III and assessment monitoring constituents listed in 40 CFR, Part 257, Appendix IV. Test methods included Inductively Coupled Plasma- Mass Spectrometry (USEPA Method 6020B), Mercury in Liquid Wastes (USEPA Method 7470A), Inductively Coupled Plasma (6010D), Determination of Inorganic Anions By Ion Chromatography (USEPA Method 300.0), Total Dissolved Solids (Standard Methods 2540C), Radium-226 (USEPA Method 9315) and Radium-228 (USEPA Method 9320).

Data were reviewed in accordance with the US EPA Region IV Data Validation Standard Operating Procedures for Contract Laboratory Program (CLP) Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy (September 2011, Rev. 2.0), US EPA Region IV Data Validation Standard Operating Procedures for CLP Mercury Data by Cold Vapor Atomic Absorption (September 2011, Rev. 2.0), the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017), and US Department of Energy, Evaluation of Radiochemical Data Usability (April 1997). The review included an assessment of the results for completeness, precision (laboratory duplicates, matrix spike/matrix spike duplicates), accuracy (laboratory control samples and matrix spike samples), and blank contamination (including field, equipment and laboratory blanks). Additionally, sample procedures, holding times and chains-of-custody were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytic methodology, method-specific criteria or professional judgment was used.

DATA QUALITY OBJECTIVES

Laboratory Precision:	Laboratory goals for precision were met.
Field Precision:	Field goals for precision were met.
Accuracy:	Laboratory goals for accuracy were met.
Detection Limits:	Project goals for detection limits were met. Certain samples were diluted due to elevated concentrations of target analytes. Dilutions do not require qualifications based on USEPA guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of site-wide characterization.
Completeness:	There were no rejected analytical results for this event, resulting in a completion of 100%.
Holding Times:	All holding time requirements were met in accordance with specific analytical methods.

QUALIFICATIONS

In general, chemical results for the samples collected at the Site were qualified on the basis of low precision or accuracy, or on the basis of professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data by the laboratory during the data validation process.

- U** The analyte was not detected above the method detection limit.

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines except as specified below. Although these qualifications were applied to some data from samples collected at the site and reported in sample delivery groups (SDGs) 2629679, 2629779, 30353293, 30354071, 30354096, 2629901 and 2629901, qualifications may not have been required or applied to all samples collected. A summary of sample qualifications can be found in Table 2.

- Boron, chromium, total dissolved solids (TDS), and radium-226 results were qualified as non-detect (U) when the analyte was detected at a similar level in an associated blank sample. As shown in Table 2, if the original sample results were below the reporting limit (RL) or the minimum detectable concentration (MDC), the results were qualified as non-detect (U) and the results were raised to the RL or MDC. If results were above the RL or MDC, the results were qualified U and the RL or MDC was raised to the sample result.

Golder reviewed the data from samples collected at Plant McDonough CCR Ash Pond AP-1 between March 2, 2020 and March 9, 2020 in accordance with the analytical methods, the laboratory specific QC criteria, and the guidelines. As described above, 100% of the results were acceptable for project use.

REFERENCE

Paar, J.G. & Porterfield, D.R. *Evaluation of Radiochemical Data Usability*. United States Department of Energy, Office of Environmental Restoration and Waste Management, Oak Ridge National Laboratory, April 1997.

USEPA, January 2017, National, Office of Superfund Remediation and Technology Innovation, *National Functional Guidelines for Inorganic Superfund Methods Data Review*, Revision 0.0.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data By Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy*, Revision 2.0.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Mercury Data By Cold Vapor Atomic Absorption*, Revision 2.0.

TABLE 1
Sample Summary Table
SCS Plant McDonough AP-1

SDGs	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Analyses						
						Field pH	Total Metals (EPA 6020B)	Calcium (EPA 6010D)	Mercury (EPA 7470A)	Anions (EPA 300.0)	TDS (SM 2540C)	Radium 226, Radium 228 (9315, 9320)
2629679	DGWA-70A	3/2/2020	2629679001	GW	-	X	X	X	X	X	X	-
2629679	DGWA-71	3/2/2020	2629679002	GW	-	X	X	X	X	X	X	-
2629901/2629903	DGWA-53	3/9/2020	2629901001/2629901003	GW	-	X	X	X	X	X	X	-
30353293	DGWA-70A	3/2/2020	2629679001	GW	-	-	-	-	-	-	-	X
30353293	DGWA-71	3/2/2020	2629679002	GW	-	-	-	-	-	-	-	X
30354096	DGWA-53	3/9/2020	2629901001	GW	-	-	-	-	-	-	-	X
2629779	DGWC-40	3/9/2020	2629779001	GW	-	X	X	X	X	X	X	-
2629779	DGWC-37	3/9/2020	2629779002	GW	-	X	X	X	X	X	X	-
2629779	DGWC-38	3/9/2020	2629779003	GW	-	X	X	X	X	X	X	-
2629779	DGWC-39	3/9/2020	2629779004	GW	-	X	X	X	X	X	X	-
2629779	DGWC-67	3/9/2020	2629779005	GW	-	X	X	X	X	X	X	-
2629779	DGWC-68A	3/9/2020	2629779006	GW	-	X	X	X	X	X	X	-
2629779	DGWC-69	3/9/2020	2629779007	GW	-	X	X	X	X	X	X	-
2629779	EB-3	3/9/2020	2629779008	WQ	EB	X	X	X	X	X	X	-
2629779	FD-3	3/9/2020	2629779009	GW	FD (DGWC-39)	X	X	X	X	X	X	-
30354071	DGWC-40	3/4/2020	2629779001	GW	-	-	-	-	-	-	-	X
30354071	DGWC-37	3/9/2020	2629779002	GW	-	-	-	-	-	-	-	X
30354071	DGWC-38	3/9/2020	2629779003	GW	-	-	-	-	-	-	-	X
30354071	DGWC-39	3/9/2020	2629779004	GW	-	-	-	-	-	-	-	X
30354071	DGWC-67	3/9/2020	2629779005	GW	-	-	-	-	-	-	-	X
30354071	DGWC-68A	3/9/2020	2629779006	GW	-	-	-	-	-	-	-	X
30354071	DGWC-69	3/9/2020	2629779007	GW	-	-	-	-	-	-	-	X
30354071	EB-3	3/9/2020	2629779008	WQ	EB	-	-	-	-	-	-	X
30354071	FD-3	3/9/2020	2629779009	GW	FD (DGWC-39)	-	-	-	-	-	-	X

Abbreviations:

- EB - Equipment blank
- FB - Field blank
- FD - Field duplicate
- GW - Groundwater
- TDS - Total dissolved solids
- WQ - Water quality control

TABLE 2
Qualifier Summary Table
Plant McDonough

SDG	Sample Name	Constituent	New Result	New RL	Qualifier	Reason
30353293	DGWA-71	Radium-226	-	0.752	U	Blank contamination
2629779	DGWC-40	Chromium	0.01	-	U	Blank contamination
2629779	DGWC-69	TDS	-	115	U	Blank contamination
2629779	DGWC-69	Boron	0.1	-	U	Blank contamination
30354071	DGWC-37	Radium-226	-	0.499	U	Blank contamination
30354071	DGWC-38	Radium-226	-	0.673	U	Blank contamination
30354071	DGWC-39	Radium-226	-	0.694	U	Blank contamination
30354071	DGWC-40	Radium-226	-	1.07	U	Blank contamination
30354071	DGWC-67	Radium-226	-	0.617	U	Blank contamination
30354071	DGWC-68A	Radium-226	-	0.84	U	Blank contamination
30354071	DGWC-69	Radium-226	-	0.839	U	Blank contamination
30354071	FD-3	Radium-226	-	0.498	U	Blank contamination

Abbreviations:

RL : Reporting limit

SDG : Sample delivery group

TDS : Total dissolved solids

Qualifiers:

U : Non-detect result

Well-ID	POSITION	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Is the well visible and accessible? b. Is the well properly identified/Correct Well ID? c. Is the well in high traffic area require traffic Protection? d. Is the drainage around the well acceptable (No standing water)? (Y / N / NA)	a. Is protective casing free from damage/ b. Is casing free of degradation or deterioration/ c. Does casing have functioning weep hole? d. Is the annual space clear of debris and water, or filled with pea gravel? e. Is the well locked and in good condition? (Y / N / NA)	a. Pad in Good Condition b. Pad Sloped away from Well? c. In contact with Protective Casing? d. In Contact with Ground Surface and Stable? e. Free of Debris? (Y / N / NA)	a. Does the cap prevent entry of foreign material? b. Is the casing free of kinks or bends or any obstruction from foreign objects? c. Is the well properly vented for equilibrium of air pressure? d. Is the survey point clearly marked on the inner casing? e. Is the depth of the well consistent with the well log? f. Is the casing stable? (Y / N / NA)	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? (Y / N / NA)
	↑ or ↓					
DGWA-53	↑	Yes	Yes	Yes	Yes	Poor yield. Purge dry and sample within 24hr
DGWA-70A	↑	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWA-71	↑	Yes	Top lid cracked	Yes	Yes	Yes (No for C.)
DGWC-2	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-4	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-5	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-8	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-9	↓	Yes	Yes	Yes	Yes	Rapid drawdown, potential 3-volume purge
DGWC-10	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-11	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-12	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-13	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-14	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-15	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-17	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-19	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-20	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-21	↓	Yes	Yes	Yes	Yes	Stainless steel tubing weight required. Potential kink in well
DGWC-22	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-23	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-37	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-38	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-39	↓	Inaccessible via UTV, fallen trees	Yes	Yes	Yes	Yes (No for C.)
DGWC-40	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-42	↓	Yes	Yes	Yes	Yes	
DGWC-47	↓	Yes	Yes	Yes	Yes	Rapid drawdown, potential 3-volume purge
DGWC-48	↓	Yes	Wasp nest	Yes	Yes	Yes (No for C.)
DGWC-67	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-68A	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
DGWC-69	↓	Yes	Yes	Yes	Yes	Yes (No for C.)
B-3		Yes	Yes	Yes	Yes	Yes (No for C.)
B-6		Yes	Yes	Yes	Yes	Yes (No for C.)
B-7		Yes	Yes	Yes	Yes	Yes (No for C.)
B-16		Yes	Yes	Yes	Yes	Yes (No for C.)
B-18		Yes	Yes	Yes	Yes	Yes (No for C.)
B-24		Yes	Yes	Yes	Yes	Yes (No for C.)
B-25		Yes	Yes	Yes	Yes	Yes (No for C.)
B-26		Yes	Yes	Yes	Yes	Yes (No for C.)
B-28		Yes	Yes	Yes	Yes	Yes (No for C.)
B-29		Yes	Yes	Yes	Yes	Yes (No for C.)
B-31		Yes	Yes	Yes	Yes	Yes (No for C.)
B-41		Yes	Yes	Yes	Yes	Yes (No for C.)
B-50		Yes	Yes	Yes	Yes	Yes (No for C.)
B-51		Yes	Yes	Yes	Yes	Yes (No for C.)

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION	PROTECTIVE CASING	SURFACE PAD	INTERNAL CASING	SAMPLING (Groundwater Wells Only)
		a. Is the well visible and accessible? b. Is the well properly identified/Correct Well ID? c. Is the well in high traffic area require traffic Protection? d. Is the drainage around the well acceptable (No standing water)? (Y / N / NA)	a. Is protective casing free from damage/ b. Is casing free of degradation or deterioration/ c. Does casing have functioning weep hole? d. Is the annual space clear of debris and water, or filled with pea gravel? e. Is the well locked and in good condition? (Y / N / NA)	a. Pad in Good Condition b. Pad Sloped away from Well? c. In contact with Protective Casing? d. In Contact with Ground Surface and Stable? e. Free of Debris? (Y / N / NA)	a. Does the cap prevent entry of foreign material? b. Is the casing free of kinks or bends or any obstruction from foreign objects? c. Is the well properly vented for equilibrium of air pressure? d. Is the survey point clearly marked on the inner casing? e. Is the depth of the well consistent with the well log? f. Is the casing stable? (Y / N / NA)	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? (Y / N / NA)
B-52		Yes	Yes	Yes	Yes	Yes (No for C.)
B-54		Yes	Yes	Yes	Yes	Yes (No for C.)
B-55		Yes	Yes	Yes	Yes	Yes (No for C.)
B-56		Yes	Insufficient amount of pea gravel	Yes	Yes	Yes (No for C.)
B-57		Yes	Yes	Yes	Yes	Yes (No for C.)
B-58		Yes	Yes	Yes	Yes	Yes (No for C.)
B-59		Yes	Yes	Yes	Yes	Yes (No for C.)
B-60		Yes	Yes	Yes	Yes	Yes (No for C.)
B-61		Yes	Yes	Yes	Yes	Yes (No for C.)
B-62		Yes	Yes	Yes	Yes	Yes (No for C.)
B-63		Yes	Yes	Yes	Yes	Yes (No for C.)
B-64		Yes	BrYesen lock bar (1 of 2)	Yes	Yes	Yes (No for C.)
B-65		Yes	BrYesen screw catcher	Yes	Yes	Yes (No for C.)
B-66		Yes	Yes	Yes	Yes	Yes (No for C.)
B-68		Yes	Yes	Yes	Yes	Yes (No for C.)
B-76		Yes	Yes	Yes	Yes	Yes (No for C.)
B-77		Yes	Water in annulus	Yes	Yes	Yes (No for C.)
B-78		Yes	Yes	Yes	Yes	Yes (No for C.)
B-79		Yes	Yes	Yes	Missing weephole (PVC)	Yes (No for C.)
B-80		Yes	Insufficient amount of pea gravel	Yes	Missing weephole (PVC)	Yes (No for C.)
B-81		Yes	Yes	Piles of dirt on pad	Yes	Yes (No for C.)
B-82		Located downgradient from Argos Plant discharge pipe	Yes	Yes	Yes	Yes (No for C.)
B-83		Yes	Yes	Yes	Yes	Yes (No for C.)
B-84		Yes	Missing bolt. Flooded annulus	Yes	Yes	Yes (No for C.)
B-85		Yes	Yes	Pad flooded with sediment deposits	Yes	Yes (No for C.)
B-86		Yes	Yes	Yes	Yes	Yes (No for C.)
B-87		Yes	Yes	Yes	Yes	Yes (No for C.)
B-88		Yes	Yes	Yes	Yes	Yes (No for C.)
B-89		Yes	Yes	Yes	Yes	Yes (No for C.)
B-90		Yes	Yes	Yes	Yes	Yes (No for C.)
B-91		Yes	Needs washers for bolts	Yes	Yes	Yes (No for C.)
B-92		Yes	Yes	Yes	Yes	Yes (No for C.)
B-93		Yes	Yes	Yes	Yes	Yes (No for C.)
B-94		Yes	Yes	Yes	Yes	Yes (No for C.)
B-95		Yes	Yes	Yes	Yes	Yes (No for C.)
B-96		Yes	Yes	Yes	Yes	Yes (No for C.)
B-97		Yes	Yes	Yes	Yes	Yes (No for C.)
B-98		Yes	Yes	Yes	Yes	Yes (No for C.)
AP-1-B-3	IW	Yes	Yes	Yes	Yes	Yes (No for C.)
AP-1-B-7	IW	Yes	Yes	Yes	Yes	Yes (No for C.)
AP-1-B-8	IW	Yes	Yes	Yes	Yes	Yes (No for C.)

NOTES:

1. Provide pictures of any deficiencies.
2. Notify SCS /GPC of any noted deficiencies.
3. Provide additional comments as necessary to address any deficiencies.

APPENDIX B
Statistical Analyses

Federal Statistical Package

Prediction Limit

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/31/2020, 11:26 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	DGWC-37	0.13	n/a	10/18/2019	1.3	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-38	0.13	n/a	10/18/2019	3.1	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-39	0.13	n/a	10/18/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-40	0.13	n/a	10/18/2019	0.9	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-67	0.13	n/a	10/17/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-69	0.13	n/a	10/16/2019	0.38	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-68A	0.13	n/a	10/16/2019	1.5	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Calcium (mg/L)	DGWC-37	40.3	n/a	10/18/2019	52.5	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-38	40.3	n/a	10/18/2019	97.8	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-39	40.3	n/a	10/18/2019	108	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-40	40.3	n/a	10/18/2019	44.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-67	40.3	n/a	10/17/2019	46.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-68A	40.3	n/a	10/16/2019	49.7	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Chloride (mg/L)	DGWC-37	4.061	n/a	10/18/2019	5.8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.061	n/a	10/18/2019	8.6	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.061	n/a	10/18/2019	8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.061	n/a	10/18/2019	19.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.061	n/a	10/17/2019	6.9	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.061	n/a	10/16/2019	4.7	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	4.061	n/a	10/16/2019	4.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-40	6.573	5.23	10/18/2019	4.71	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-68A	6.573	5.23	10/16/2019	6.6	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	33.07	n/a	10/18/2019	76.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	33.07	n/a	10/18/2019	239	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	33.07	n/a	10/18/2019	182	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	33.07	n/a	10/18/2019	205	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	33.07	n/a	10/17/2019	99.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	298.1	n/a	10/18/2019	494	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	298.1	n/a	10/18/2019	489	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	298.1	n/a	10/18/2019	360	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2

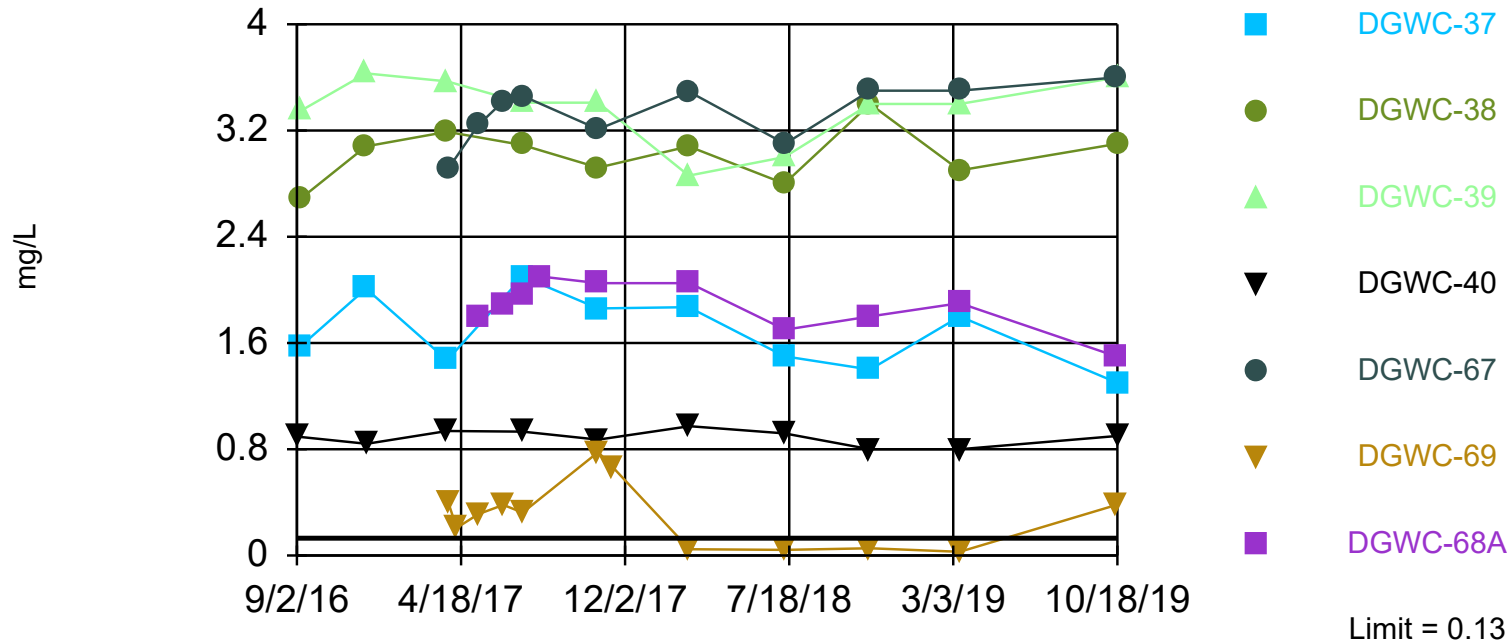
Prediction Limit

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/31/2020, 11:26 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	10/18/2019	1.3	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-38	0.13	n/a	10/18/2019	3.1	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-39	0.13	n/a	10/18/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-40	0.13	n/a	10/18/2019	0.9	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-67	0.13	n/a	10/17/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-69	0.13	n/a	10/16/2019	0.38	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-68A	0.13	n/a	10/16/2019	1.5	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Calcium (mg/L)	DGWC-37	40.3	n/a	10/18/2019	52.5	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-38	40.3	n/a	10/18/2019	97.8	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-39	40.3	n/a	10/18/2019	108	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-40	40.3	n/a	10/18/2019	44.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-67	40.3	n/a	10/17/2019	46.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-69	40.3	n/a	10/16/2019	16.2	No	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-68A	40.3	n/a	10/16/2019	49.7	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Chloride (mg/L)	DGWC-37	4.061	n/a	10/18/2019	5.8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.061	n/a	10/18/2019	8.6	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.061	n/a	10/18/2019	8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.061	n/a	10/18/2019	19.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.061	n/a	10/17/2019	6.9	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.061	n/a	10/16/2019	4.7	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	4.061	n/a	10/16/2019	4.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	DGWC-37	0.42	n/a	10/18/2019	0.075	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-38	0.42	n/a	10/18/2019	0.073	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-39	0.42	n/a	10/18/2019	0.14	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-40	0.42	n/a	10/18/2019	0.13	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-67	0.42	n/a	10/17/2019	0.038	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-69	0.42	n/a	10/16/2019	0.13	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-68A	0.42	n/a	10/16/2019	0.093	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
pH [field] (S.U.)	DGWC-37	6.573	5.23	10/18/2019	6.26	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-38	6.573	5.23	10/18/2019	6	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-39	6.573	5.23	10/18/2019	6.35	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-40	6.573	5.23	10/18/2019	4.71	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-67	6.573	5.23	10/17/2019	6.14	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-69	6.573	5.23	10/16/2019	6.19	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-68A	6.573	5.23	10/16/2019	6.6	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	33.07	n/a	10/18/2019	76.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	33.07	n/a	10/18/2019	239	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	33.07	n/a	10/18/2019	182	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	33.07	n/a	10/18/2019	205	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	33.07	n/a	10/17/2019	99.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-69	33.07	n/a	10/16/2019	13.3	No	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	33.07	n/a	10/16/2019	32.1	No	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-37	298.1	n/a	10/18/2019	269	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	298.1	n/a	10/18/2019	494	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	298.1	n/a	10/18/2019	489	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	298.1	n/a	10/18/2019	360	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	298.1	n/a	10/17/2019	281	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-69	298.1	n/a	10/16/2019	108	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-68A	298.1	n/a	10/16/2019	218	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2

Exceeds Limit: DGWC-37, DGWC-38,
 DGWC-39, DGWC-40, DGWC-67,
 DGWC 69 DGWC 68A

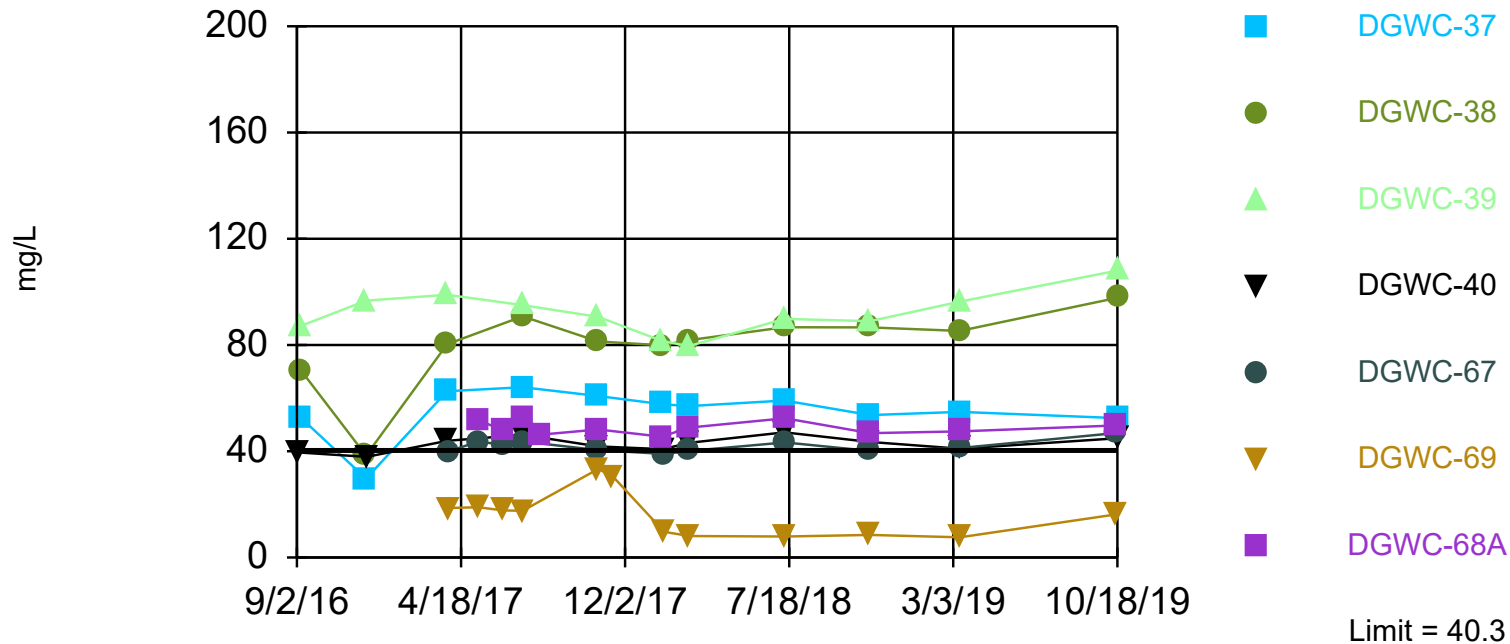
Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 31 background values. 12.9% NDs. Annual per-constituent alpha = 0.02845. Individual comparison alpha = 0.001802 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Exceeds Limit: DGWC-37, DGWC-38,
DGWC-39, DGWC-40, DGWC-67,
DGWC 68A

Prediction Limit Interwell Non-parametric

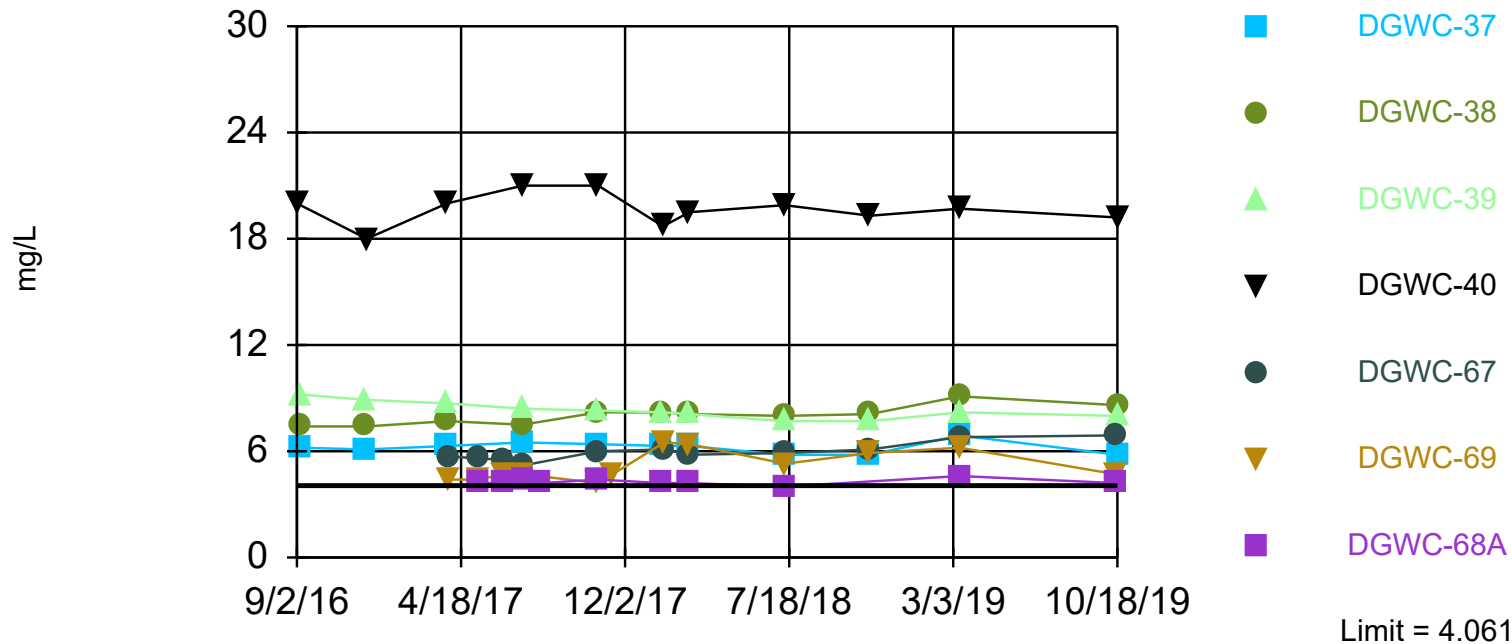


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. Annual per-constituent alpha = 0.027. Individual comparison alpha = 0.001709 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Constituent: Calcium Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limit: DGWC-37, DGWC-38,
DGWC-39, DGWC-40, DGWC-67,
DGWC 69 DGWC 68A

Prediction Limit Interwell Parametric

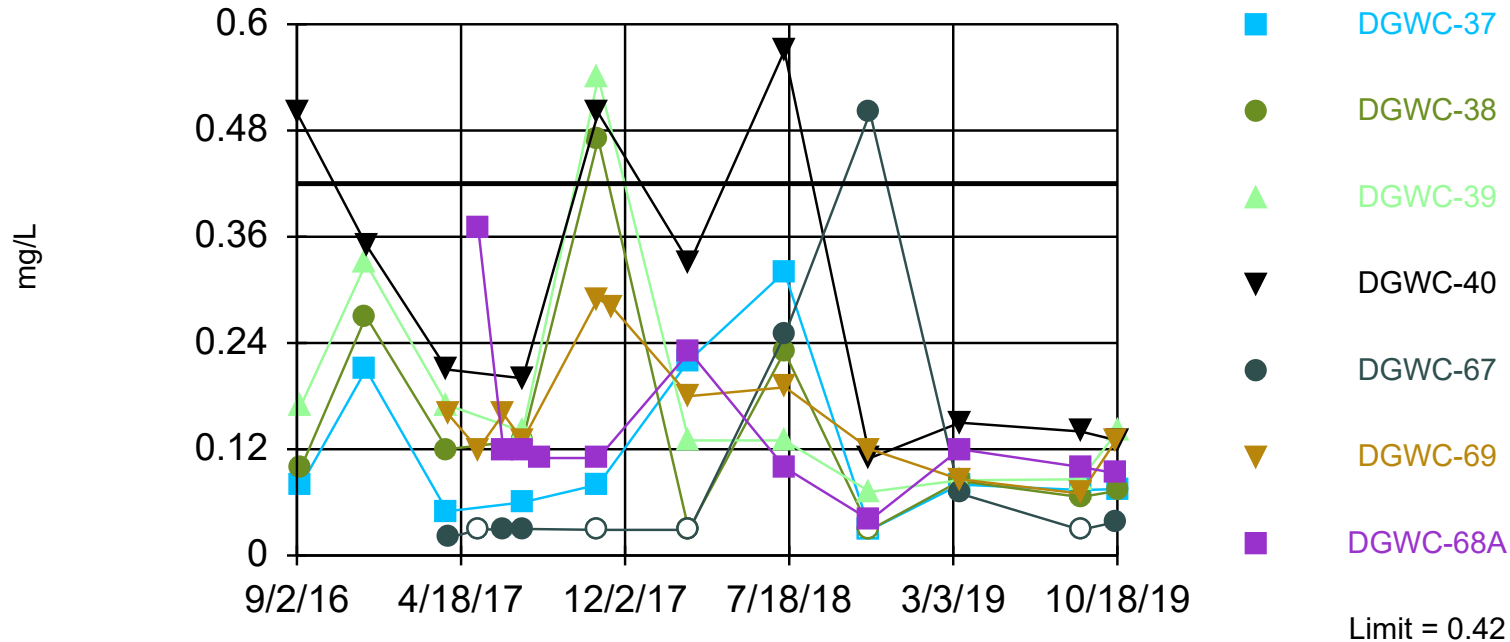


Background Data Summary (based on natural log transformation): Mean=0.9725, Std. Dev.=0.21, n=34.
Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9084, critical = 0.908. Kappa = 2.043 (c=7,
w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403.
Comparing 7 points to limit. Assumes 1 future value.

Constituent: Chloride Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Within Limit

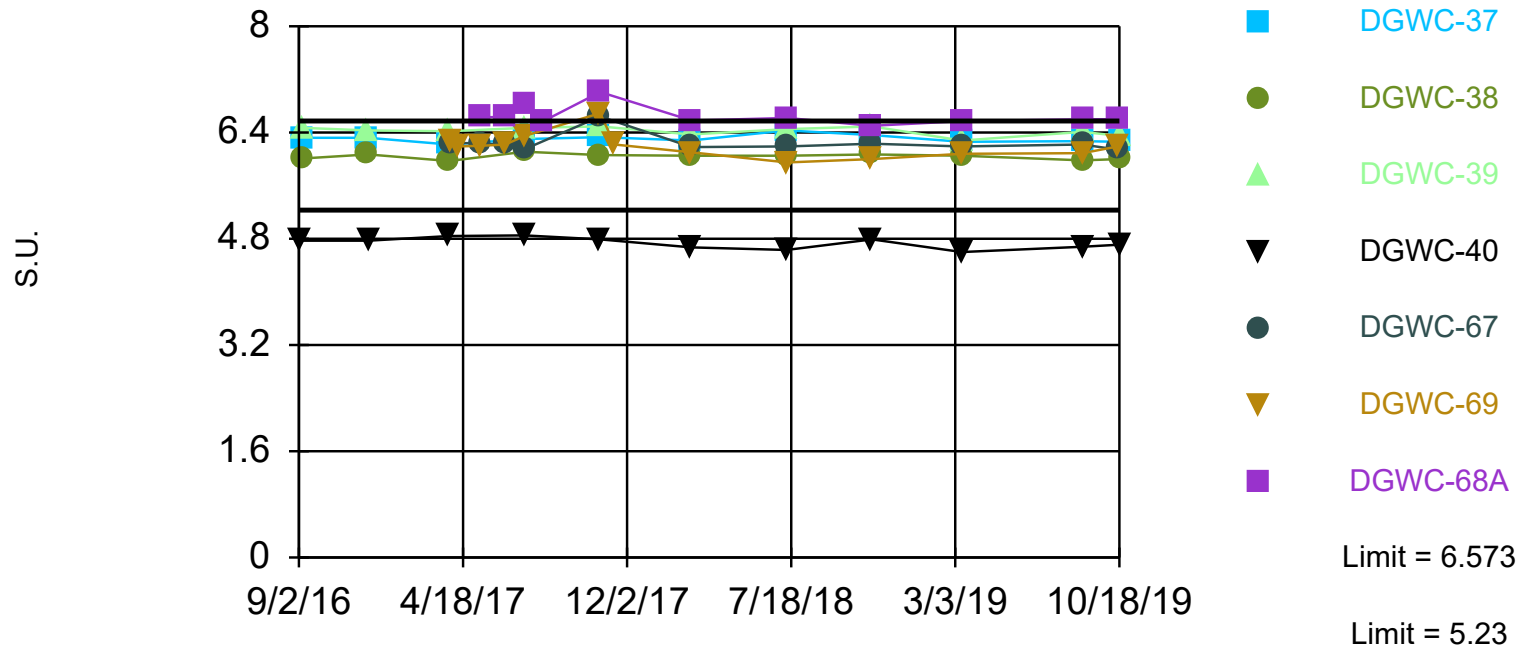
Prediction Limit Interwell Non-parametric



Non-parametric test used after natural log transformation resulted in a parametric limit of 5.927, which exceeds 10 times the highest background value (user-adjustable cutoff). Limit is highest of 35 background values. 42.86% NDs. Annual per-constituent alpha = 0.02266. Individual comparison alpha = 0.001432 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Exceeds Limits: DGWC-40, DGWC-68A

Prediction Limit Interwell Parametric

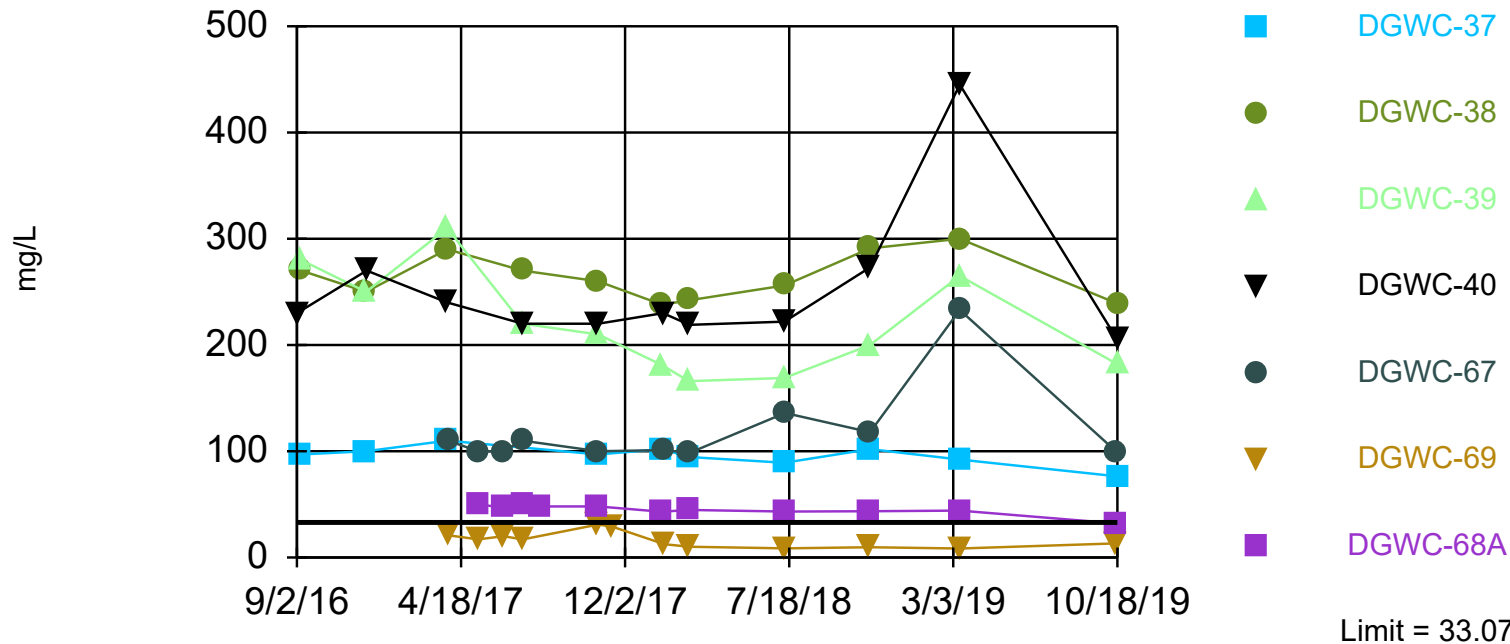


Background Data Summary (based on natural log transformation): Mean=1.769, Std. Dev.=0.05611, n=35. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9131, critical = 0.91. Kappa = 2.036 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004701. Comparing 7 points to limit. Assumes 1 future value.

Constituent: pH [field] Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limit: DGWC-37, DGWC-38,
DGWC-39, DGWC-40, DGWC-67

Prediction Limit Interwell Parametric

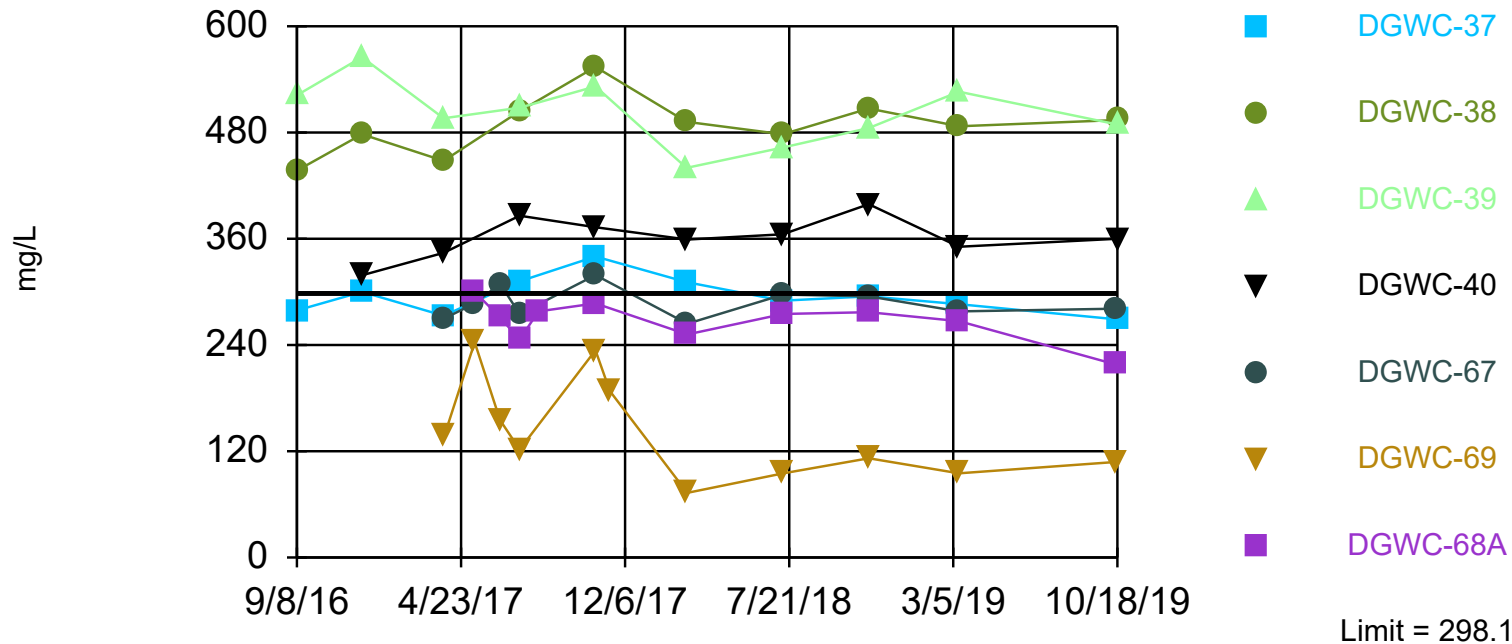


Background Data Summary (based on square root transformation): Mean=2.61, Std. Dev.=1.537, n=34.
Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9363, critical = 0.908. Kappa = 2.043 (c=7,
w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403.
Comparing 7 points to limit. Assumes 1 future value.

Constituent: Sulfate Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limit: DGWC-38, DGWC-39,
DGWC-40

Prediction Limit Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=4.718, Std. Dev.=0.9514, n=31.
Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9111, critical = 0.902. Kappa = 2.063 (c=7,
w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403.
Comparing 7 points to limit. Assumes 1 future value.

Constituent: TDS Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Tolerance Limit

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.0007	n/a	n/a	n/a	30	90	n/a	0.2146	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.0018	n/a	n/a	n/a	32	78.13	n/a	0.1937	NP Inter(NDs)
Barium (mg/L)	n/a	0.19	n/a	n/a	n/a	30	0	n/a	0.2146	NP Inter(normal...
Beryllium (mg/L)	n/a	0.0015	n/a	n/a	n/a	31	67.74	n/a	0.2039	NP Inter(normal...
Cadmium (mg/L)	n/a	0.0005	n/a	n/a	n/a	31	93.55	n/a	0.2039	NP Inter(NDs)
Chromium (mg/L)	n/a	0.0025	n/a	n/a	n/a	29	62.07	n/a	0.2259	NP Inter(Cohens...
Cobalt (mg/L)	n/a	0.0322	n/a	n/a	n/a	30	33.33	n/a	0.2146	NP Inter(normal...
Combined Radium 226 + 228 (pCi/L)	n/a	6.316	n/a	n/a	n/a	30	10	sqrt(x)	0.05	Inter
Fluoride (mg/L)	n/a	0.42	n/a	n/a	n/a	35	42.86	n/a	0.1661	NP Inter(Cohens...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	30	83.33	n/a	0.2146	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	30	36.67	n/a	0.2146	NP Inter(normal...
Mercury (mg/L)	n/a	0.0001	n/a	n/a	n/a	30	76.67	n/a	0.2146	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.0409	n/a	n/a	n/a	30	63.33	n/a	0.2146	NP Inter(normal...
Selenium (mg/L)	n/a	0.00065	n/a	n/a	n/a	30	100	n/a	0.2146	NP Inter(NDs)
Thallium (mg/L)	n/a	0.00007	n/a	n/a	n/a	30	96.67	n/a	0.2146	NP Inter(NDs)

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:55 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	DGWC-40	0.04288	0.0356	0.0322	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.2362	0.1983	0.1	Yes	10	0	ln(x)	0.01	Param.

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:55 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	DGWC-37	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWC-38	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWC-39	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWC-40	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWA-53 (bg)	0.00039	0.000135	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	DGWA-71 (bg)	0.0007	0.000135	0.006	No	10	80	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-67	0.0023	0.000135	0.006	No	9	66.67	No	0.002	NP (Cohens/xfrm)
Antimony (mg/L)	DGWC-69	0.00039	0.000135	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	DGWA-70A ...	0.00039	0.000135	0.006	No	10	100	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-68A	0.0008	0.000135	0.006	No	9	88.89	No	0.002	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.0008	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.0008	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.0008588	0.0003394	0.01	No	11	54.55	No	0.01	Param.
Arsenic (mg/L)	DGWC-40	0.0008	0.000175	0.01	No	11	81.82	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWA-53 (bg)	0.0009	0.000175	0.01	No	10	60	No	0.011	NP (Cohens/xfrm)
Arsenic (mg/L)	DGWA-71 (bg)	0.0004	0.000175	0.01	No	11	81.82	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.000285	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.05326	0.008963	0.01	No	13	0	x^(1/3)	0.01	Param.
Arsenic (mg/L)	DGWA-70A ...	0.000285	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-68A	0.000285	0.000175	0.01	No	12	91.67	No	0.01	NP (NDs)
Barium (mg/L)	DGWC-37	0.1196	0.09377	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03404	0.0326	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09917	0.08423	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01796	0.0166	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWA-53 (bg)	0.1707	0.1025	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWA-71 (bg)	0.03664	0.0264	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.1153	0.1025	2	No	10	0	ln(x)	0.01	Param.
Barium (mg/L)	DGWC-69	0.1085	0.07258	2	No	11	0	No	0.01	Param.
Barium (mg/L)	DGWA-70A ...	0.03692	0.02636	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-68A	0.09024	0.0862	2	No	10	0	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.00006594	0.00003206	0.004	No	10	70	No	0.01	Param.
Beryllium (mg/L)	DGWC-38	0.000045	0.000025	0.004	No	10	90	No	0.011	NP (NDs)
Beryllium (mg/L)	DGWC-39	0.000045	0.000025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003217	0.002743	0.004	No	10	0	No	0.01	Param.
Beryllium (mg/L)	DGWA-53 (bg)	0.000125	0.000025	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWA-71 (bg)	0.0001055	0.00007281	0.004	No	10	40	No	0.01	Param.
Beryllium (mg/L)	DGWC-67	0.000045	0.000025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.00005632	0.00003496	0.004	No	11	72.73	No	0.01	Param.
Beryllium (mg/L)	DGWA-70A ...	0.000095	0.000035	0.004	No	10	60	No	0.011	NP (Cohens/xfrm)
Beryllium (mg/L)	DGWC-68A	0.000045	0.000025	0.004	No	10	90	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-37	0.0001	0.0000465	0.005	No	10	70	No	0.011	NP (normality)
Cadmium (mg/L)	DGWC-38	0.0002469	0.0001771	0.005	No	10	0	No	0.01	Param.
Cadmium (mg/L)	DGWC-39	0.000055	0.00003	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-40	0.0008626	0.0007434	0.005	No	10	0	No	0.01	Param.
Cadmium (mg/L)	DGWA-53 (bg)	0.00013	0.00003	0.005	No	11	81.82	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWA-71 (bg)	0.000055	0.00003	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-67	0.000055	0.00003	0.005	No	10	90	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-69	0.0002	0.0000465	0.005	No	11	54.55	No	0.006	NP (normality)
Cadmium (mg/L)	DGWA-70A ...	0.000055	0.00003	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-68A	0.00019	0.00005	0.005	No	10	40	No	0.011	NP (normality)

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:55 PM

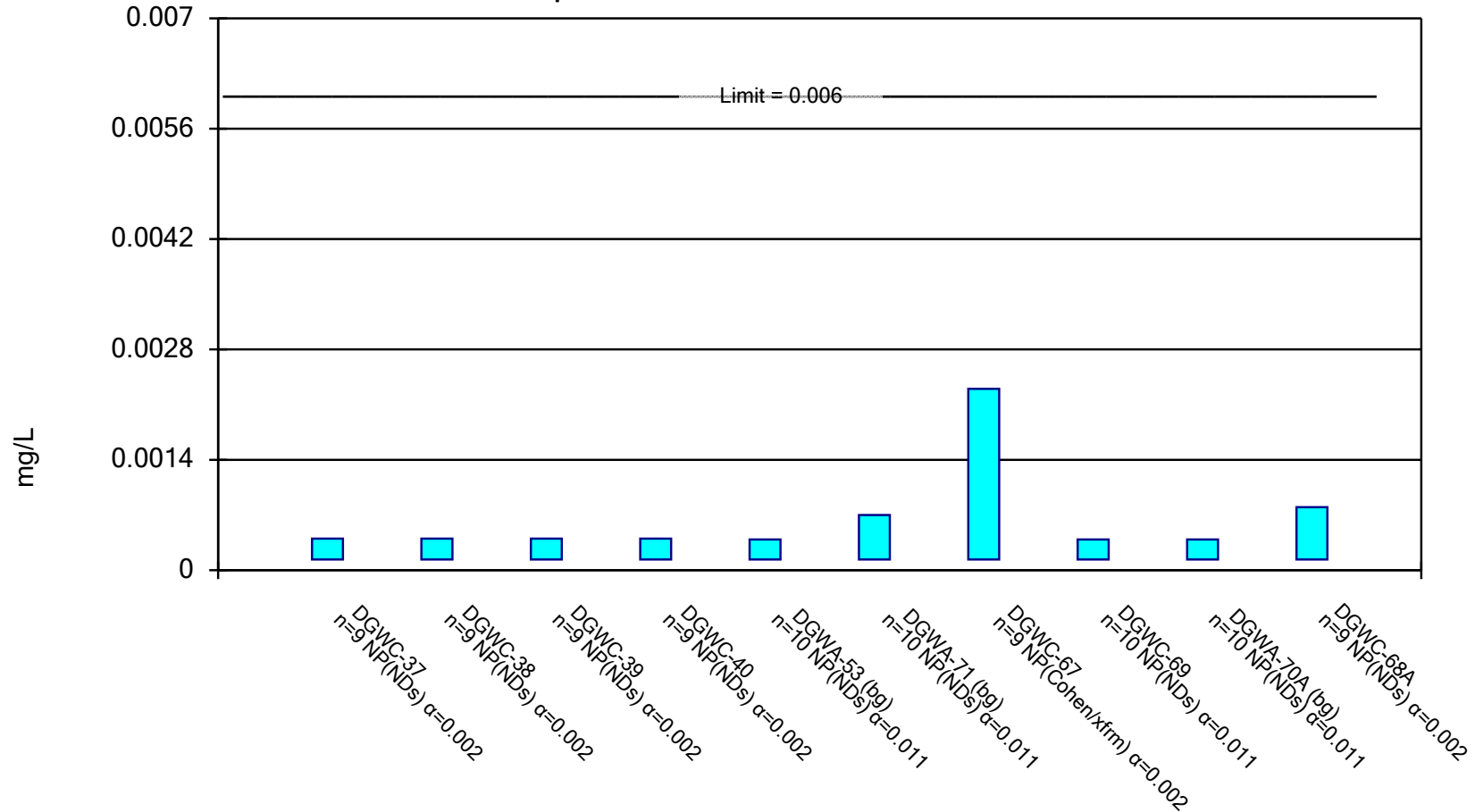
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Chromium (mg/L)	DGWC-37	0.0008	0.00015	0.1	No	10	90	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-38	0.0008	0.00015	0.1	No	10	80	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-39	0.0008	0.00015	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-40	0.002212	0.0006966	0.1	No	10	50	No	0.01	Param.
Chromium (mg/L)	DGWA-53 (bg)	0.0008	0.00015	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	DGWA-71 (bg)	0.0023	0.00025	0.1	No	10	50	No	0.011	NP (Cohens/xfrm)
Chromium (mg/L)	DGWC-67	0.0008	0.000195	0.1	No	10	80	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-69	0.0008	0.00015	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	DGWA-70A ...	0.0008	0.0005	0.1	No	9	33.33	No	0.002	NP (normality)
Chromium (mg/L)	DGWC-68A	0.0008	0.00015	0.1	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.0003	0.00015	0.0322	No	10	70	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-38	0.0017	0.0015	0.0322	No	10	0	No	0.011	NP (normality)
Cobalt (mg/L)	DGWC-39	0.006816	0.005984	0.0322	No	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04288	0.0356	0.0322	Yes	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWA-53 (bg)	0.02921	0.01633	0.0322	No	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWA-71 (bg)	0.0016	0.00015	0.0322	No	10	50	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-67	0.004273	0.001347	0.0322	No	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWC-69	0.0028	0.00015	0.0322	No	11	45.45	No	0.006	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWA-70A ...	0.0014	0.00015	0.0322	No	10	50	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-68A	0.0005	0.00015	0.0322	No	10	70	No	0.011	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.128	0.391	6.316	No	10	10	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.49	0.5381	6.316	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.547	0.5685	6.316	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.596	0.2546	6.316	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWA-53 (bg)	4.988	2.538	6.316	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWA-71 (bg)	1.74	0.1188	6.316	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	1.318	0.42	6.316	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.696	0.9393	6.316	No	11	9.091	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWA-70A ...	1.421	0.4001	6.316	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.543	0.3597	6.316	No	10	0	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.179	0.0437	4	No	11	9.091	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-38	0.27	0.0145	4	No	11	18.18	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	DGWC-39	0.2467	0.09183	4	No	11	0	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-40	0.431	0.149	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	DGWA-53 (bg)	0.2001	0.0525	4	No	12	8.333	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWA-71 (bg)	0.015	0.007	4	No	12	75	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-67	0.25	0.002	4	No	11	36.36	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	DGWC-69	0.2132	0.1061	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	DGWA-70A ...	0.06	0.005	4	No	11	45.45	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	DGWC-68A	0.1879	0.07489	4	No	11	0	ln(x)	0.01	Param.
Lead (mg/L)	DGWC-37	0.0025	0.000061	0.015	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-38	0.0025	0.000074	0.015	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-39	0.0025	0.00008	0.015	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-40	0.0025	0.00007	0.015	No	10	60	No	0.011	NP (normality)
Lead (mg/L)	DGWA-53 (bg)	0.0025	0.0025	0.015	No	10	100	No	0.011	NP (NDs)
Lead (mg/L)	DGWA-71 (bg)	0.0025	0.00008	0.015	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-67	0.0025	0.00009	0.015	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-69	0.0025	0.00009	0.015	No	11	81.82	No	0.006	NP (NDs)
Lead (mg/L)	DGWA-70A ...	0.0025	0.00007	0.015	No	10	60	No	0.011	NP (normality)
Lead (mg/L)	DGWC-68A	0.0025	0.0025	0.015	No	10	100	No	0.011	NP (NDs)

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:55 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (mg/L)	DGWC-37	0.015	0.0018	0.04	No	10	30	No	0.011	NP (normality)
Lithium (mg/L)	DGWC-38	0.003452	0.003168	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	DGWC-39	0.015	0.015	0.04	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	DGWC-40	0.0024	0.002	0.04	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	DGWA-53 (bg)	0.01026	0.008098	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	DGWA-71 (bg)	0.015	0.0012	0.04	No	10	20	No	0.011	NP (normality)
Lithium (mg/L)	DGWC-67	0.005023	0.004197	0.04	No	10	0	No	0.01	Param.
Lithium (mg/L)	DGWC-69	0.00323	0.002661	0.04	No	11	0	No	0.01	Param.
Lithium (mg/L)	DGWA-70A ...	0.015	0.002	0.04	No	10	90	No	0.011	NP (NDs)
Lithium (mg/L)	DGWC-68A	0.015	0.0016	0.04	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-37	0.00007	0.000018	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-38	0.00007	0.000018	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-39	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-40	0.00007	0.000018	0.002	No	10	70	No	0.011	NP (normality)
Mercury (mg/L)	DGWA-53 (bg)	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWA-71 (bg)	0.00007482	0.00002278	0.002	No	10	60	No	0.01	Param.
Mercury (mg/L)	DGWC-67	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-69	0.00007	0.000018	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	DGWA-70A ...	0.00007	0.000018	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-37	0.00095	0.0003	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.001109	0.0006709	0.1	No	10	70	No	0.01	Param.
Molybdenum (mg/L)	DGWC-39	0.00095	0.0003	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-40	0.00095	0.0003	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWA-53 (bg)	0.03752	0.02716	0.1	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	DGWA-71 (bg)	0.00095	0.0003	0.1	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-67	0.00095	0.0003	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-69	0.01559	0.006064	0.1	No	11	0	x^(1/3)	0.01	Param.
Molybdenum (mg/L)	DGWA-70A ...	0.00095	0.0003	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.2362	0.1983	0.1	Yes	10	0	ln(x)	0.01	Param.
Selenium (mg/L)	DGWC-37	0.0009	0.0005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-38	0.0009	0.0005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-39	0.0009	0.0005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-40	0.003323	0.001417	0.05	No	10	10	No	0.01	Param.
Selenium (mg/L)	DGWA-53 (bg)	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWA-71 (bg)	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-67	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-69	0.0009	0.00065	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	DGWA-70A ...	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-68A	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-37	0.0001	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-38	0.0001	0.00007	0.002	No	10	50	No	0.011	NP (normality)
Thallium (mg/L)	DGWC-39	0.0001	0.000026	0.002	No	10	60	No	0.011	NP (normality)
Thallium (mg/L)	DGWC-40	0.00008825	0.00005095	0.002	No	10	60	No	0.01	Param.
Thallium (mg/L)	DGWA-53 (bg)	0.00007	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWA-71 (bg)	0.00007	0.000025	0.002	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-67	0.00007	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-69	0.00007	0.000025	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	DGWA-70A ...	0.00007	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.00007	0.000025	0.002	No	10	90	No	0.011	NP (NDs)

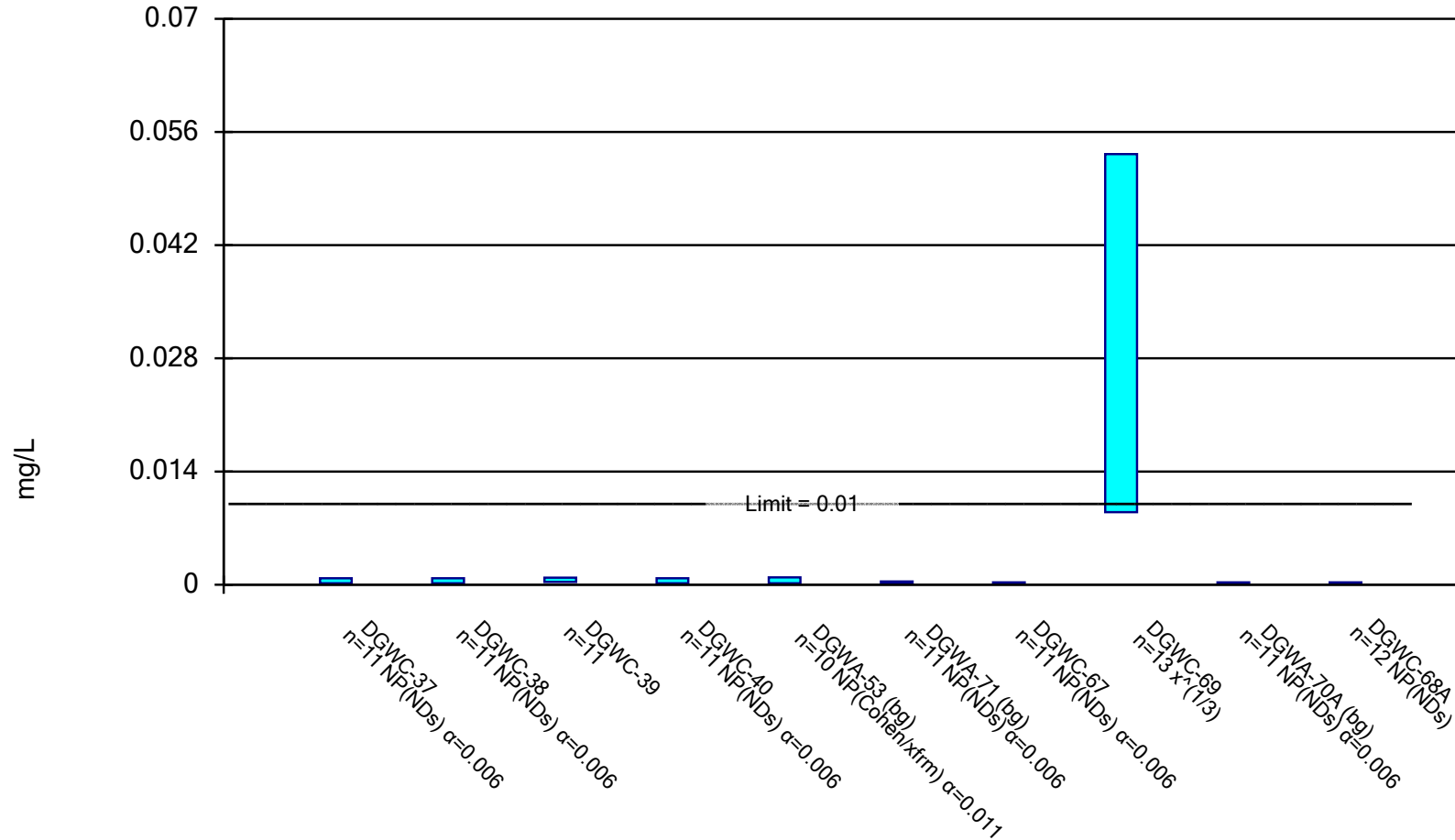
Non-Parametric Confidence Interval Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

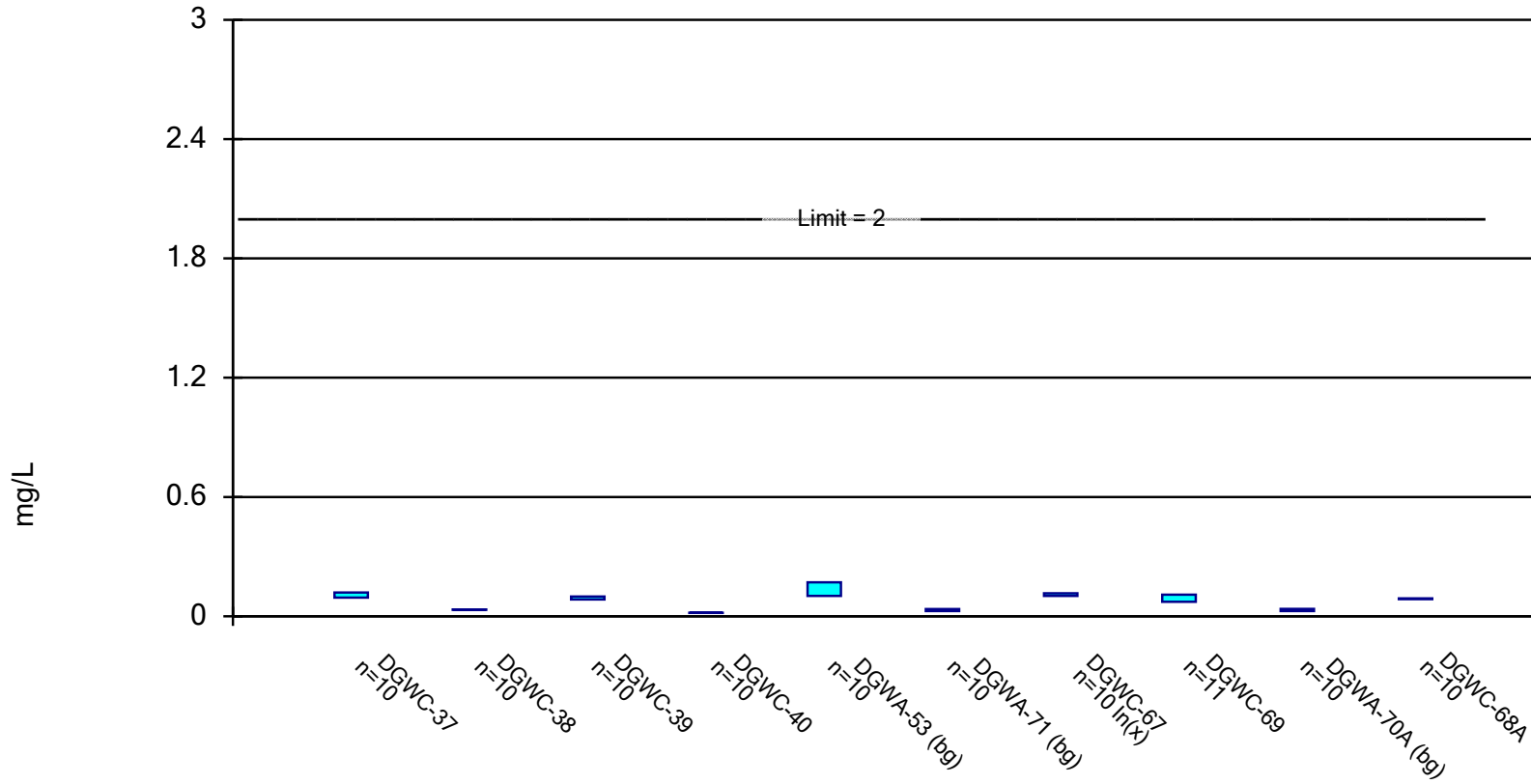
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric Confidence Interval

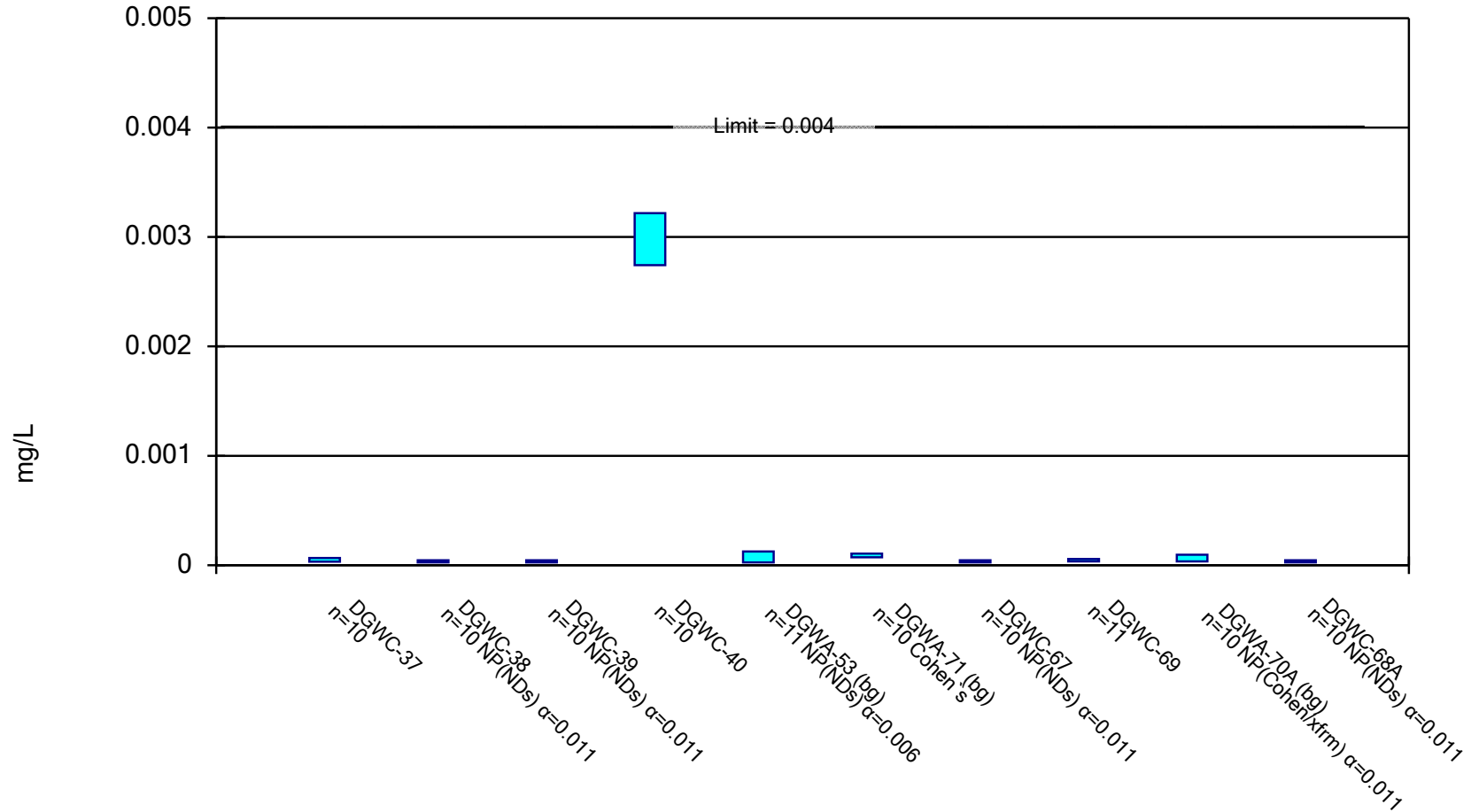
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Constituent: Barium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

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.

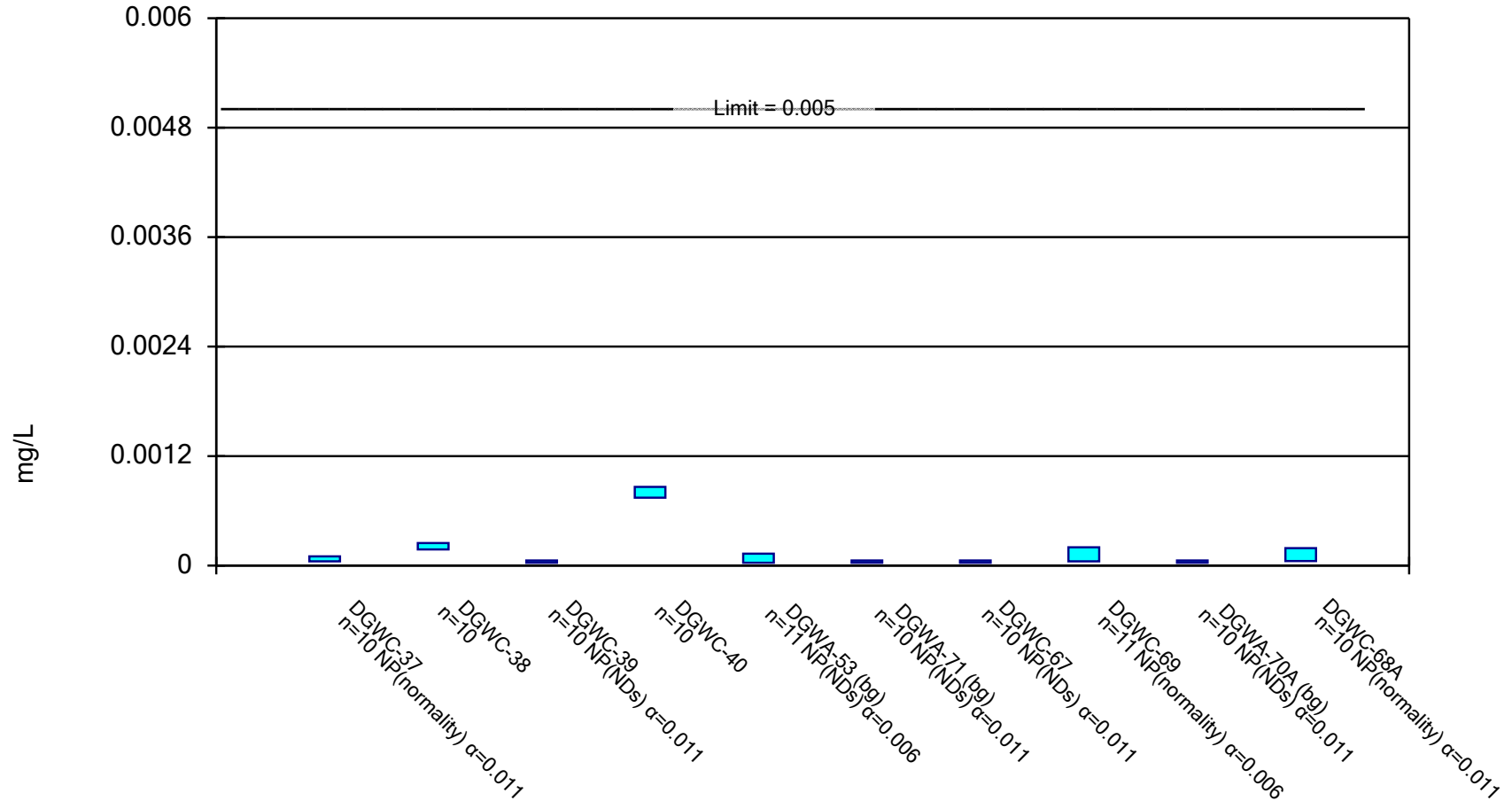


Constituent: Beryllium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

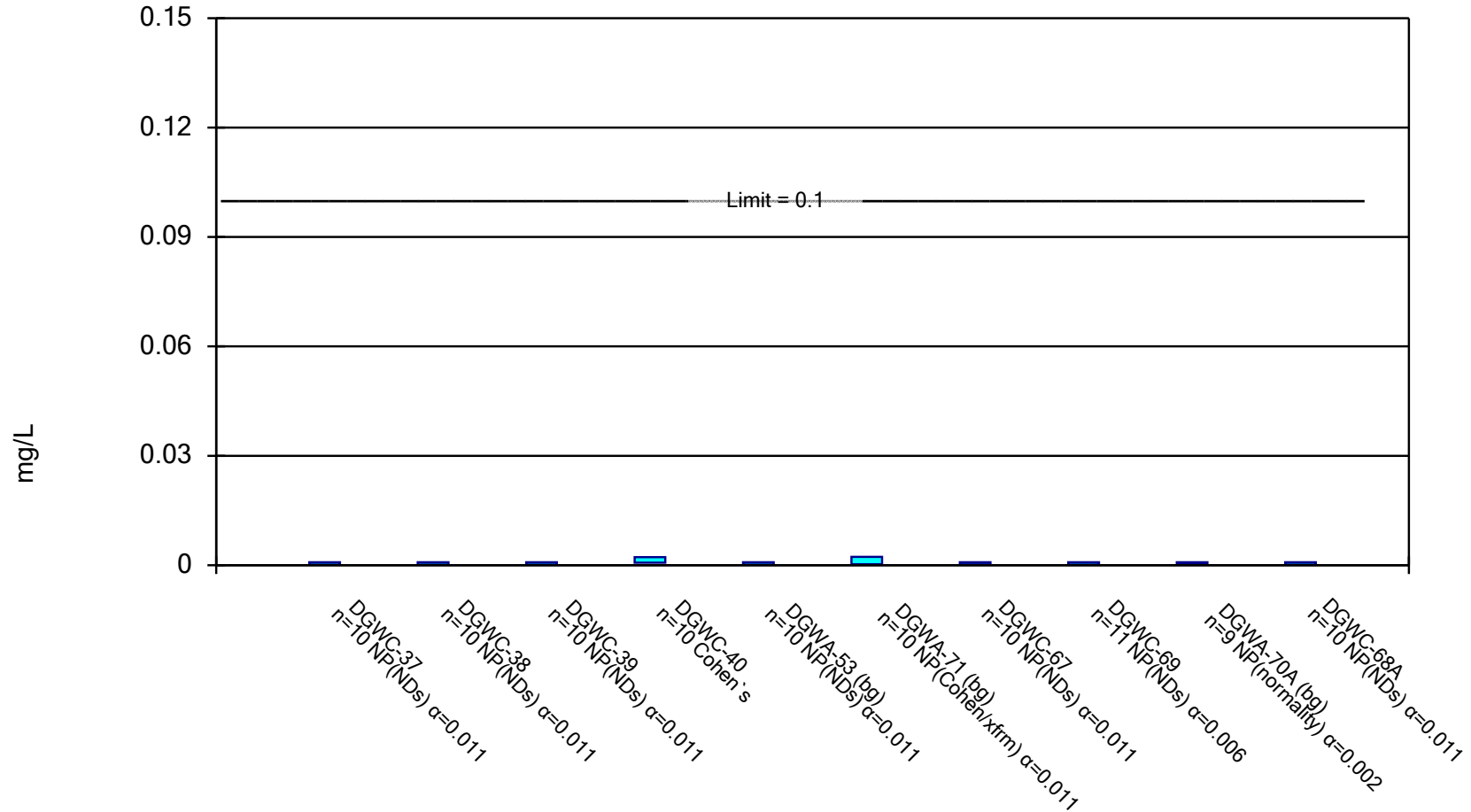
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Constituent: Cadmium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

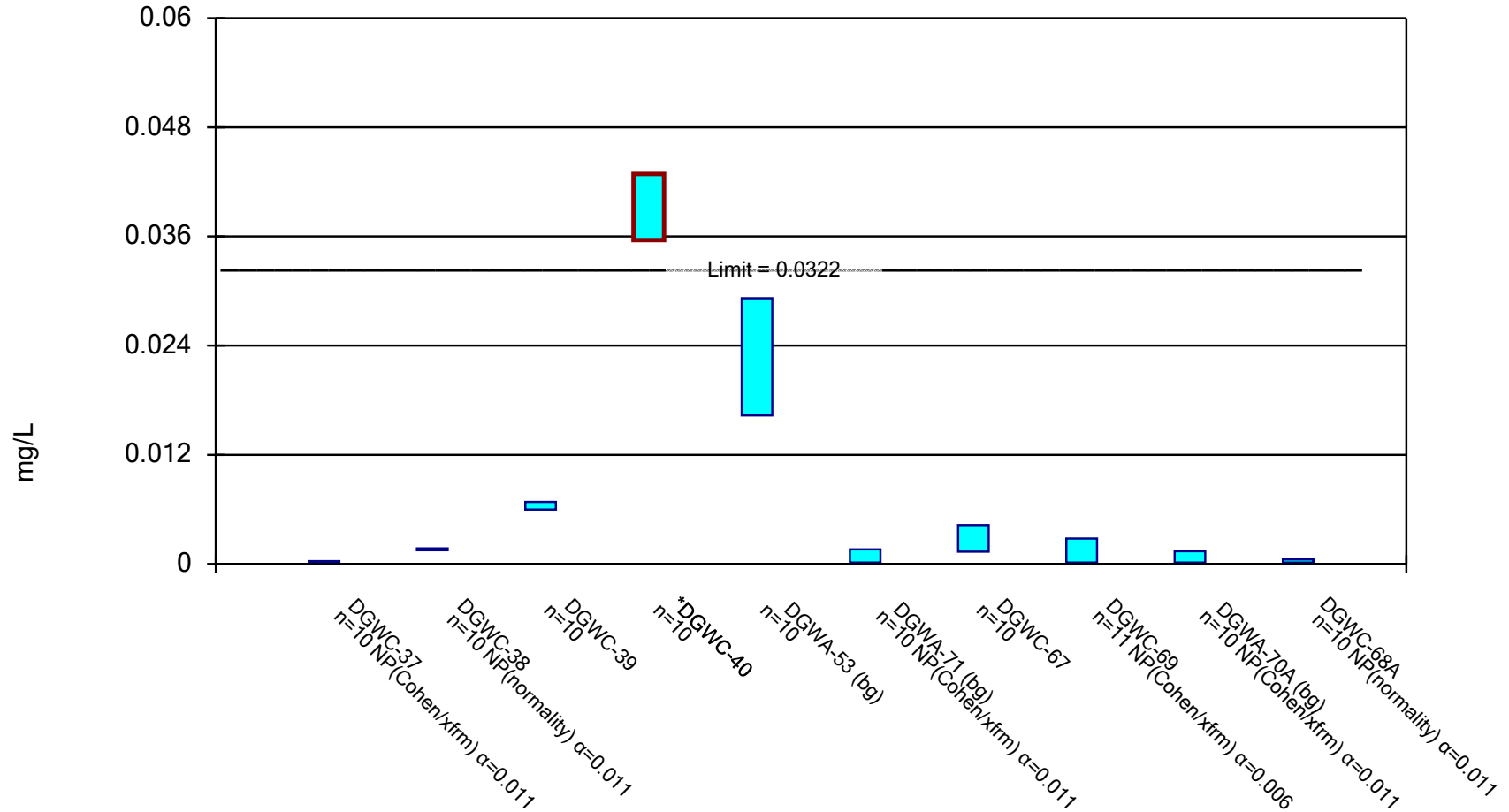
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Constituent: Chromium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

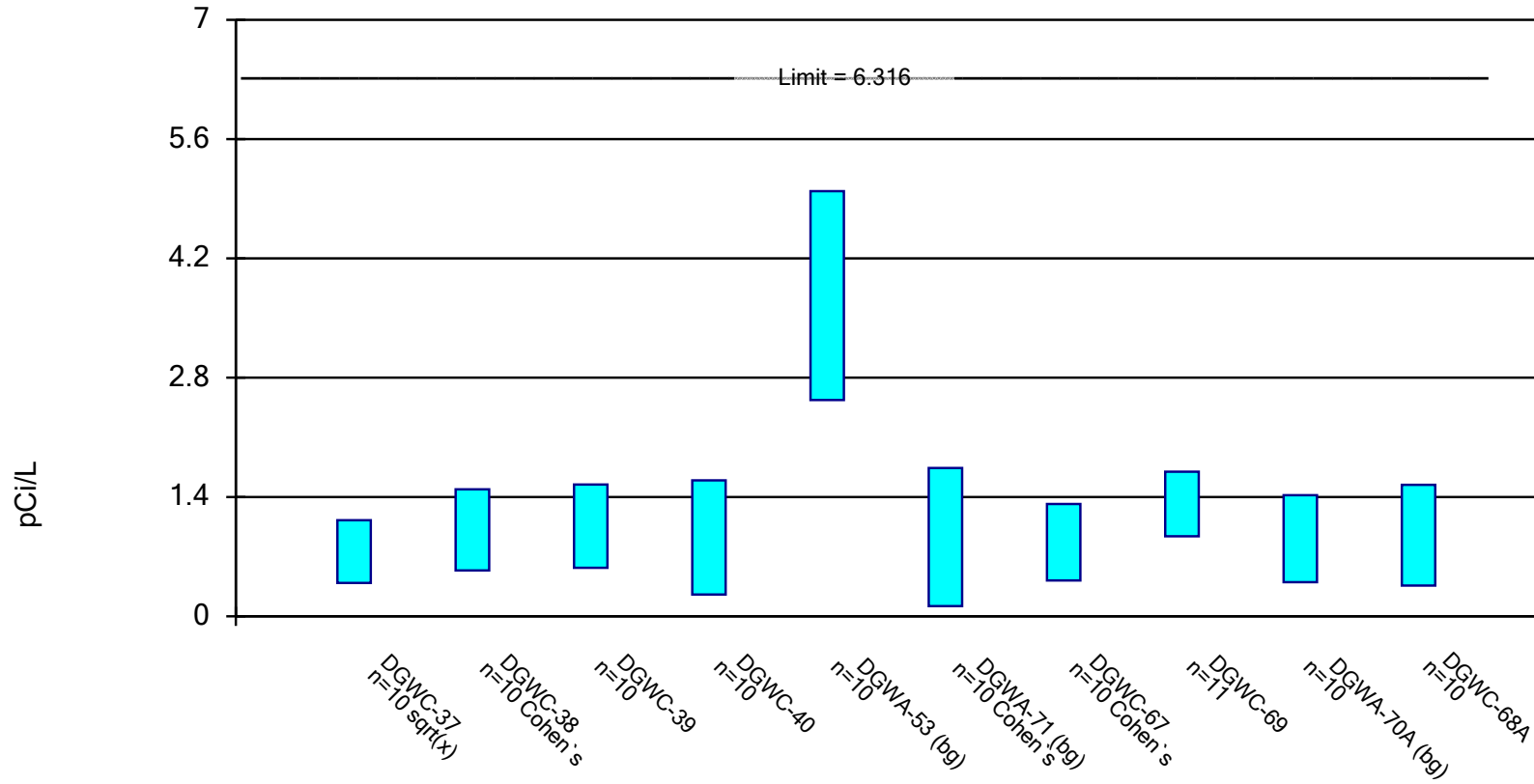
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Constituent: Cobalt Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric Confidence Interval

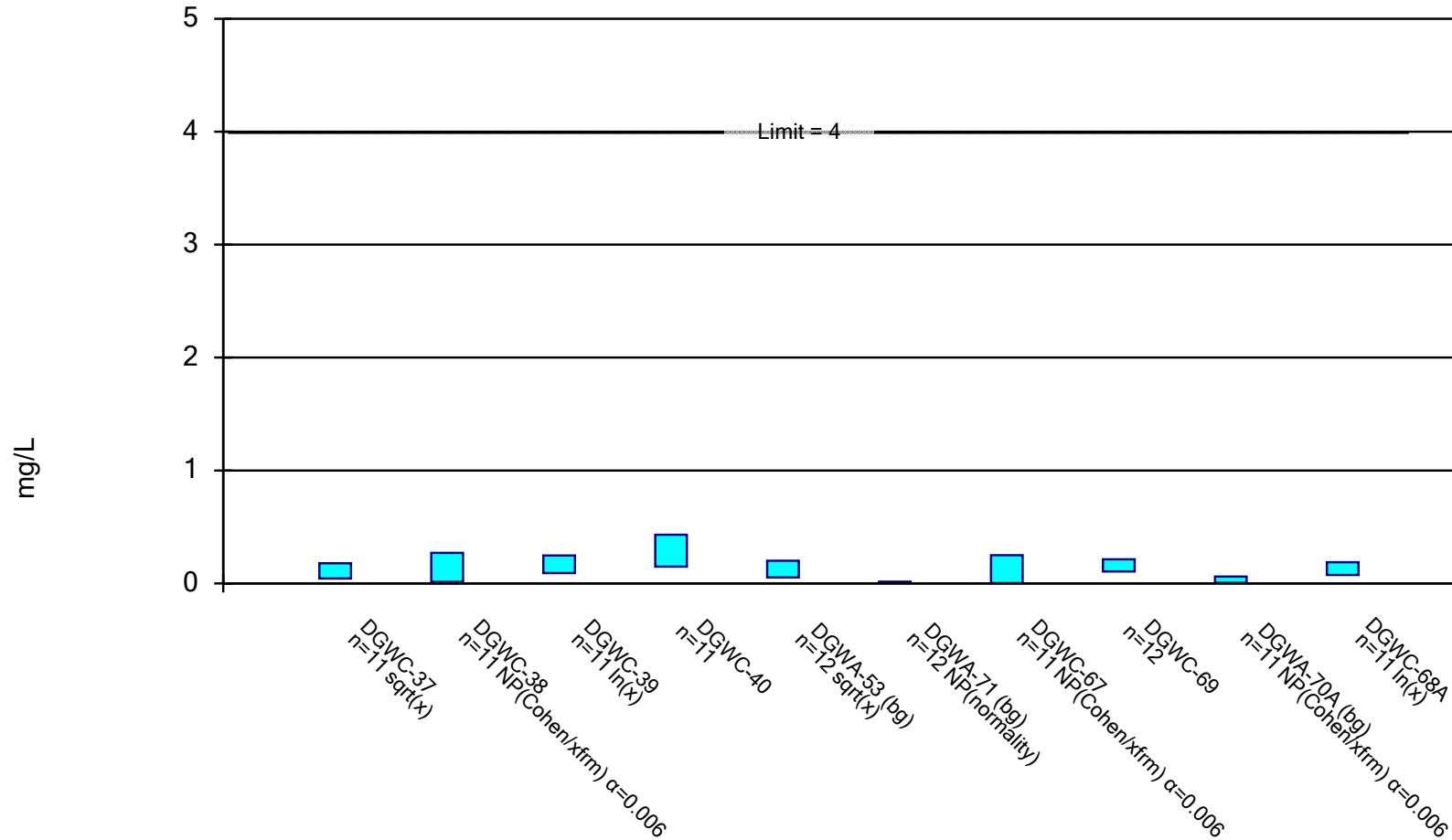
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Constituent: Combined Radium 226 + 228 Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

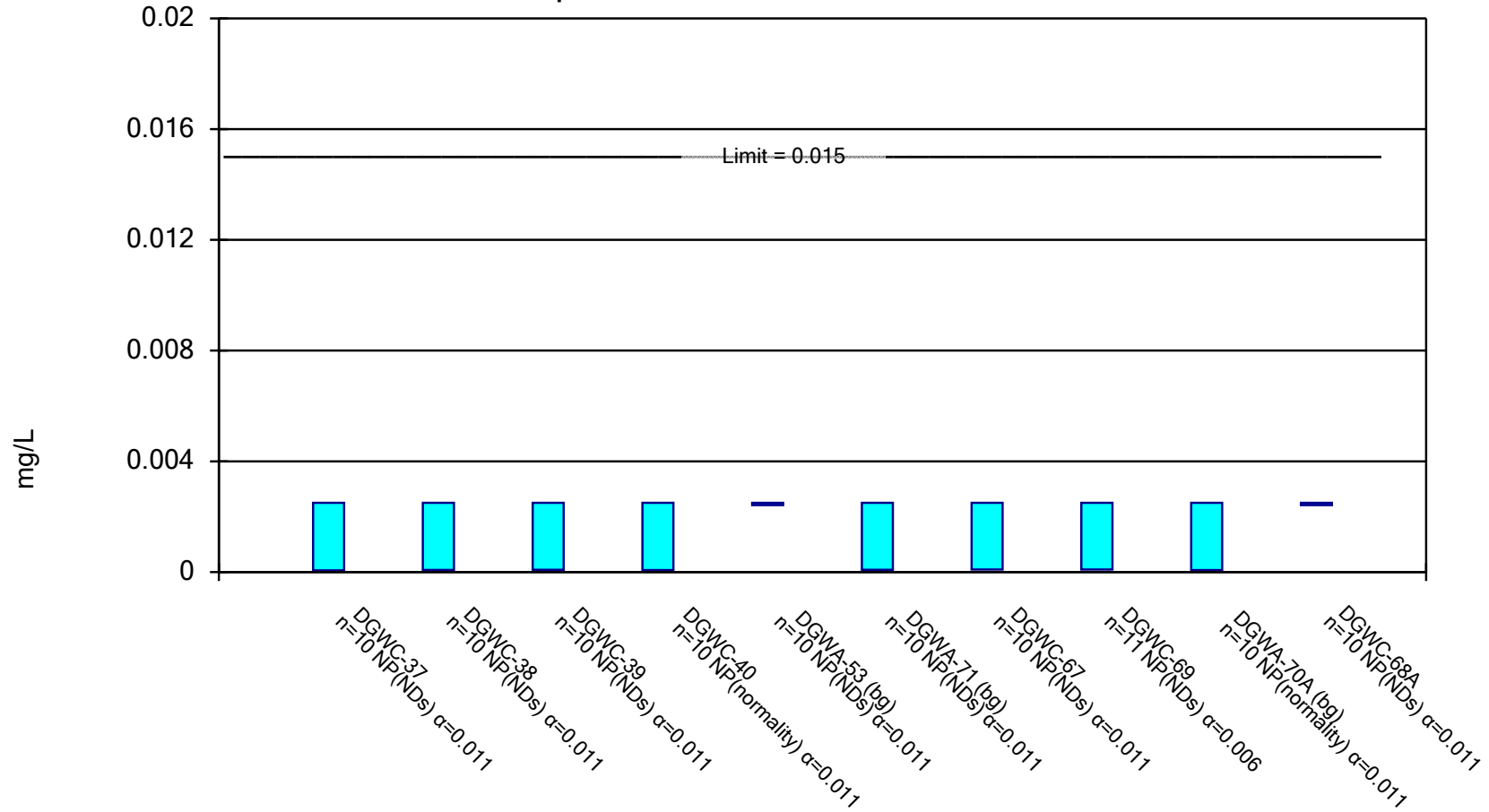
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

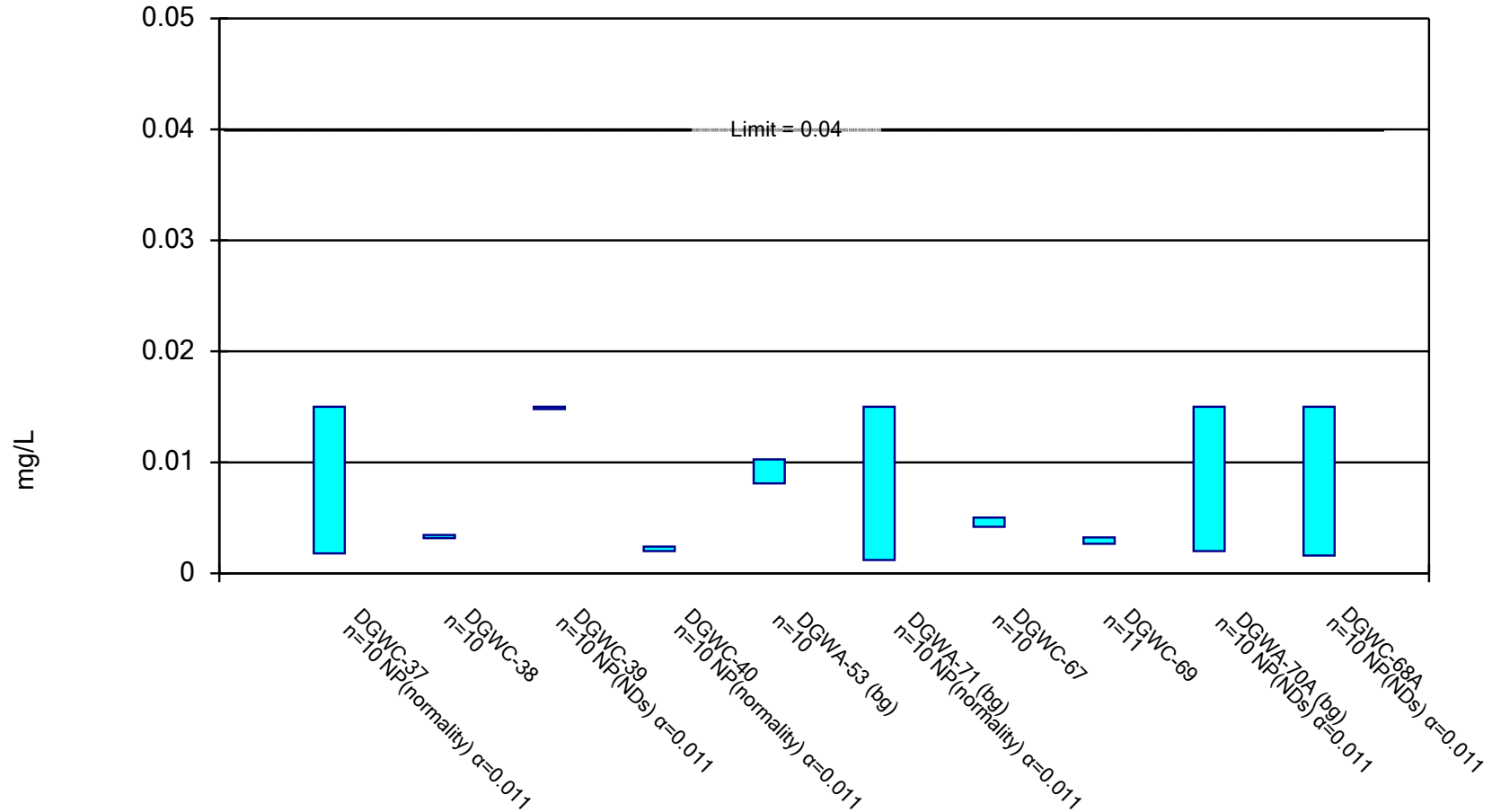
Non-Parametric Confidence Interval Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

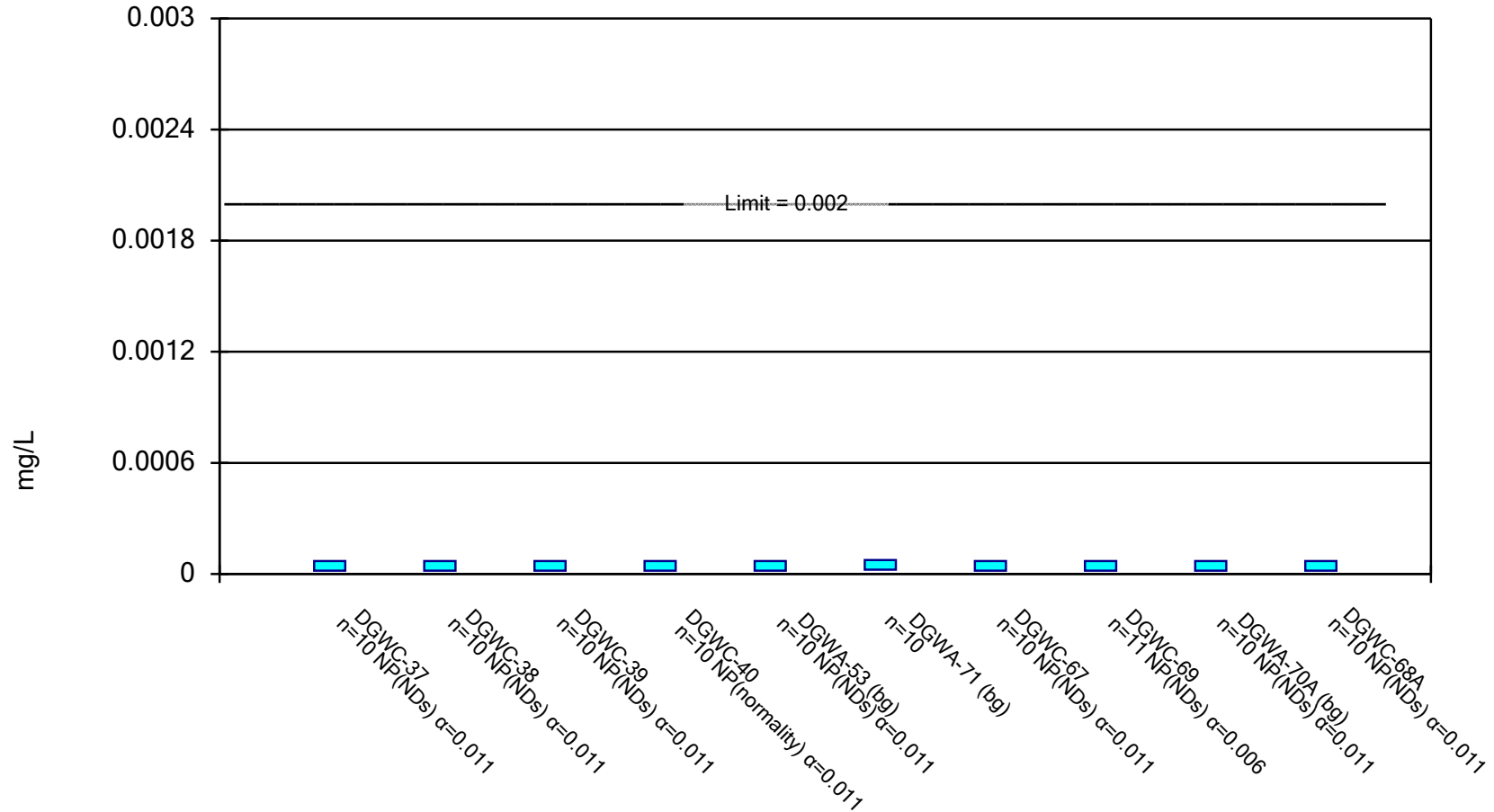
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

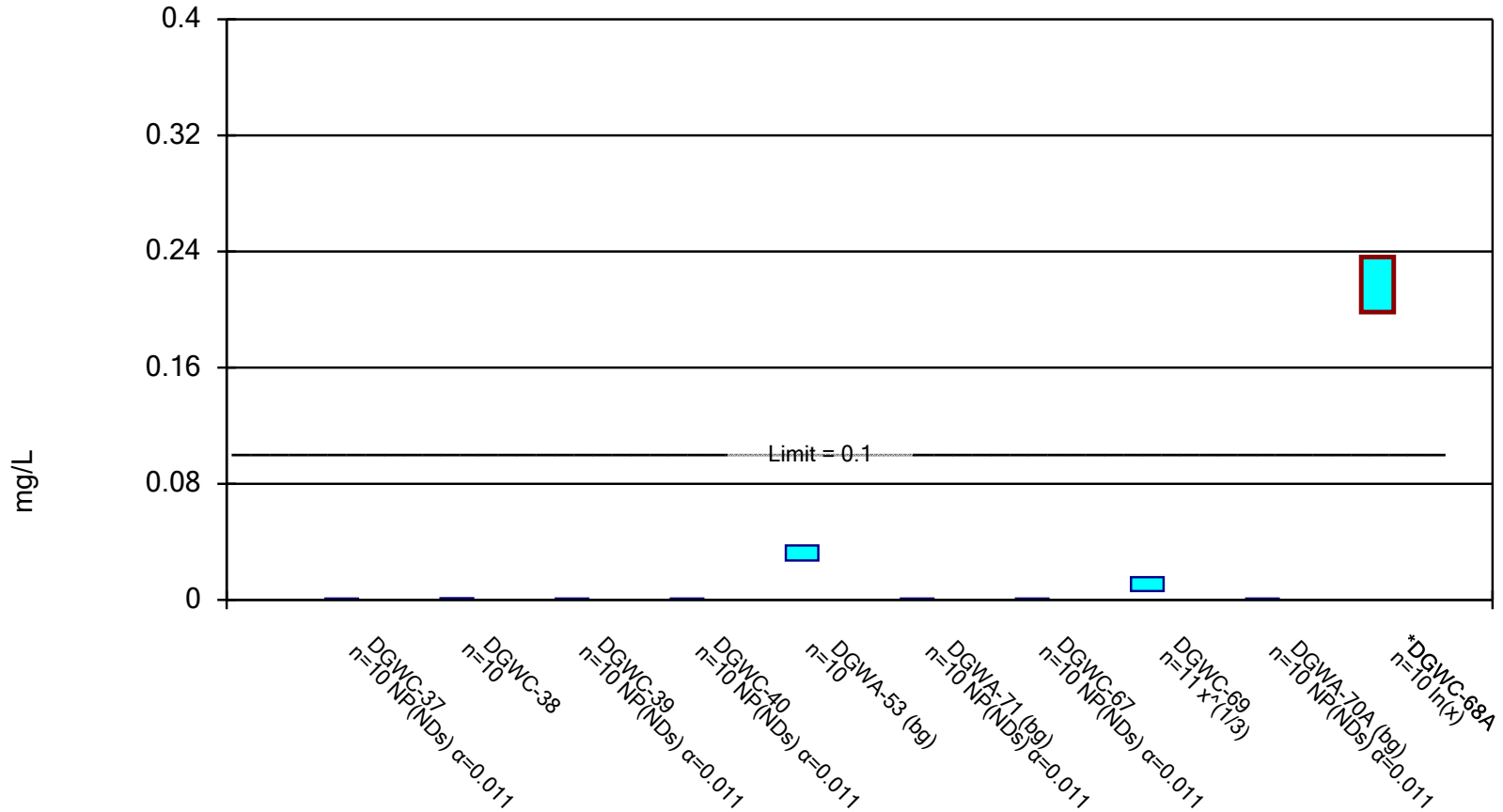
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

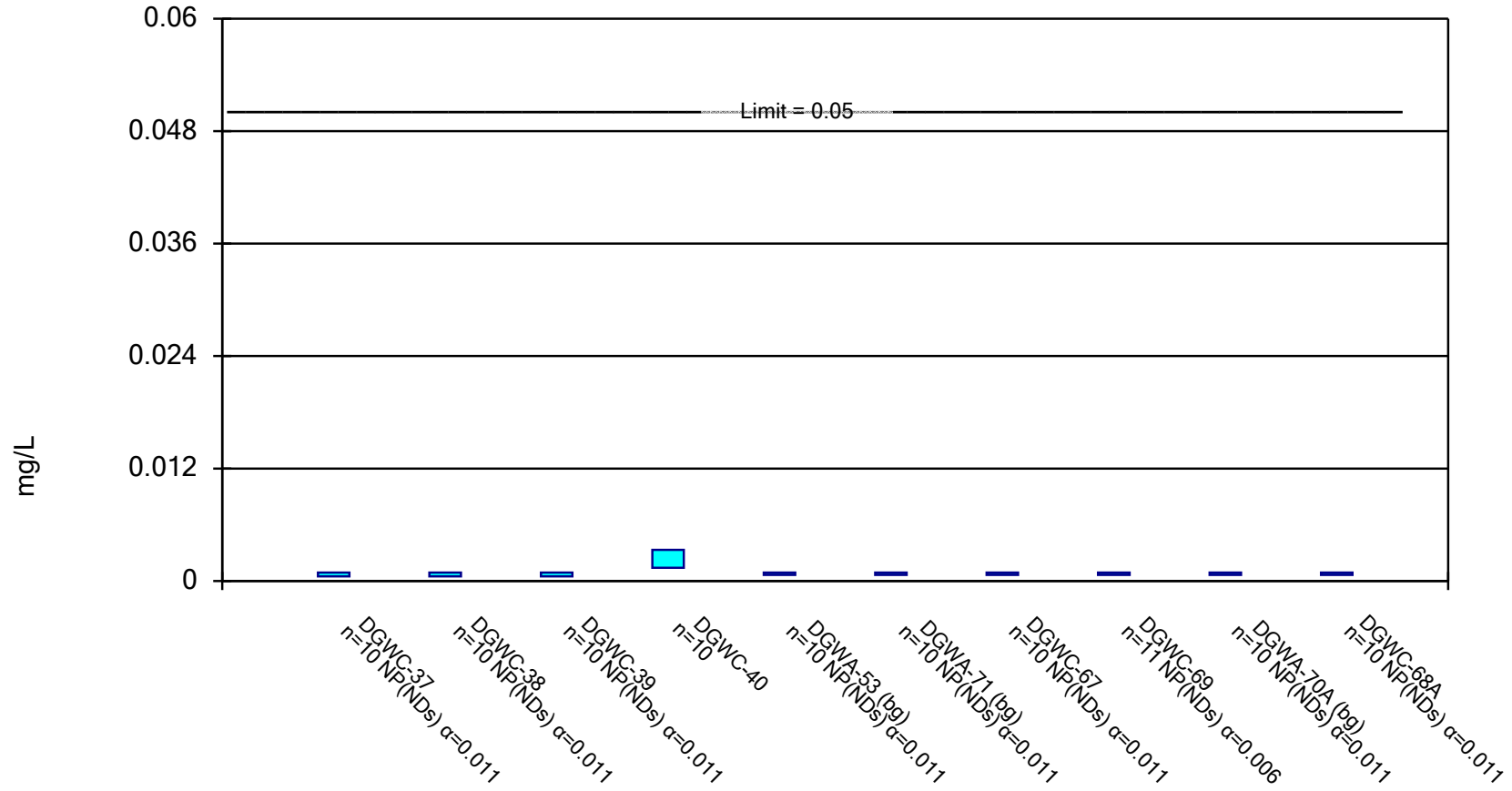
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

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.

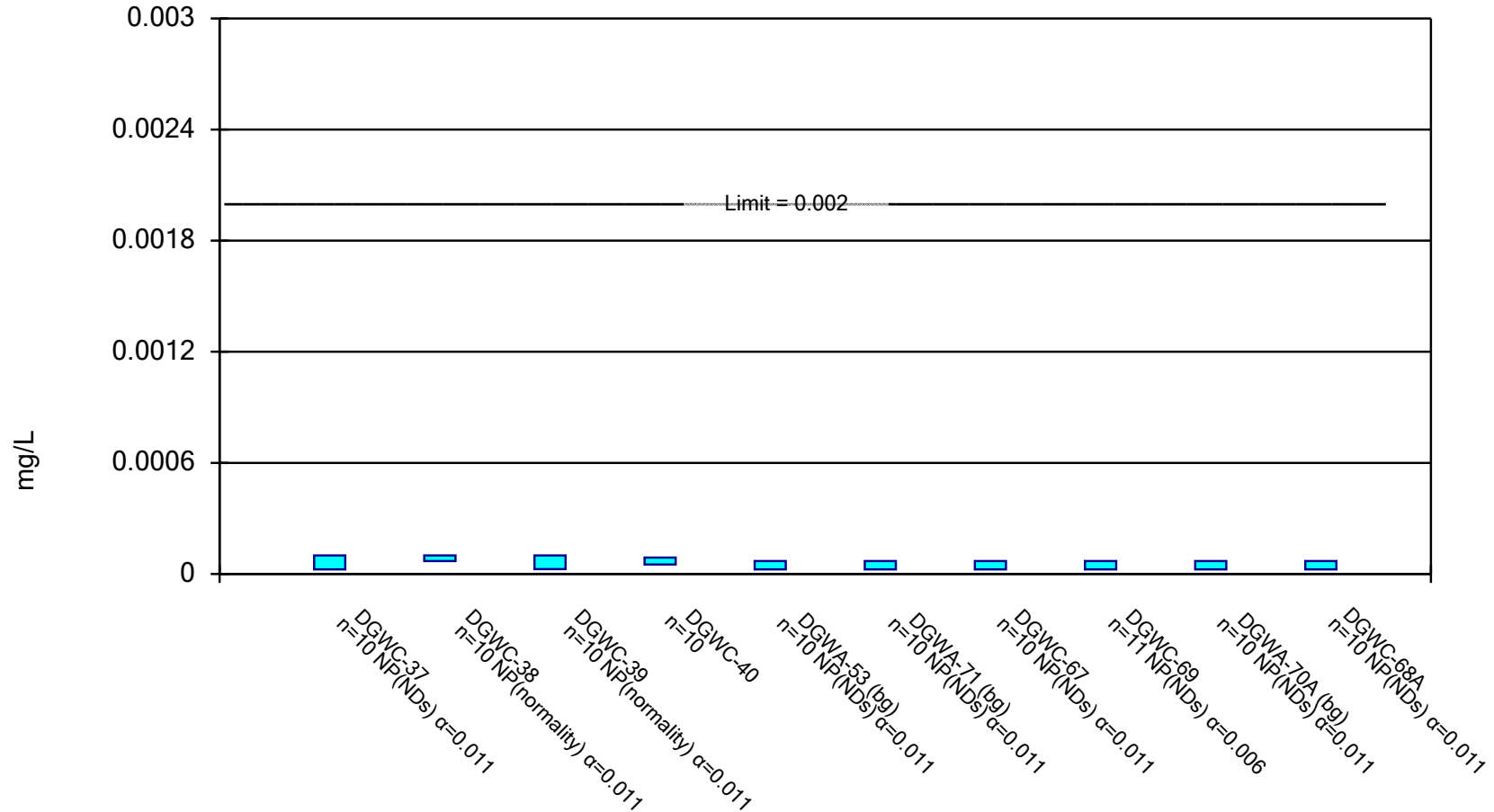


Constituent: Selenium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

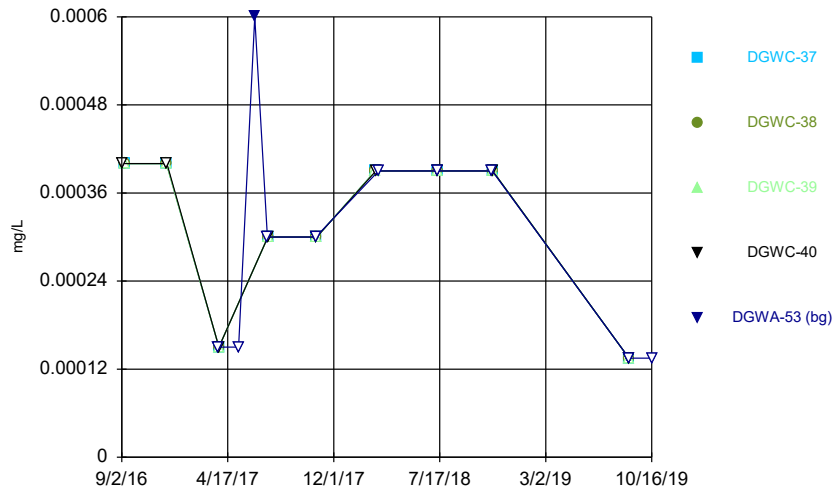
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Thallium Analysis Run 3/20/2020 12:54 PM View: APPIV_AP1

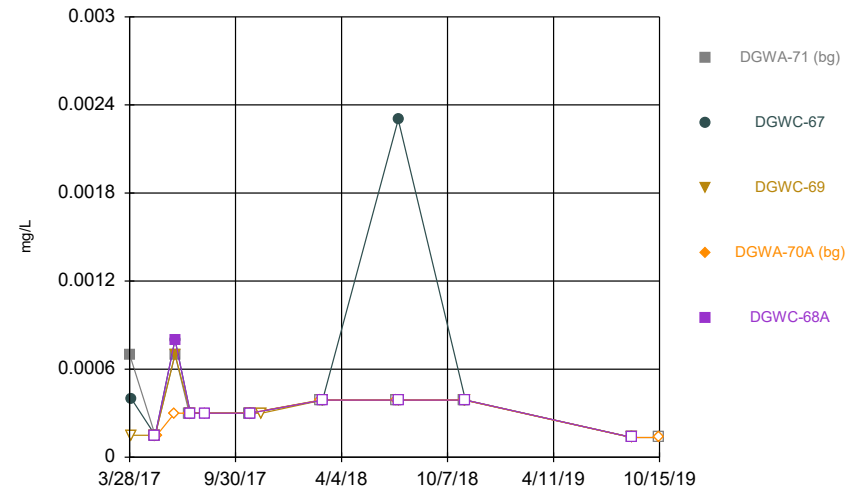
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



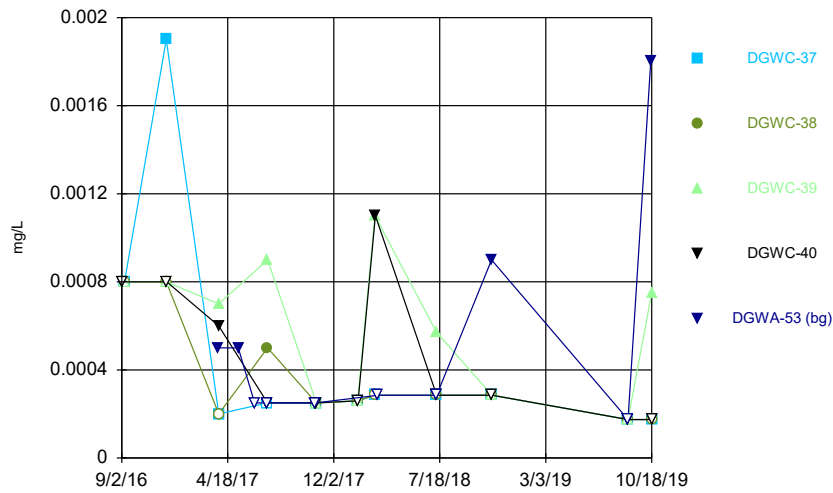
Constituent: Antimony Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



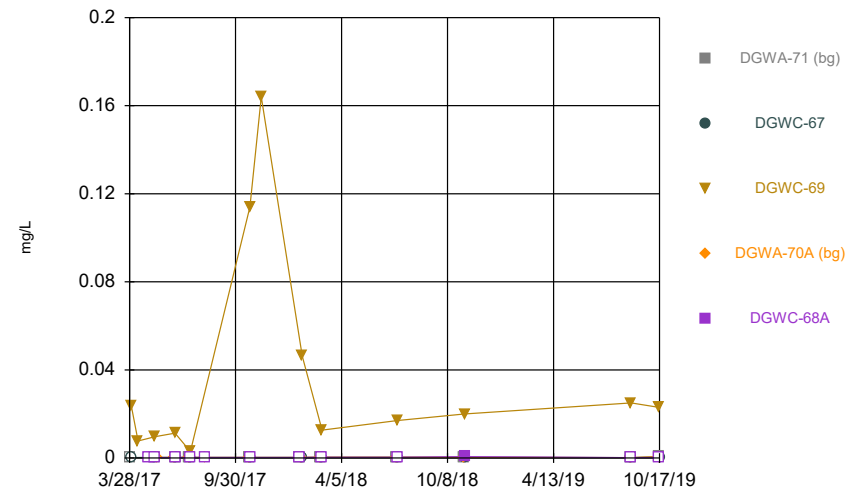
Constituent: Antimony Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



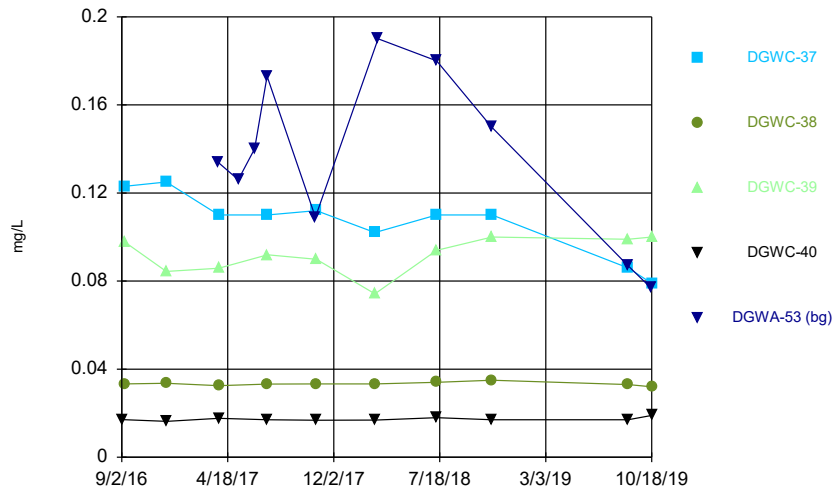
Constituent: Arsenic Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



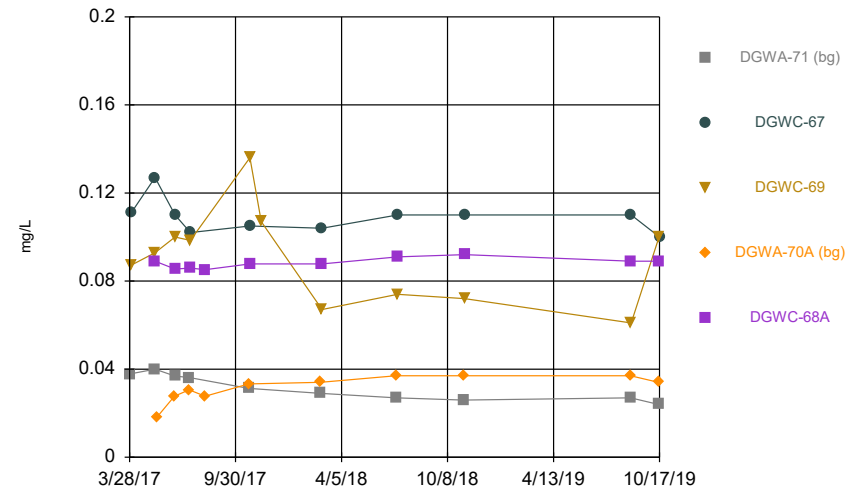
Constituent: Arsenic Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



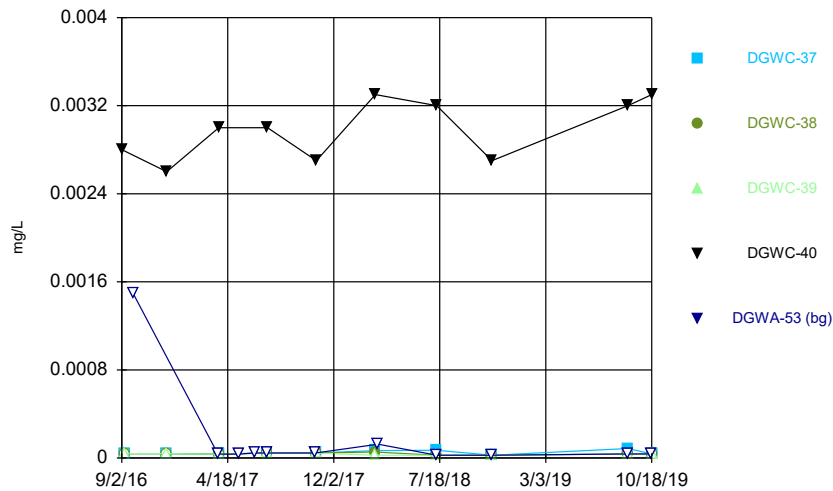
Constituent: Barium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



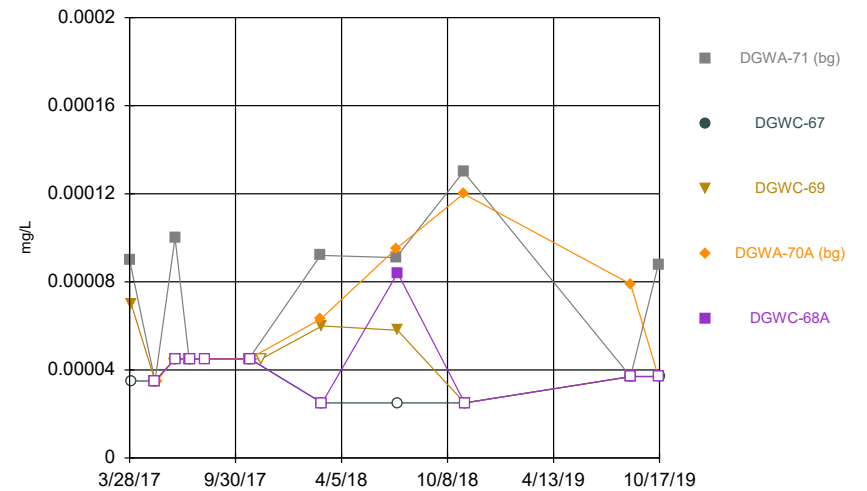
Constituent: Barium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



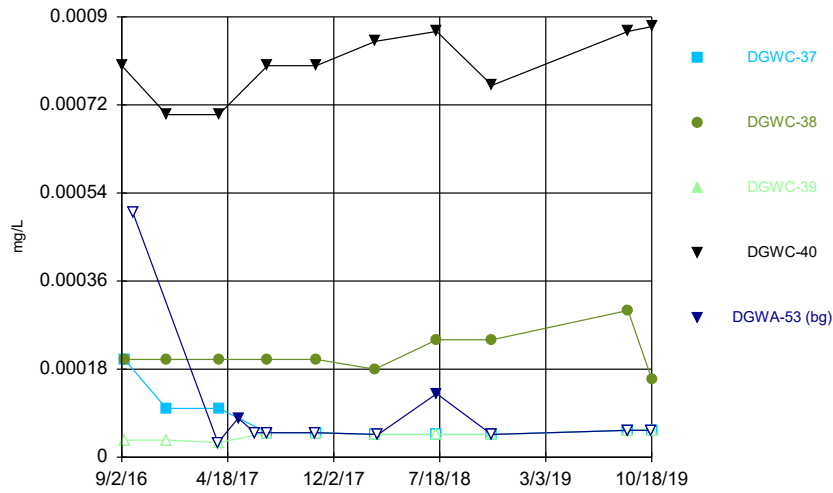
Constituent: Beryllium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



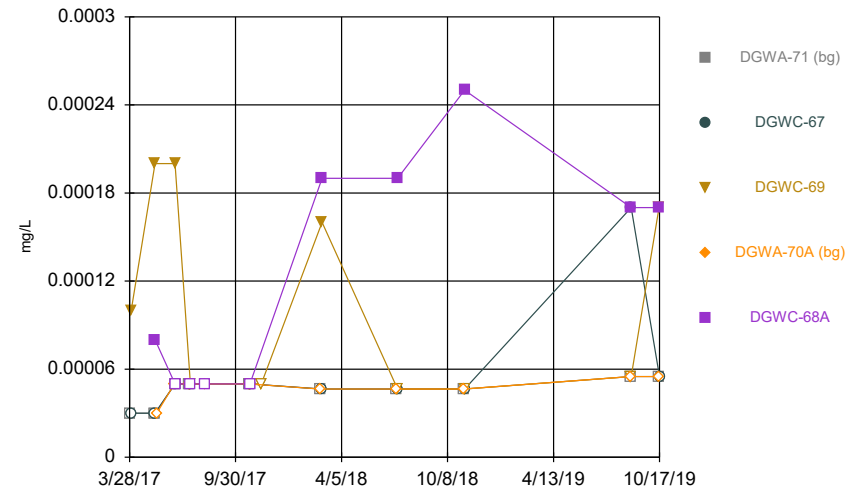
Constituent: Beryllium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



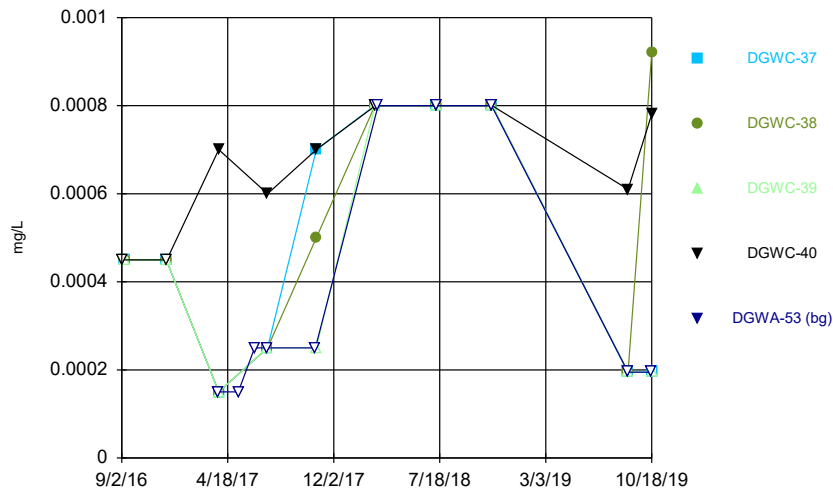
Constituent: Cadmium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



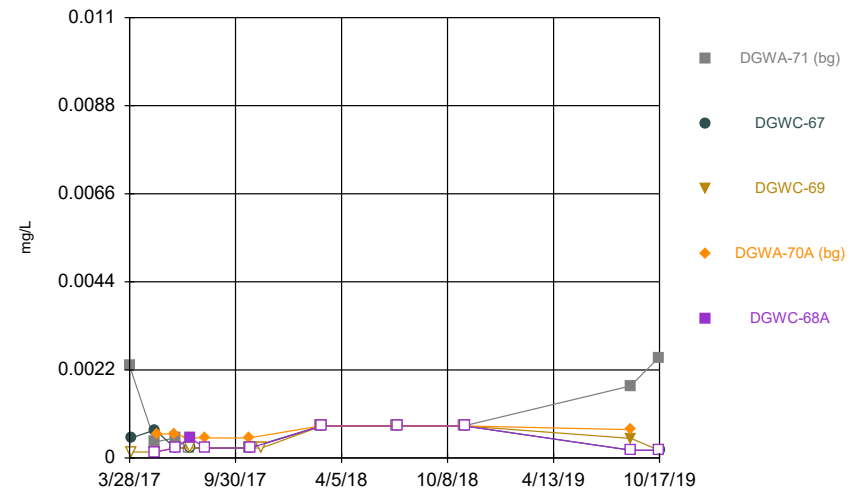
Constituent: Cadmium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



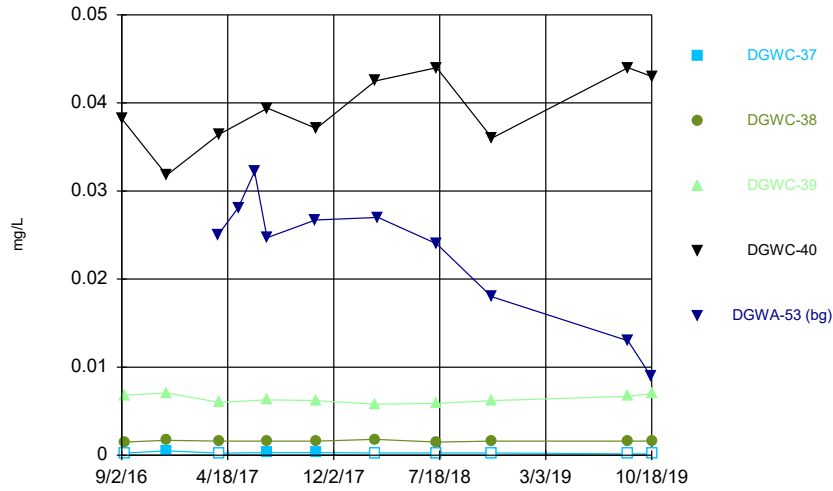
Constituent: Chromium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



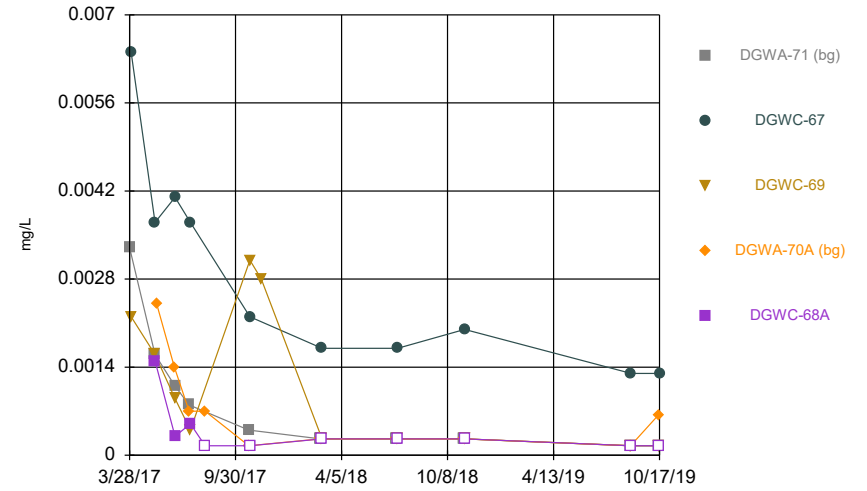
Constituent: Chromium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



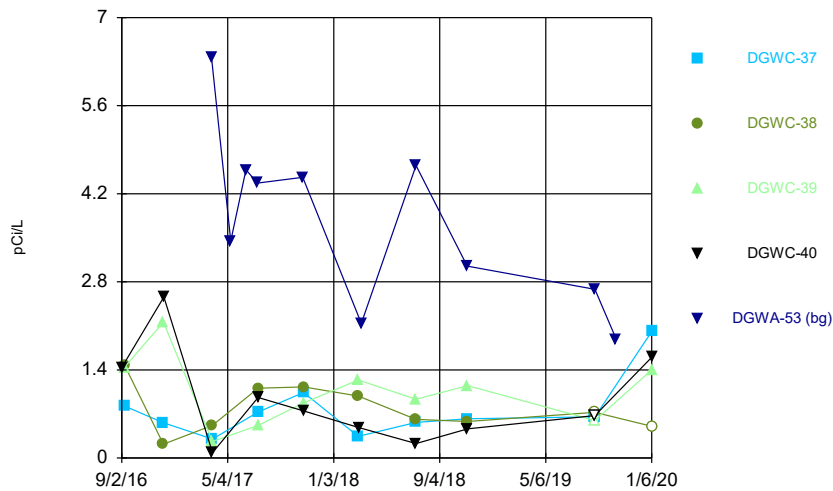
Constituent: Cobalt Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



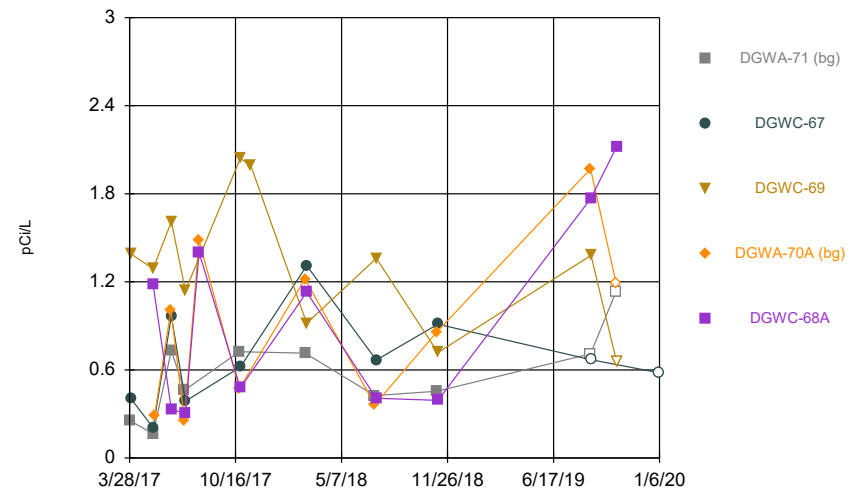
Constituent: Cobalt Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



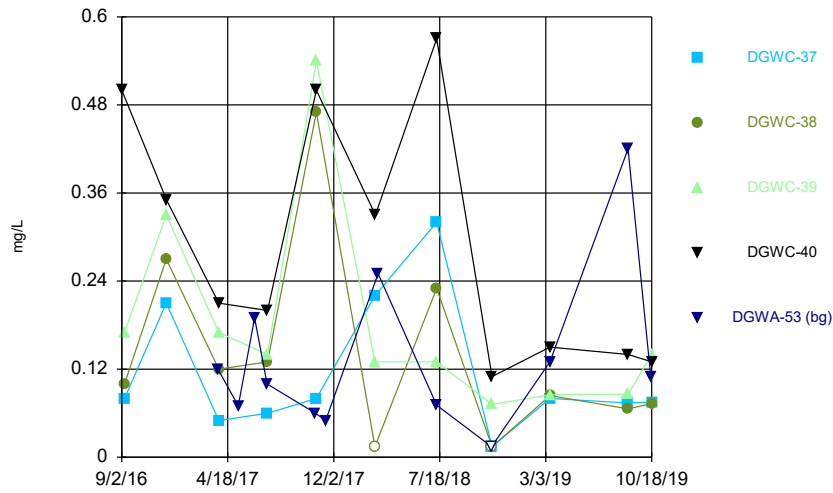
Constituent: Combined Radium 226 + 228 Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



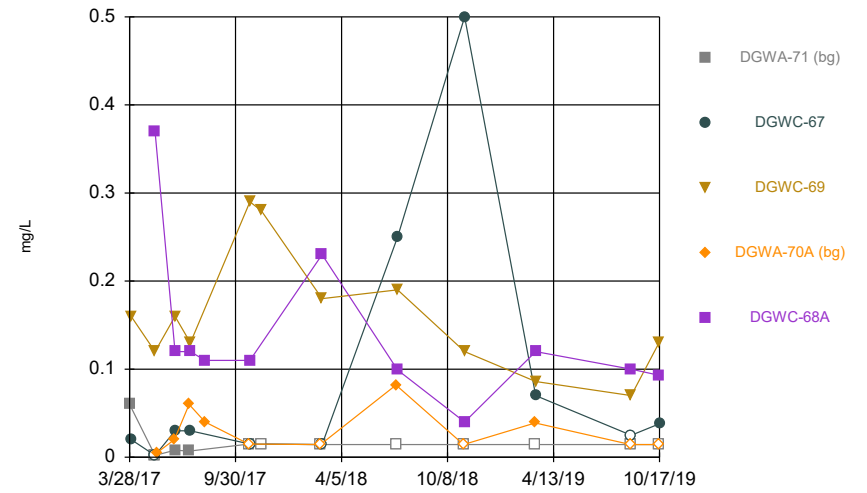
Constituent: Combined Radium 226 + 228 Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



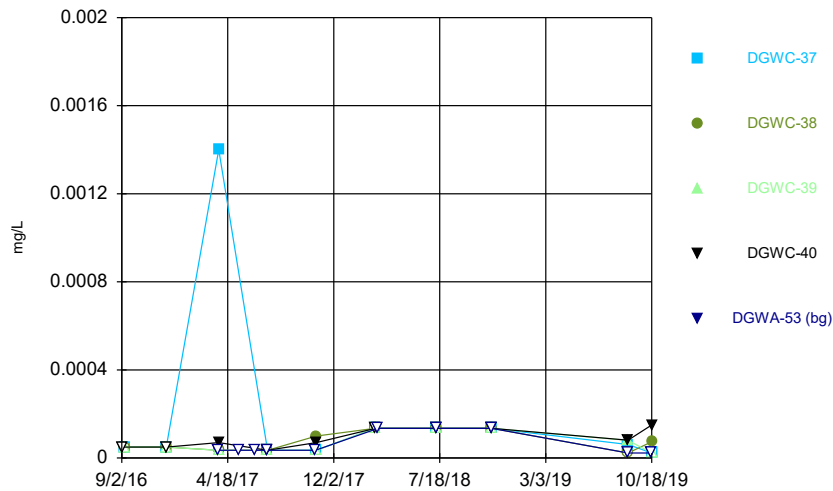
Constituent: Fluoride Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



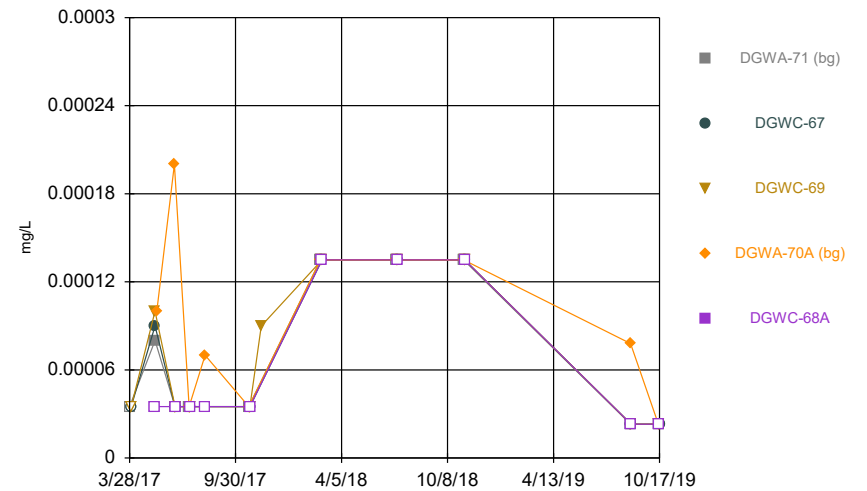
Constituent: Fluoride Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



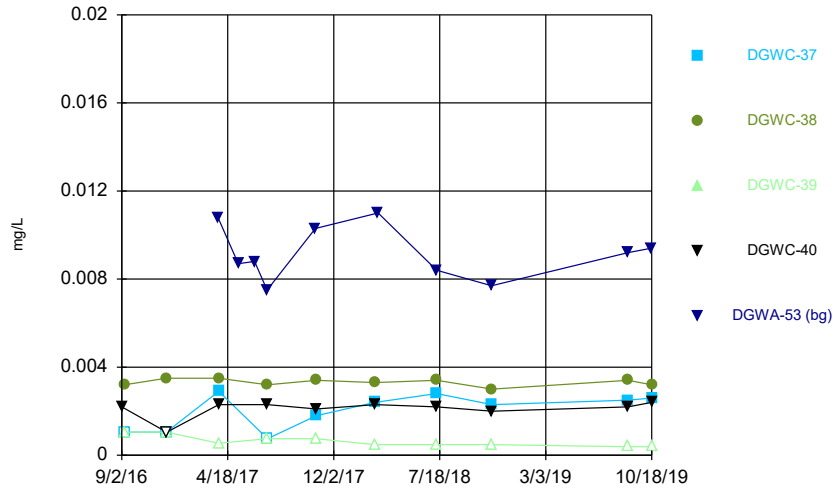
Constituent: Lead Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



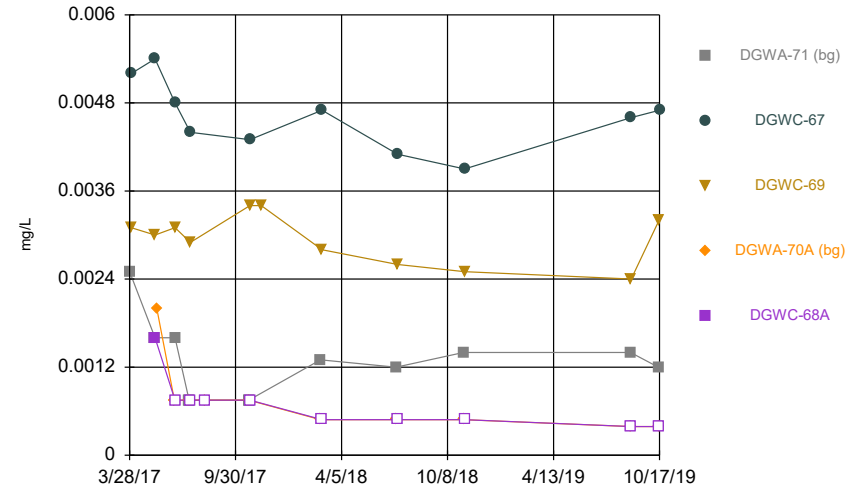
Constituent: Lead Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



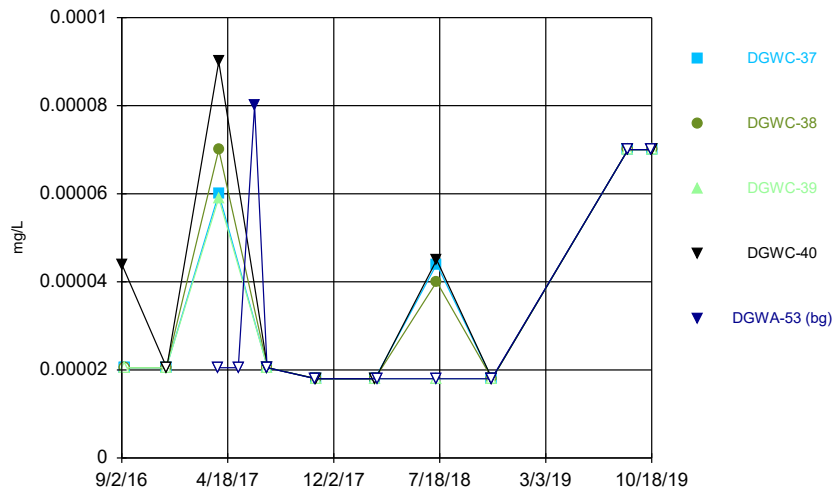
Constituent: Lithium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



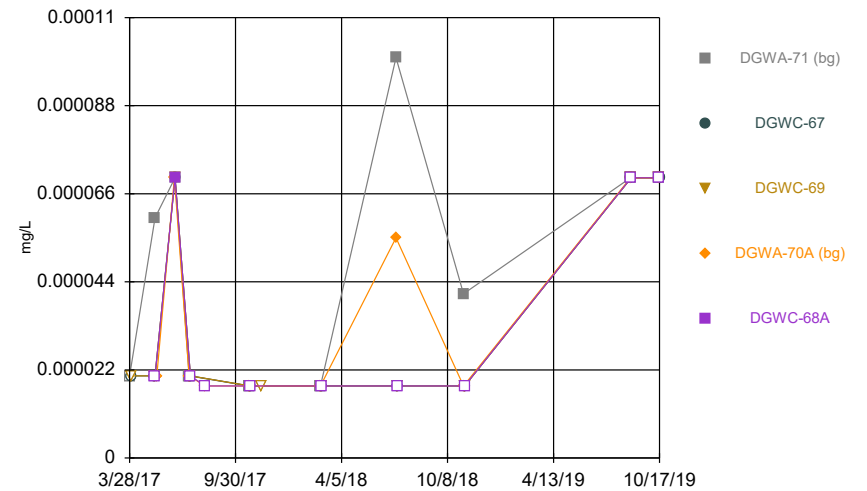
Constituent: Lithium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



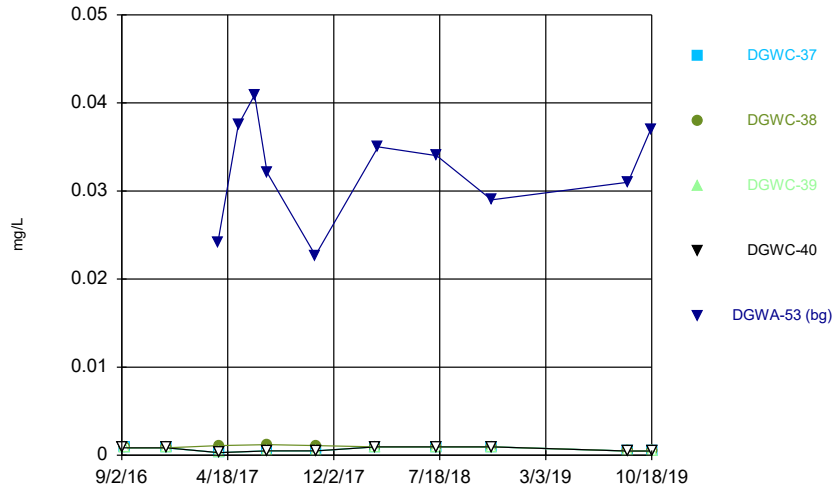
Constituent: Mercury Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



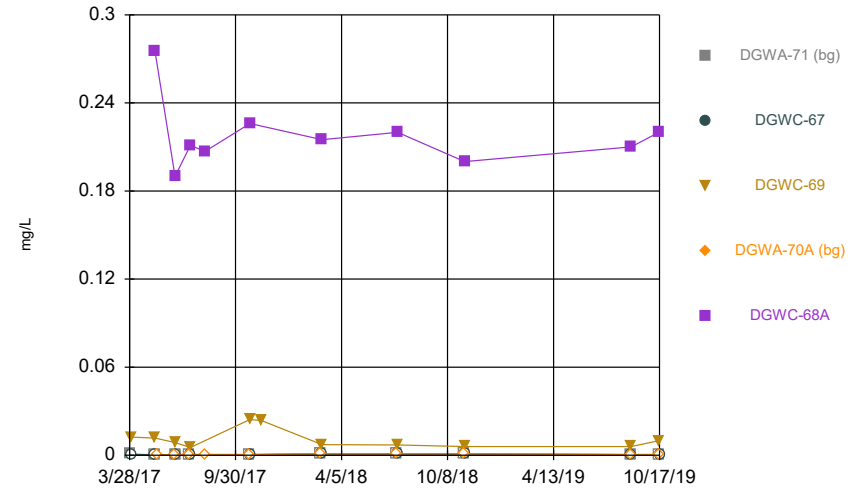
Constituent: Mercury Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



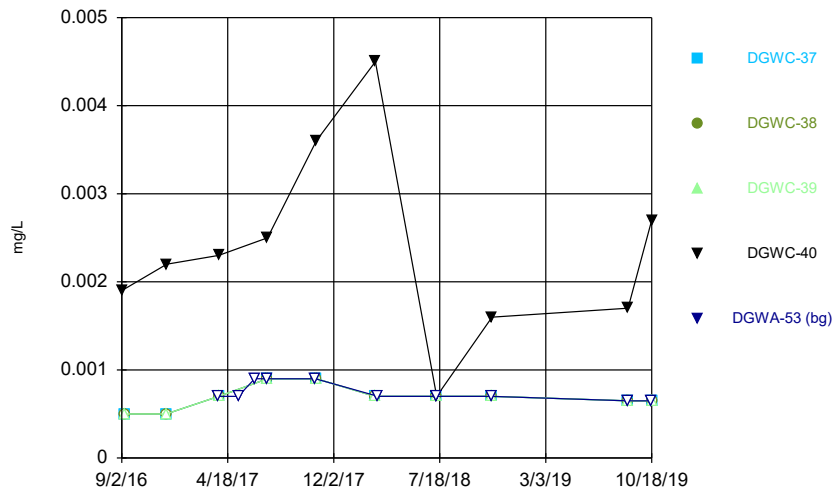
Constituent: Molybdenum Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



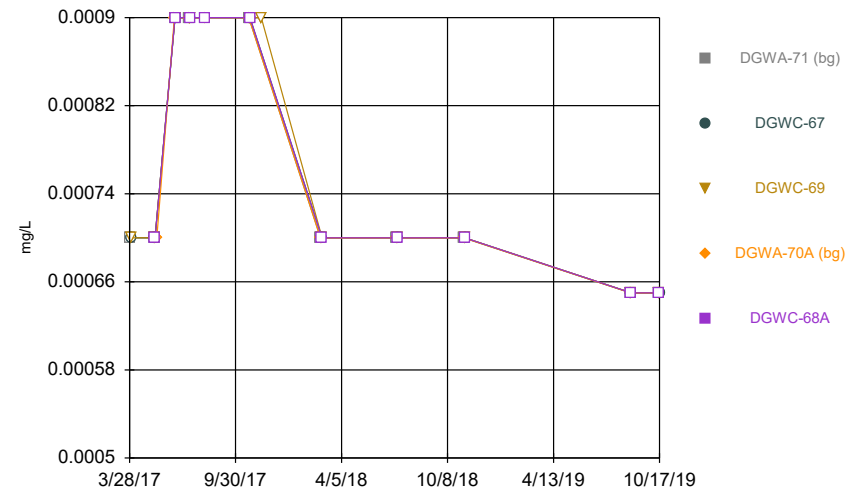
Constituent: Molybdenum Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



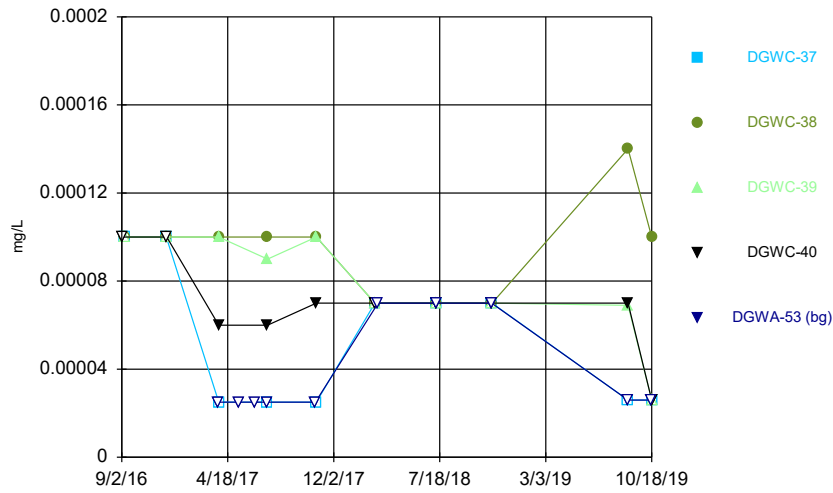
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



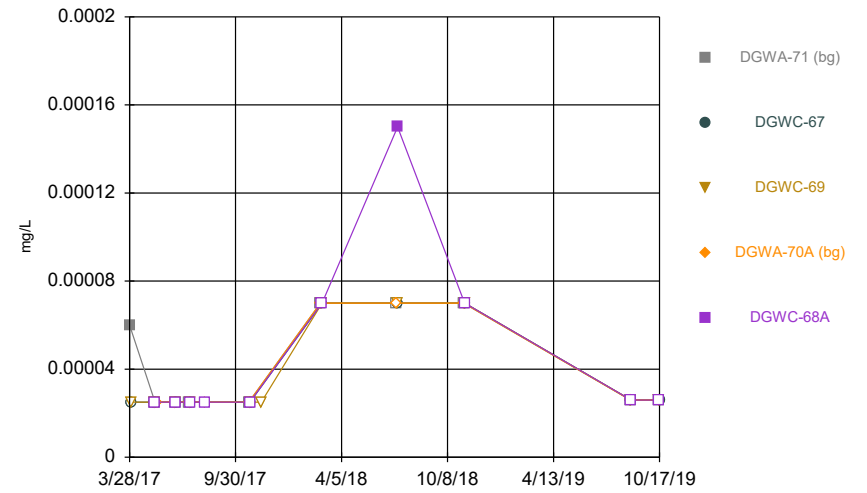
Constituent: Selenium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



Constituent: Thallium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
 McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



Constituent: Thallium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
 McDonough Client: Golder Associates Data: McDonough Ash Pond

Trend Test

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 2/14/2020, 2:47 PM

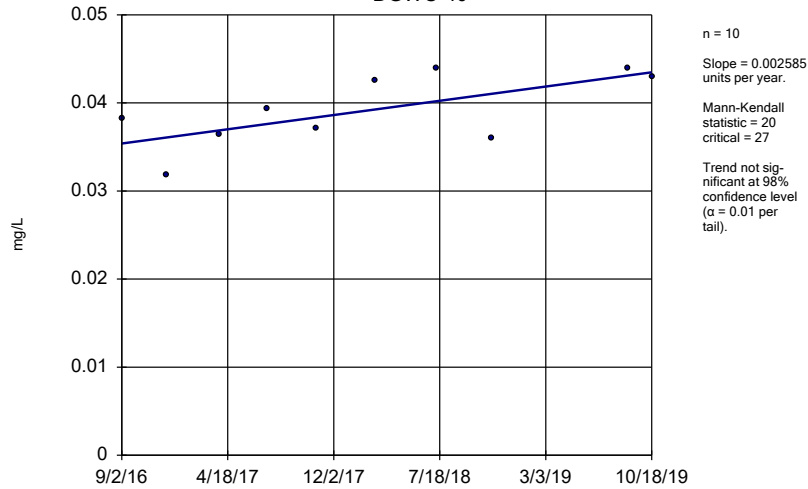
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	DGWA-53 (bg)	-0.00...	-29	-27	Yes	10	0	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-71 (bg)	-0.00...	-41	-27	Yes	10	50	n/a	n/a	0.02	NP

Trend Test

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 2/14/2020, 2:47 PM

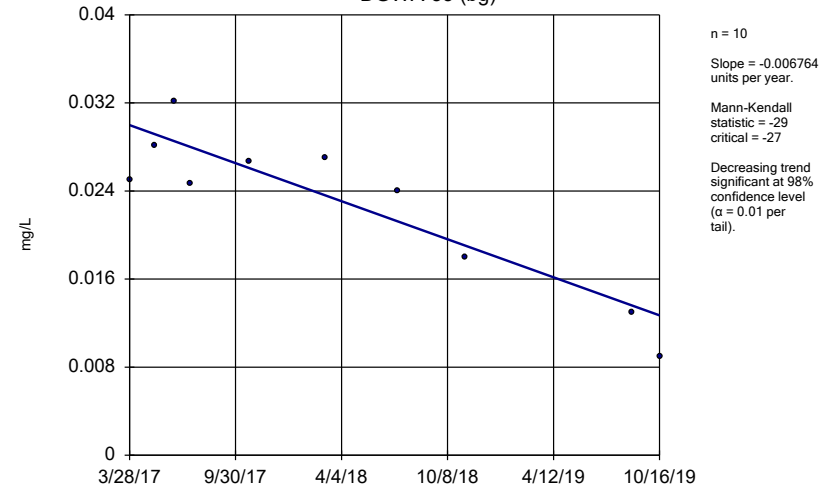
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	DGWC-40	0.002585	20	27	No	10	0	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-53 (bg)	-0.00...	-29	-27	Yes	10	0	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-71 (bg)	-0.00...	-41	-27	Yes	10	50	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-70A ...	-0.00...	-24	-27	No	10	50	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWC-68A	-0.00...	-22	-27	No	10	70	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWC-40	0	-1	-27	No	10	100	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWA-53 (bg)	-0.00...	-1	-27	No	10	0	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWA-71 (bg)	0	2	27	No	10	90	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWA-70A ...	0	7	27	No	10	100	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWC-68A	0	0	27	No	10	0	n/a	n/a	0.02	NP

Sen's Slope Estimator
DGWC-40



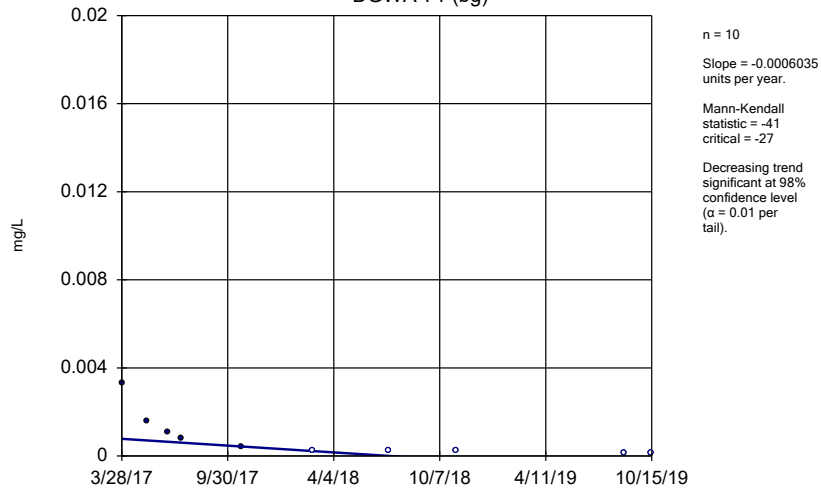
Constituent: Cobalt Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-53 (bg)



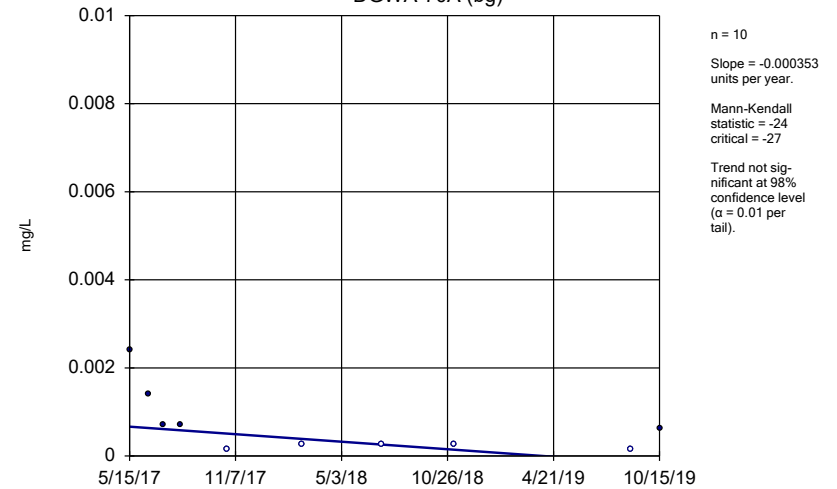
Constituent: Cobalt Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-71 (bg)



Constituent: Cobalt Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-70A (bg)



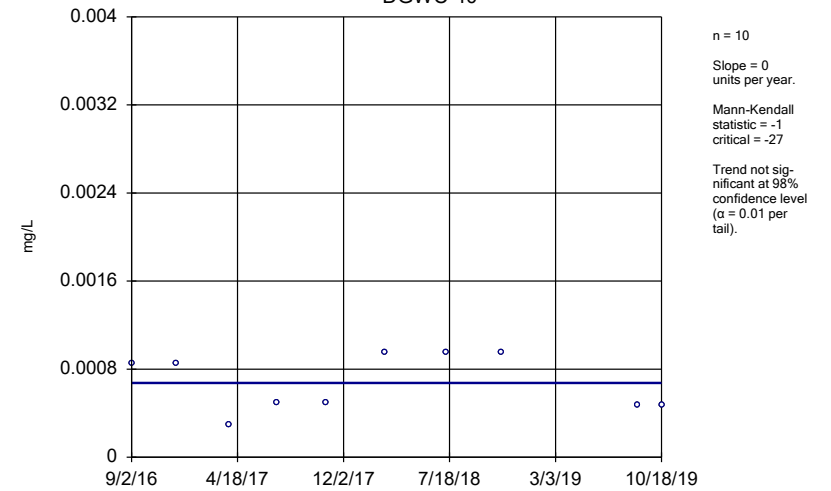
Constituent: Cobalt Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWC-68A



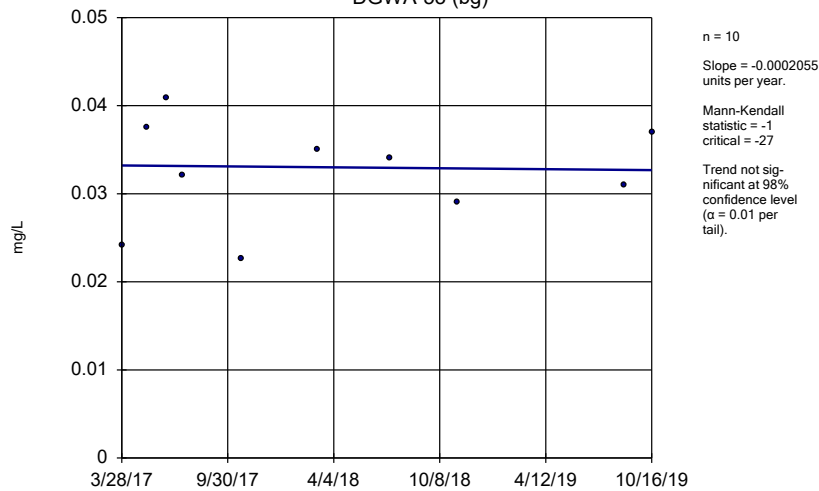
Constituent: Cobalt Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWC-40



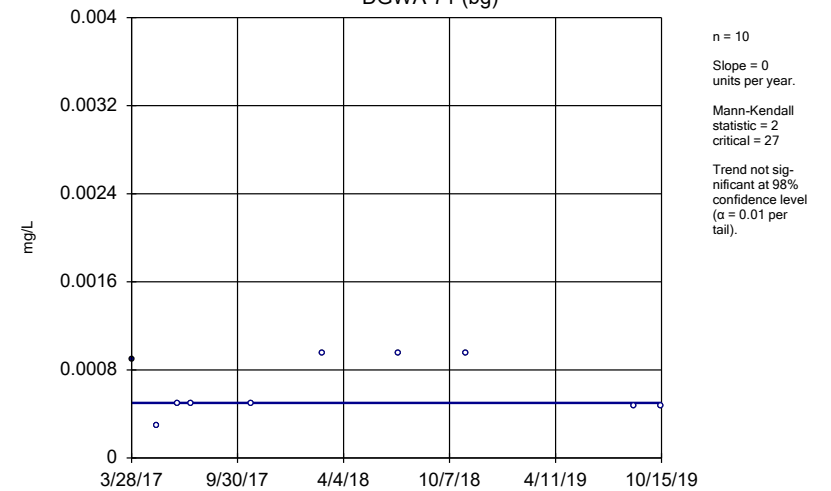
Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-53 (bg)



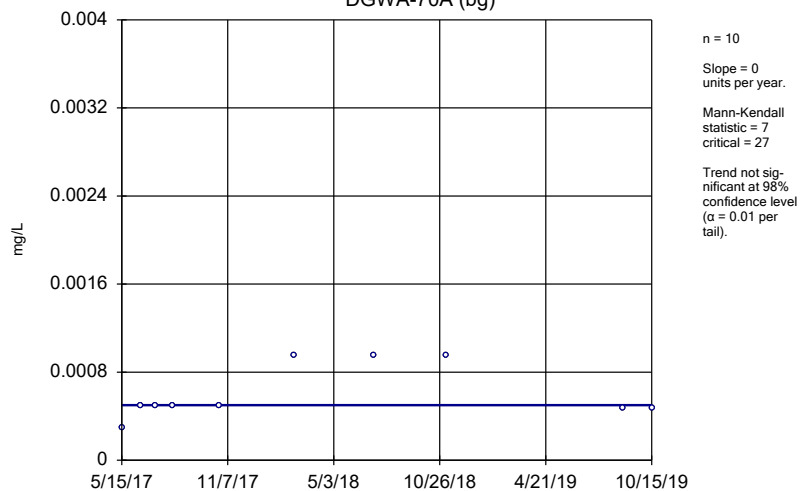
Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-71 (bg)



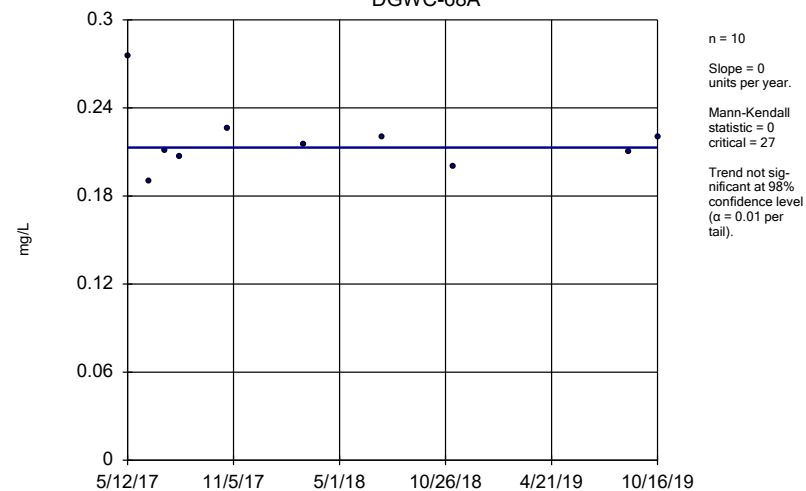
Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator DGWA-70A (bg)



Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator DGWC-68A



Constituent: Molybdenum Analysis Run 2/14/2020 2:47 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

State Statistical Package

Prediction Limit

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/31/2020, 11:26 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	DGWC-37	0.13	n/a	10/18/2019	1.3	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-38	0.13	n/a	10/18/2019	3.1	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-39	0.13	n/a	10/18/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-40	0.13	n/a	10/18/2019	0.9	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-67	0.13	n/a	10/17/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-69	0.13	n/a	10/16/2019	0.38	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-68A	0.13	n/a	10/16/2019	1.5	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Calcium (mg/L)	DGWC-37	40.3	n/a	10/18/2019	52.5	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-38	40.3	n/a	10/18/2019	97.8	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-39	40.3	n/a	10/18/2019	108	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-40	40.3	n/a	10/18/2019	44.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-67	40.3	n/a	10/17/2019	46.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-68A	40.3	n/a	10/16/2019	49.7	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Chloride (mg/L)	DGWC-37	4.061	n/a	10/18/2019	5.8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.061	n/a	10/18/2019	8.6	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.061	n/a	10/18/2019	8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.061	n/a	10/18/2019	19.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.061	n/a	10/17/2019	6.9	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.061	n/a	10/16/2019	4.7	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	4.061	n/a	10/16/2019	4.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-40	6.573	5.23	10/18/2019	4.71	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-68A	6.573	5.23	10/16/2019	6.6	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	33.07	n/a	10/18/2019	76.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	33.07	n/a	10/18/2019	239	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	33.07	n/a	10/18/2019	182	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	33.07	n/a	10/18/2019	205	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	33.07	n/a	10/17/2019	99.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	298.1	n/a	10/18/2019	494	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	298.1	n/a	10/18/2019	489	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	298.1	n/a	10/18/2019	360	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2

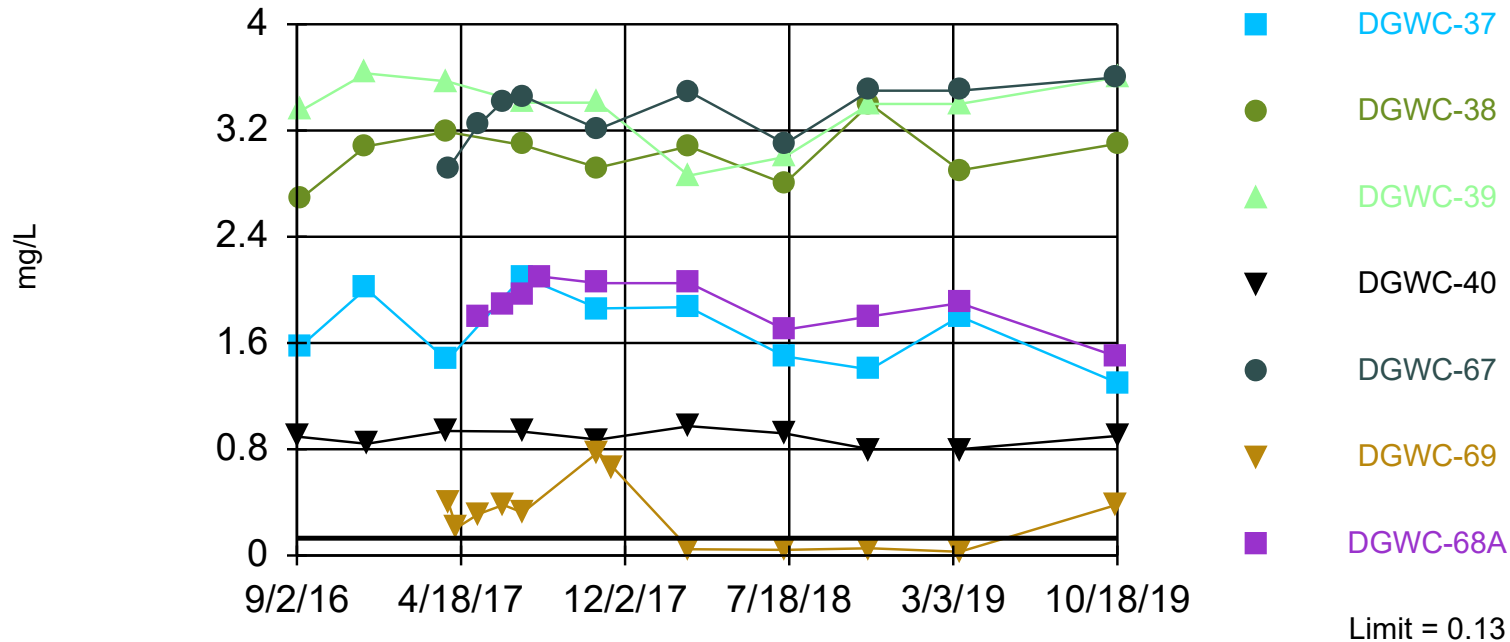
Prediction Limit

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/31/2020, 11:26 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	10/18/2019	1.3	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-38	0.13	n/a	10/18/2019	3.1	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-39	0.13	n/a	10/18/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-40	0.13	n/a	10/18/2019	0.9	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-67	0.13	n/a	10/17/2019	3.6	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-69	0.13	n/a	10/16/2019	0.38	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Boron (mg/L)	DGWC-68A	0.13	n/a	10/16/2019	1.5	Yes	31	12.9	n/a	0.001802	NP Inter (normality) ...
Calcium (mg/L)	DGWC-37	40.3	n/a	10/18/2019	52.5	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-38	40.3	n/a	10/18/2019	97.8	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-39	40.3	n/a	10/18/2019	108	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-40	40.3	n/a	10/18/2019	44.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-67	40.3	n/a	10/17/2019	46.9	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-69	40.3	n/a	10/16/2019	16.2	No	32	0	n/a	0.001709	NP Inter (normality) ...
Calcium (mg/L)	DGWC-68A	40.3	n/a	10/16/2019	49.7	Yes	32	0	n/a	0.001709	NP Inter (normality) ...
Chloride (mg/L)	DGWC-37	4.061	n/a	10/18/2019	5.8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	4.061	n/a	10/18/2019	8.6	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	4.061	n/a	10/18/2019	8	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	4.061	n/a	10/18/2019	19.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	4.061	n/a	10/17/2019	6.9	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	4.061	n/a	10/16/2019	4.7	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	4.061	n/a	10/16/2019	4.2	Yes	34	0	ln(x)	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	DGWC-37	0.42	n/a	10/18/2019	0.075	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-38	0.42	n/a	10/18/2019	0.073	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-39	0.42	n/a	10/18/2019	0.14	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-40	0.42	n/a	10/18/2019	0.13	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-67	0.42	n/a	10/17/2019	0.038	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-69	0.42	n/a	10/16/2019	0.13	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
Fluoride (mg/L)	DGWC-68A	0.42	n/a	10/16/2019	0.093	No	35	42.86	n/a	0.001432	NP Inter (xform) 1 of 2
pH [field] (S.U.)	DGWC-37	6.573	5.23	10/18/2019	6.26	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-38	6.573	5.23	10/18/2019	6	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-39	6.573	5.23	10/18/2019	6.35	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-40	6.573	5.23	10/18/2019	4.71	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-67	6.573	5.23	10/17/2019	6.14	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-69	6.573	5.23	10/16/2019	6.19	No	35	0	ln(x)	0.000...	Param Inter 1 of 2
pH [field] (S.U.)	DGWC-68A	6.573	5.23	10/16/2019	6.6	Yes	35	0	ln(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-37	33.07	n/a	10/18/2019	76.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	33.07	n/a	10/18/2019	239	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	33.07	n/a	10/18/2019	182	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	33.07	n/a	10/18/2019	205	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	33.07	n/a	10/17/2019	99.4	Yes	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-69	33.07	n/a	10/16/2019	13.3	No	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	33.07	n/a	10/16/2019	32.1	No	34	0	sqrt(x)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-37	298.1	n/a	10/18/2019	269	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	298.1	n/a	10/18/2019	494	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	298.1	n/a	10/18/2019	489	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	298.1	n/a	10/18/2019	360	Yes	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	298.1	n/a	10/17/2019	281	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-69	298.1	n/a	10/16/2019	108	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2
TDS (mg/L)	DGWC-68A	298.1	n/a	10/16/2019	218	No	31	0	x^(1/3)	0.000...	Param Inter 1 of 2

Exceeds Limit: DGWC-37, DGWC-38,
 DGWC-39, DGWC-40, DGWC-67,
 DGWC 69 DGWC 68A

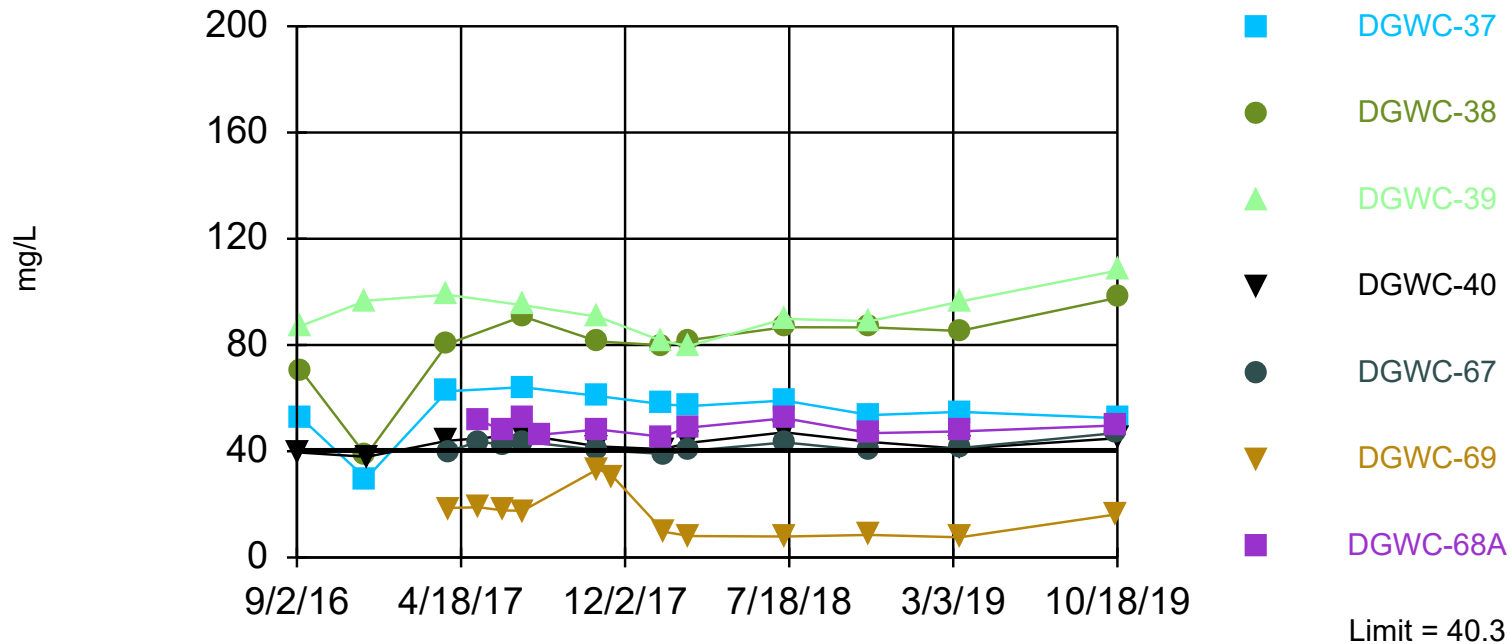
Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 31 background values. 12.9% NDs. Annual per-constituent alpha = 0.02845. Individual comparison alpha = 0.001802 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Exceeds Limit: DGWC-37, DGWC-38,
DGWC-39, DGWC-40, DGWC-67,
DGWC 68A

Prediction Limit Interwell Non-parametric

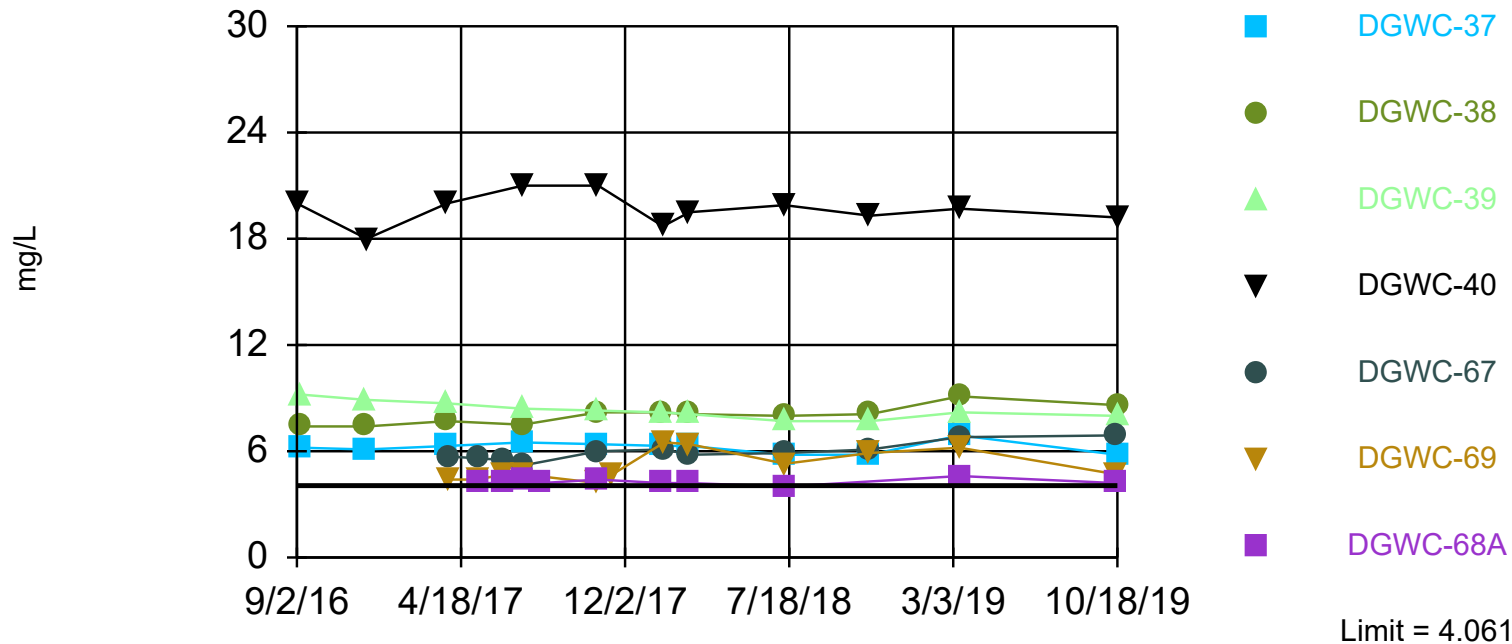


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. Annual per-constituent alpha = 0.027. Individual comparison alpha = 0.001709 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Constituent: Calcium Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limit: DGWC-37, DGWC-38,
DGWC-39, DGWC-40, DGWC-67,
DGWC 69 DGWC 68A

Prediction Limit Interwell Parametric

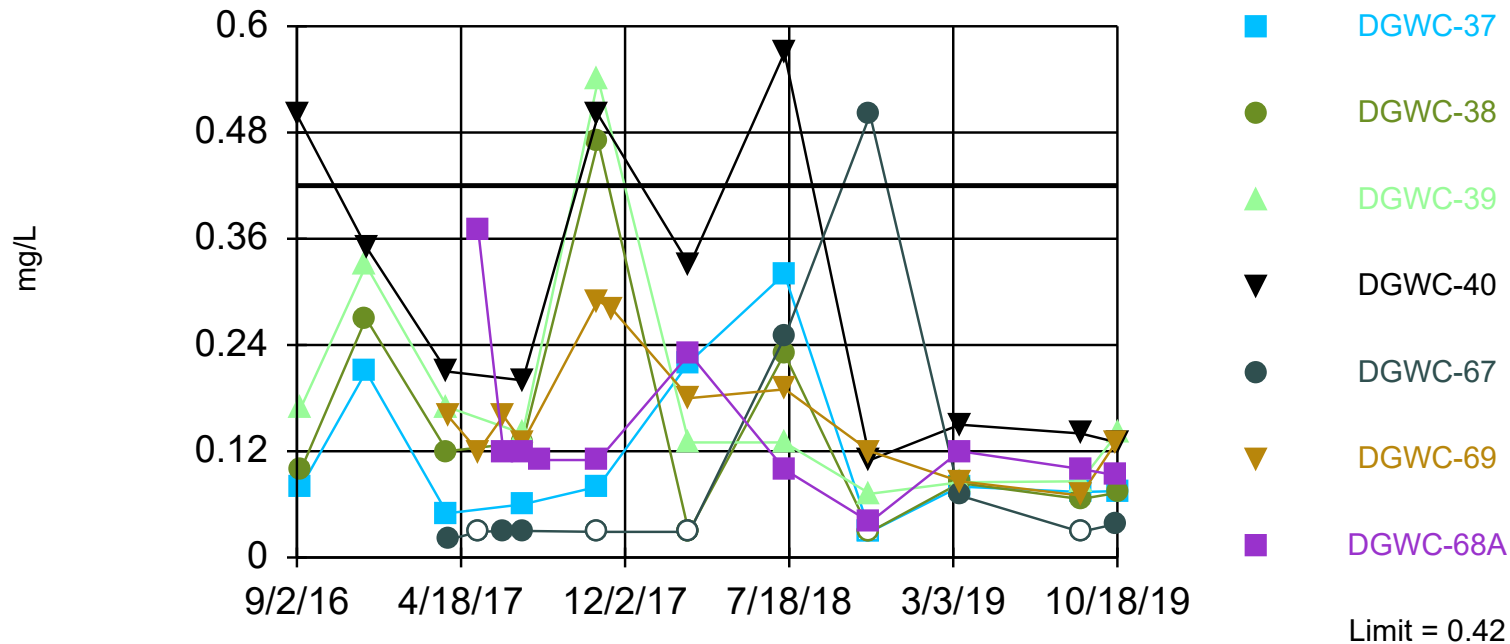


Background Data Summary (based on natural log transformation): Mean=0.9725, Std. Dev.=0.21, n=34.
Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9084, critical = 0.908. Kappa = 2.043 (c=7,
w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403.
Comparing 7 points to limit. Assumes 1 future value.

Constituent: Chloride Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Within Limit

Prediction Limit Interwell Non-parametric

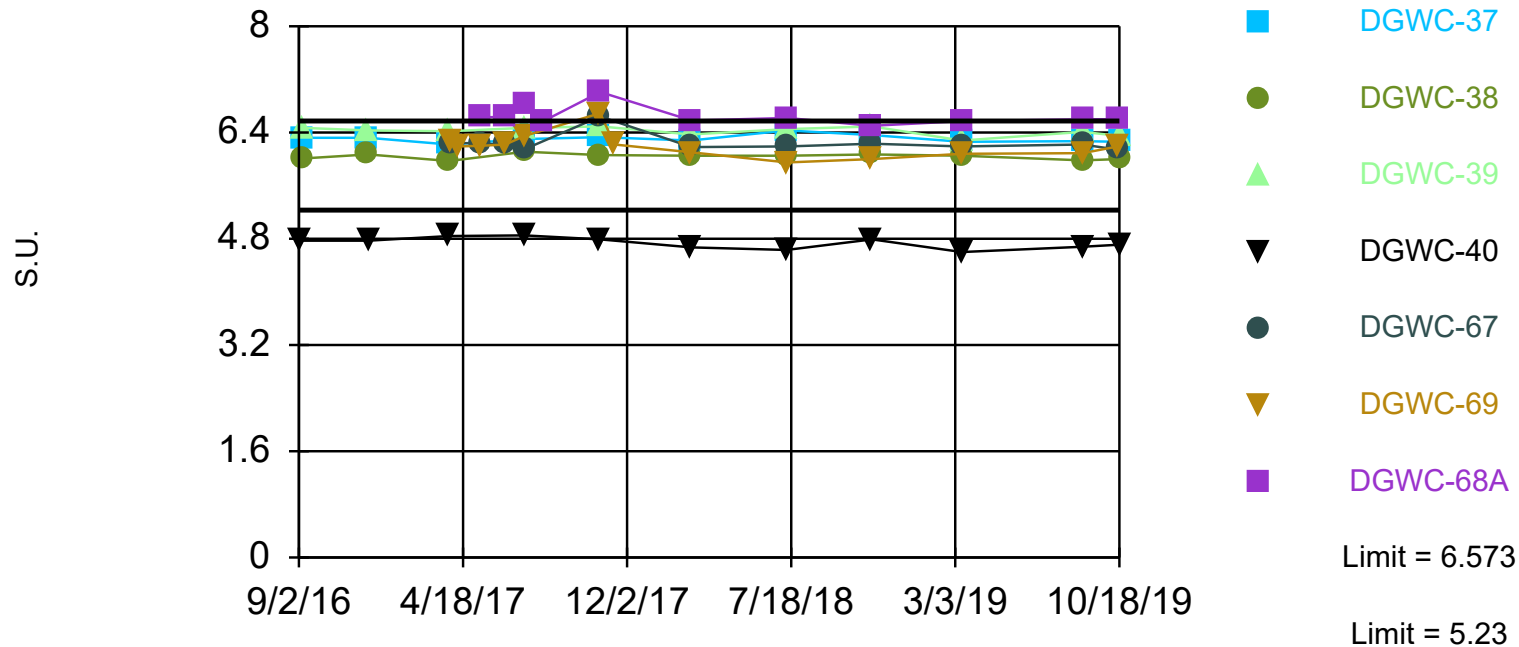


Non-parametric test used after natural log transformation resulted in a parametric limit of 5.927, which exceeds 10 times the highest background value (user-adjustable cutoff). Limit is highest of 35 background values. 42.86% NDs. Annual per-constituent alpha = 0.02266. Individual comparison alpha = 0.001432 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Constituent: Fluoride Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limits: DGWC-40, DGWC-68A

Prediction Limit Interwell Parametric

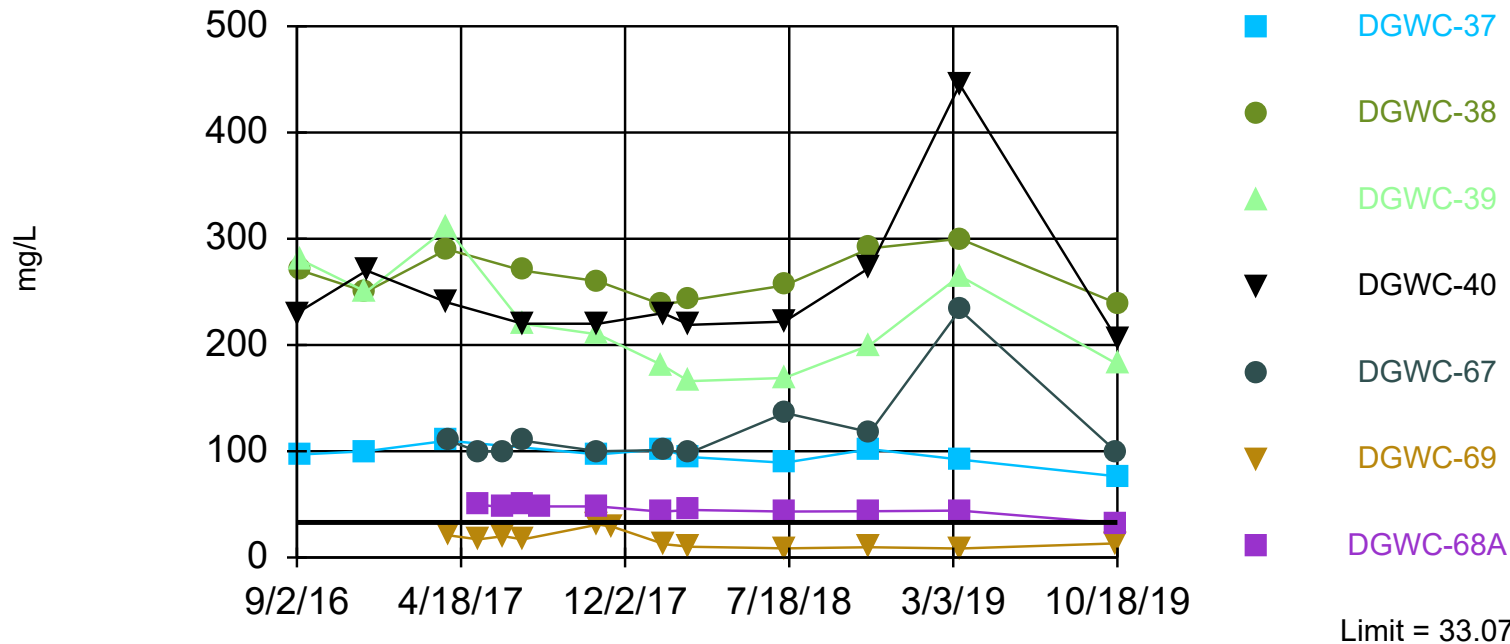


Background Data Summary (based on natural log transformation): Mean=1.769, Std. Dev.=0.05611, n=35. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9131, critical = 0.91. Kappa = 2.036 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004701. Comparing 7 points to limit. Assumes 1 future value.

Constituent: pH [field] Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limit: DGWC-37, DGWC-38,
 DGWC-39, DGWC-40, DGWC-67

Prediction Limit Interwell Parametric

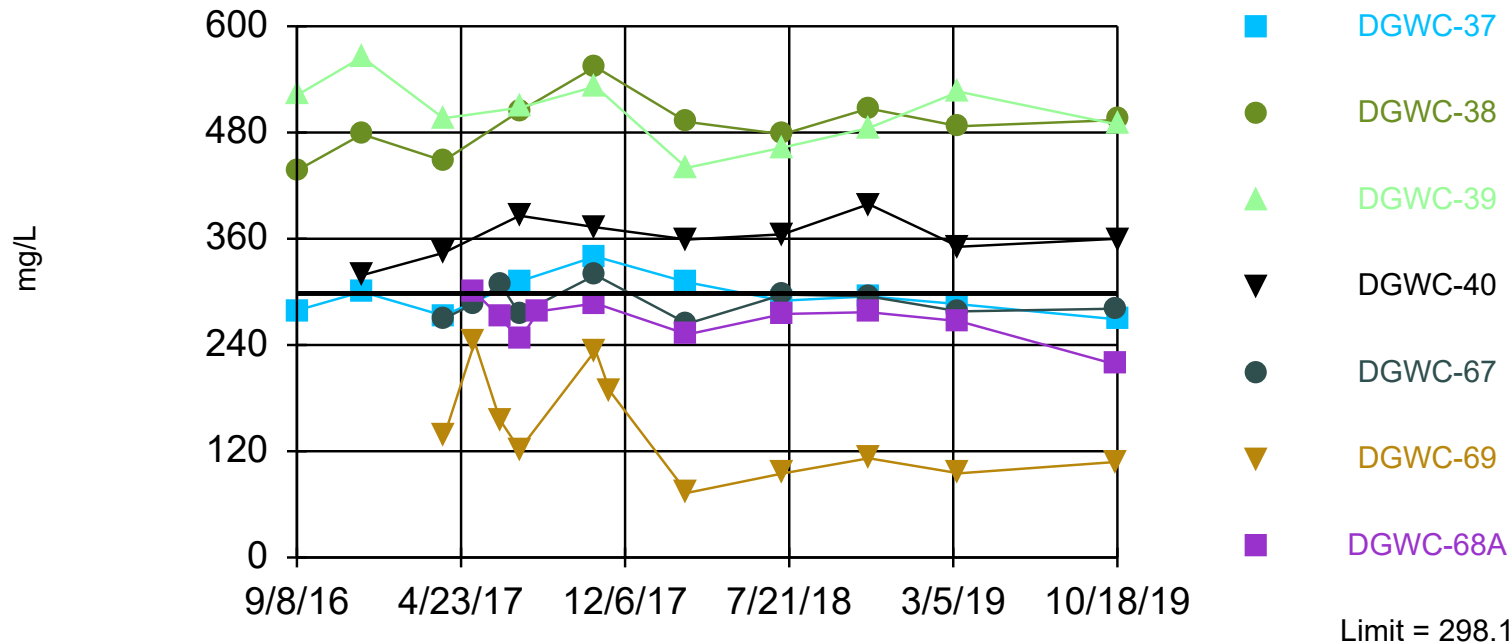


Background Data Summary (based on square root transformation): Mean=2.61, Std. Dev.=1.537, n=34.
 Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9363, critical = 0.908. Kappa = 2.043 (c=7,
 w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403.
 Comparing 7 points to limit. Assumes 1 future value.

Constituent: Sulfate Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
 McDonough Client: Golder Associates Data: McDonough Ash Pond

Exceeds Limit: DGWC-38, DGWC-39,
DGWC-40

Prediction Limit Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=4.718, Std. Dev.=0.9514, n=31. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9111, critical = 0.902. Kappa = 2.063 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 7 points to limit. Assumes 1 future value.

Constituent: TDS Analysis Run 3/31/2020 11:24 PM View: APPIII_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Tolerance Limit

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.0007	n/a	n/a	n/a	30	90	n/a	0.2146	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.0018	n/a	n/a	n/a	32	78.13	n/a	0.1937	NP Inter(NDs)
Barium (mg/L)	n/a	0.19	n/a	n/a	n/a	30	0	n/a	0.2146	NP Inter(normal...
Beryllium (mg/L)	n/a	0.0015	n/a	n/a	n/a	31	67.74	n/a	0.2039	NP Inter(normal...
Cadmium (mg/L)	n/a	0.0005	n/a	n/a	n/a	31	93.55	n/a	0.2039	NP Inter(NDs)
Chromium (mg/L)	n/a	0.0025	n/a	n/a	n/a	29	62.07	n/a	0.2259	NP Inter(Cohens...
Cobalt (mg/L)	n/a	0.0322	n/a	n/a	n/a	30	33.33	n/a	0.2146	NP Inter(normal...
Combined Radium 226 + 228 (pCi/L)	n/a	6.316	n/a	n/a	n/a	30	10	sqrt(x)	0.05	Inter
Fluoride (mg/L)	n/a	0.42	n/a	n/a	n/a	35	42.86	n/a	0.1661	NP Inter(Cohens...
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	30	83.33	n/a	0.2146	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	30	36.67	n/a	0.2146	NP Inter(normal...
Mercury (mg/L)	n/a	0.0001	n/a	n/a	n/a	30	76.67	n/a	0.2146	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.0409	n/a	n/a	n/a	30	63.33	n/a	0.2146	NP Inter(normal...
Selenium (mg/L)	n/a	0.00065	n/a	n/a	n/a	30	100	n/a	0.2146	NP Inter(NDs)
Thallium (mg/L)	n/a	0.00007	n/a	n/a	n/a	30	96.67	n/a	0.2146	NP Inter(NDs)

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:40 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	DGWC-40	0.04288	0.0356	0.0322	Yes	10	0	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.2362	0.1983	0.0409	Yes	10	0	ln(x)	0.01	Param.

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:40 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	DGWC-37	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWC-38	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWC-39	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWC-40	0.0004	0.000135	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	DGWA-53 (bg)	0.00039	0.000135	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	DGWA-71 (bg)	0.0007	0.000135	0.006	No	10	80	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-67	0.0023	0.000135	0.006	No	9	66.67	No	0.002	NP (Cohens/xfrm)
Antimony (mg/L)	DGWC-69	0.00039	0.000135	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	DGWA-70A ...	0.00039	0.000135	0.006	No	10	100	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-68A	0.0008	0.000135	0.006	No	9	88.89	No	0.002	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.0008	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.0008	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.0008588	0.0003394	0.01	No	11	54.55	No	0.01	Param.
Arsenic (mg/L)	DGWC-40	0.0008	0.000175	0.01	No	11	81.82	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWA-53 (bg)	0.0009	0.000175	0.01	No	10	60	No	0.011	NP (Cohens/xfrm)
Arsenic (mg/L)	DGWA-71 (bg)	0.0004	0.000175	0.01	No	11	81.82	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.000285	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.05326	0.008963	0.01	No	13	0	x^(1/3)	0.01	Param.
Arsenic (mg/L)	DGWA-70A ...	0.000285	0.000175	0.01	No	11	90.91	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-68A	0.000285	0.000175	0.01	No	12	91.67	No	0.01	NP (NDs)
Barium (mg/L)	DGWC-37	0.1196	0.09377	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03404	0.0326	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09917	0.08423	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01796	0.0166	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWA-53 (bg)	0.1707	0.1025	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWA-71 (bg)	0.03664	0.0264	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.1153	0.1025	2	No	10	0	ln(x)	0.01	Param.
Barium (mg/L)	DGWC-69	0.1085	0.07258	2	No	11	0	No	0.01	Param.
Barium (mg/L)	DGWA-70A ...	0.03692	0.02636	2	No	10	0	No	0.01	Param.
Barium (mg/L)	DGWC-68A	0.09024	0.0862	2	No	10	0	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.00006594	0.00003206	0.004	No	10	70	No	0.01	Param.
Beryllium (mg/L)	DGWC-38	0.000045	0.000025	0.004	No	10	90	No	0.011	NP (NDs)
Beryllium (mg/L)	DGWC-39	0.000045	0.000025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003217	0.002743	0.004	No	10	0	No	0.01	Param.
Beryllium (mg/L)	DGWA-53 (bg)	0.000125	0.000025	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWA-71 (bg)	0.0001055	0.00007281	0.004	No	10	40	No	0.01	Param.
Beryllium (mg/L)	DGWC-67	0.000045	0.000025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.00005632	0.00003496	0.004	No	11	72.73	No	0.01	Param.
Beryllium (mg/L)	DGWA-70A ...	0.000095	0.000035	0.004	No	10	60	No	0.011	NP (Cohens/xfrm)
Beryllium (mg/L)	DGWC-68A	0.000045	0.000025	0.004	No	10	90	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-37	0.0001	0.0000465	0.005	No	10	70	No	0.011	NP (normality)
Cadmium (mg/L)	DGWC-38	0.0002469	0.0001771	0.005	No	10	0	No	0.01	Param.
Cadmium (mg/L)	DGWC-39	0.000055	0.00003	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-40	0.0008626	0.0007434	0.005	No	10	0	No	0.01	Param.
Cadmium (mg/L)	DGWA-53 (bg)	0.00013	0.00003	0.005	No	11	81.82	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWA-71 (bg)	0.000055	0.00003	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-67	0.000055	0.00003	0.005	No	10	90	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-69	0.0002	0.0000465	0.005	No	11	54.55	No	0.006	NP (normality)
Cadmium (mg/L)	DGWA-70A ...	0.000055	0.00003	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	DGWC-68A	0.00019	0.00005	0.005	No	10	40	No	0.011	NP (normality)

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:40 PM

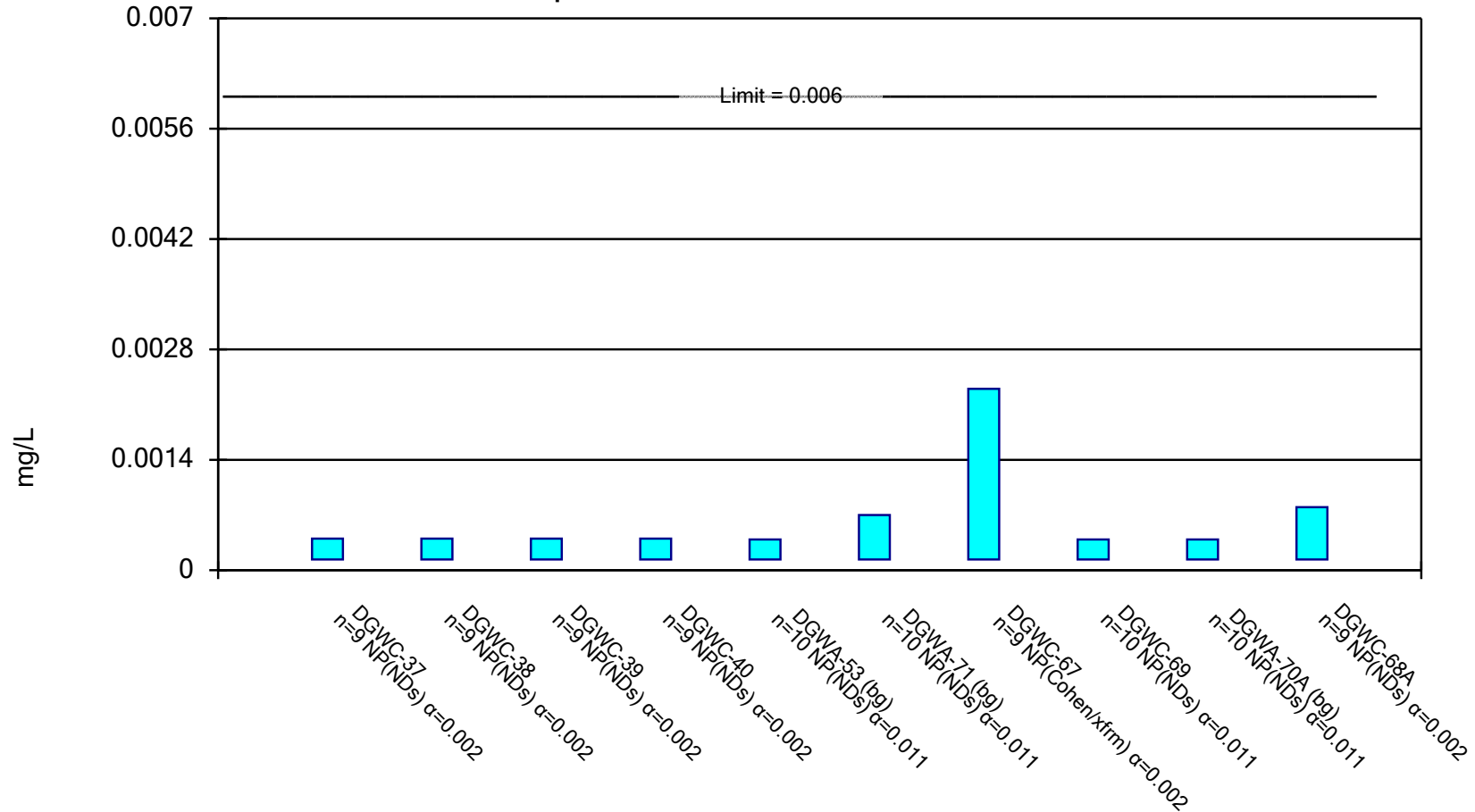
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Chromium (mg/L)	DGWC-37	0.0008	0.00015	0.1	No	10	90	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-38	0.0008	0.00015	0.1	No	10	80	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-39	0.0008	0.00015	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-40	0.002212	0.0006966	0.1	No	10	50	No	0.01	Param.
Chromium (mg/L)	DGWA-53 (bg)	0.0008	0.00015	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	DGWA-71 (bg)	0.0023	0.00025	0.1	No	10	50	No	0.011	NP (Cohens/xfrm)
Chromium (mg/L)	DGWC-67	0.0008	0.000195	0.1	No	10	80	No	0.011	NP (NDs)
Chromium (mg/L)	DGWC-69	0.0008	0.00015	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	DGWA-70A ...	0.0008	0.0005	0.1	No	9	33.33	No	0.002	NP (normality)
Chromium (mg/L)	DGWC-68A	0.0008	0.00015	0.1	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.0003	0.00015	0.0322	No	10	70	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-38	0.0017	0.0015	0.0322	No	10	0	No	0.011	NP (normality)
Cobalt (mg/L)	DGWC-39	0.006816	0.005984	0.0322	No	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04288	0.0356	0.0322	Yes	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWA-53 (bg)	0.02921	0.01633	0.0322	No	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWA-71 (bg)	0.0016	0.00015	0.0322	No	10	50	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-67	0.004273	0.001347	0.0322	No	10	0	No	0.01	Param.
Cobalt (mg/L)	DGWC-69	0.0028	0.00015	0.0322	No	11	45.45	No	0.006	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWA-70A ...	0.0014	0.00015	0.0322	No	10	50	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	DGWC-68A	0.0005	0.00015	0.0322	No	10	70	No	0.011	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.128	0.391	6.316	No	10	10	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.49	0.5381	6.316	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.547	0.5685	6.316	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.596	0.2546	6.316	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWA-53 (bg)	4.988	2.538	6.316	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWA-71 (bg)	1.74	0.1188	6.316	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	1.318	0.42	6.316	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.696	0.9393	6.316	No	11	9.091	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWA-70A ...	1.421	0.4001	6.316	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.543	0.3597	6.316	No	10	0	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.179	0.0437	4	No	11	9.091	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-38	0.27	0.0145	4	No	11	18.18	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	DGWC-39	0.2467	0.09183	4	No	11	0	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-40	0.431	0.149	4	No	11	0	No	0.01	Param.
Fluoride (mg/L)	DGWA-53 (bg)	0.2001	0.0525	4	No	12	8.333	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWA-71 (bg)	0.015	0.007	4	No	12	75	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-67	0.25	0.002	4	No	11	36.36	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	DGWC-69	0.2132	0.1061	4	No	12	0	No	0.01	Param.
Fluoride (mg/L)	DGWA-70A ...	0.06	0.005	4	No	11	45.45	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	DGWC-68A	0.1879	0.07489	4	No	11	0	ln(x)	0.01	Param.
Lead (mg/L)	DGWC-37	0.0025	0.000061	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-38	0.0025	0.000074	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-39	0.0025	0.00008	0.005	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-40	0.0025	0.00007	0.005	No	10	60	No	0.011	NP (normality)
Lead (mg/L)	DGWA-53 (bg)	0.0025	0.0025	0.005	No	10	100	No	0.011	NP (NDs)
Lead (mg/L)	DGWA-71 (bg)	0.0025	0.00008	0.005	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-67	0.0025	0.00009	0.005	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	DGWC-69	0.0025	0.00009	0.005	No	11	81.82	No	0.006	NP (NDs)
Lead (mg/L)	DGWA-70A ...	0.0025	0.00007	0.005	No	10	60	No	0.011	NP (normality)
Lead (mg/L)	DGWC-68A	0.0025	0.0025	0.005	No	10	100	No	0.011	NP (NDs)

Confidence Interval

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 3/20/2020, 12:41 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (mg/L)	DGWC-37	0.015	0.0018	0.03	No	10	30	No	0.011	NP (normality)
Lithium (mg/L)	DGWC-38	0.003452	0.003168	0.03	No	10	0	No	0.01	Param.
Lithium (mg/L)	DGWC-39	0.015	0.015	0.03	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	DGWC-40	0.0024	0.002	0.03	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	DGWA-53 (bg)	0.01026	0.008098	0.03	No	10	0	No	0.01	Param.
Lithium (mg/L)	DGWA-71 (bg)	0.015	0.0012	0.03	No	10	20	No	0.011	NP (normality)
Lithium (mg/L)	DGWC-67	0.005023	0.004197	0.03	No	10	0	No	0.01	Param.
Lithium (mg/L)	DGWC-69	0.00323	0.002661	0.03	No	11	0	No	0.01	Param.
Lithium (mg/L)	DGWA-70A ...	0.015	0.002	0.03	No	10	90	No	0.011	NP (NDs)
Lithium (mg/L)	DGWC-68A	0.015	0.0016	0.03	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-37	0.00007	0.000018	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-38	0.00007	0.000018	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-39	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-40	0.00007	0.000018	0.002	No	10	70	No	0.011	NP (normality)
Mercury (mg/L)	DGWA-53 (bg)	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWA-71 (bg)	0.00007482	0.00002278	0.002	No	10	60	No	0.01	Param.
Mercury (mg/L)	DGWC-67	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-69	0.00007	0.000018	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	DGWA-70A ...	0.00007	0.000018	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.00007	0.000018	0.002	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-37	0.00095	0.0003	0.0409	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.001109	0.0006709	0.0409	No	10	70	No	0.01	Param.
Molybdenum (mg/L)	DGWC-39	0.00095	0.0003	0.0409	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-40	0.00095	0.0003	0.0409	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWA-53 (bg)	0.03752	0.02716	0.0409	No	10	0	No	0.01	Param.
Molybdenum (mg/L)	DGWA-71 (bg)	0.00095	0.0003	0.0409	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-67	0.00095	0.0003	0.0409	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-69	0.01559	0.006064	0.0409	No	11	0	x^(1/3)	0.01	Param.
Molybdenum (mg/L)	DGWA-70A ...	0.00095	0.0003	0.0409	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.2362	0.1983	0.0409	Yes	10	0	ln(x)	0.01	Param.
Selenium (mg/L)	DGWC-37	0.0009	0.0005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-38	0.0009	0.0005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-39	0.0009	0.0005	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-40	0.003323	0.001417	0.05	No	10	10	No	0.01	Param.
Selenium (mg/L)	DGWA-53 (bg)	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWA-71 (bg)	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-67	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-69	0.0009	0.00065	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	DGWA-70A ...	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	DGWC-68A	0.0009	0.00065	0.05	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-37	0.0001	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-38	0.0001	0.00007	0.002	No	10	50	No	0.011	NP (normality)
Thallium (mg/L)	DGWC-39	0.0001	0.000026	0.002	No	10	60	No	0.011	NP (normality)
Thallium (mg/L)	DGWC-40	0.00008825	0.00005095	0.002	No	10	60	No	0.01	Param.
Thallium (mg/L)	DGWA-53 (bg)	0.00007	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWA-71 (bg)	0.00007	0.000025	0.002	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-67	0.00007	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-69	0.00007	0.000025	0.002	No	11	100	No	0.006	NP (NDs)
Thallium (mg/L)	DGWA-70A ...	0.00007	0.000025	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.00007	0.000025	0.002	No	10	90	No	0.011	NP (NDs)

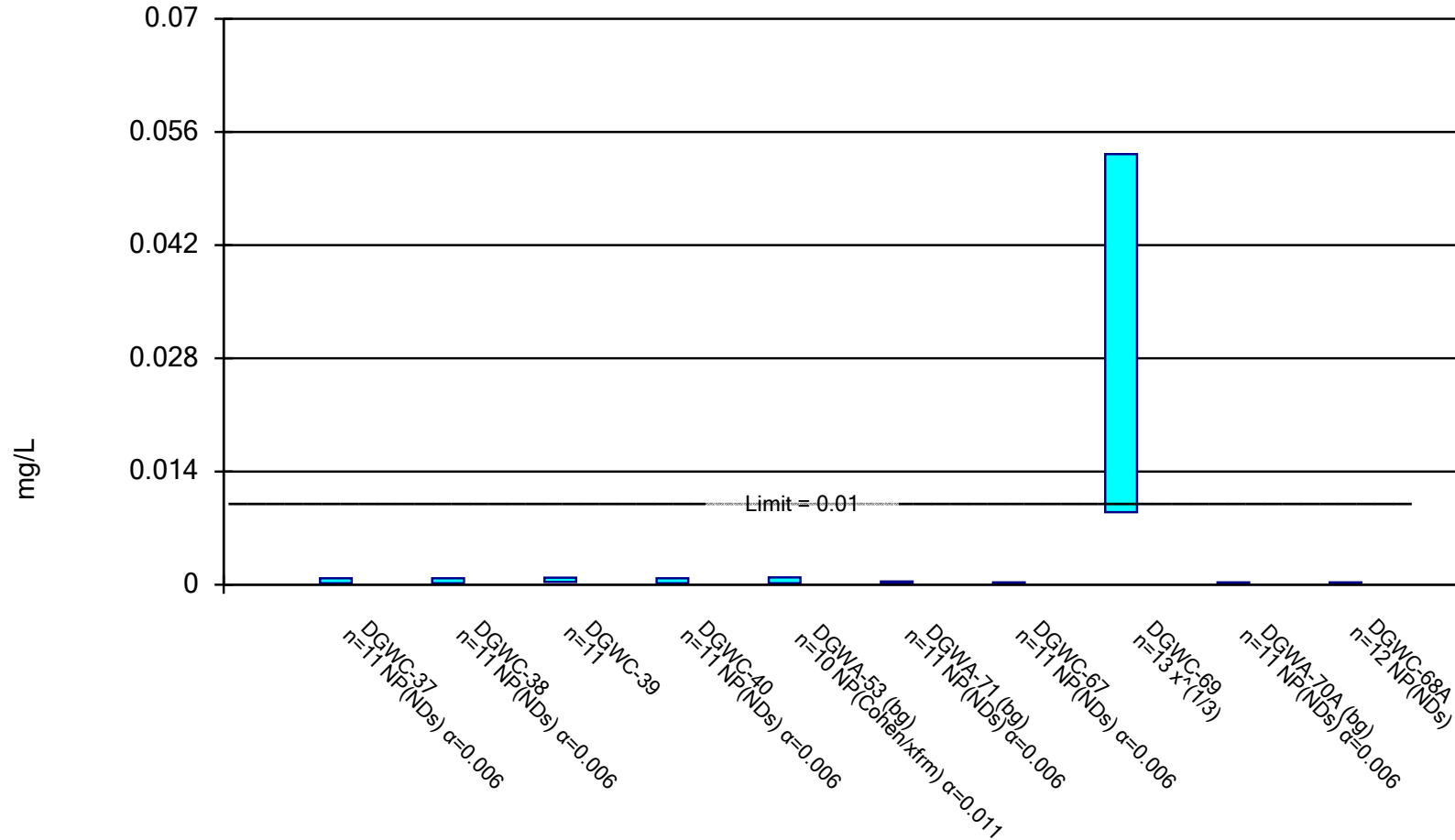
Non-Parametric Confidence Interval Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 3/20/2020 12:37 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

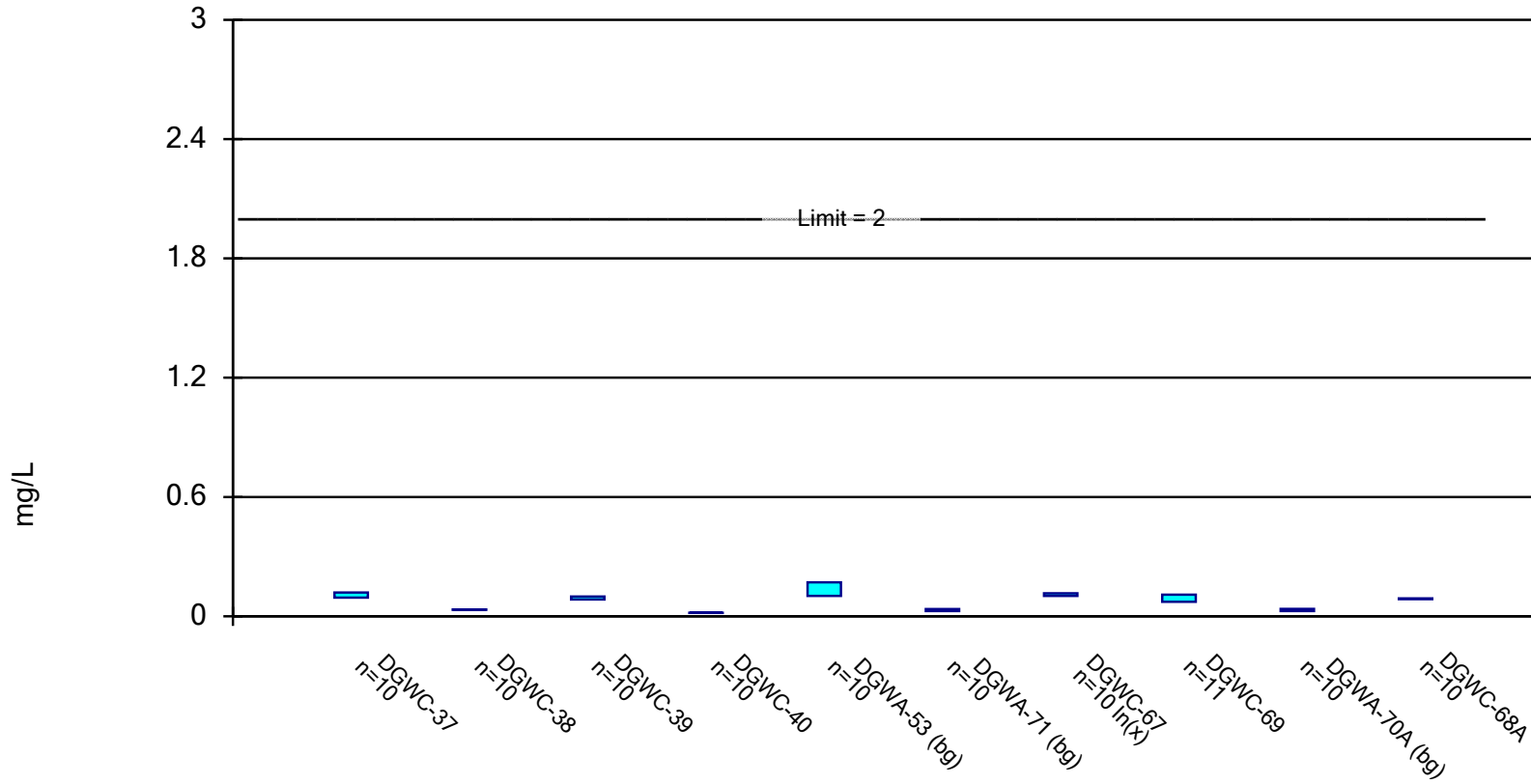
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 3/20/2020 12:37 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric Confidence Interval

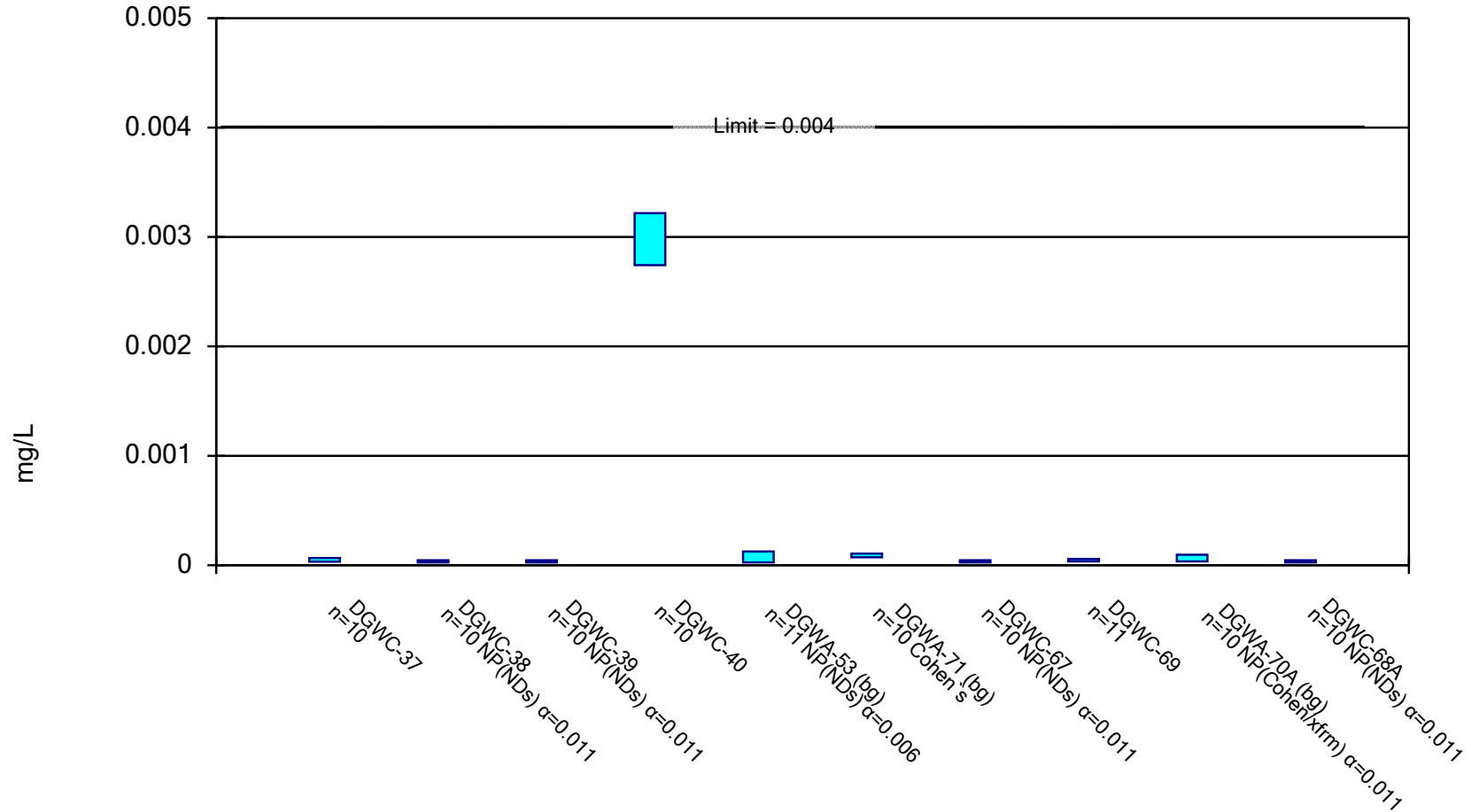
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 3/20/2020 12:37 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

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.

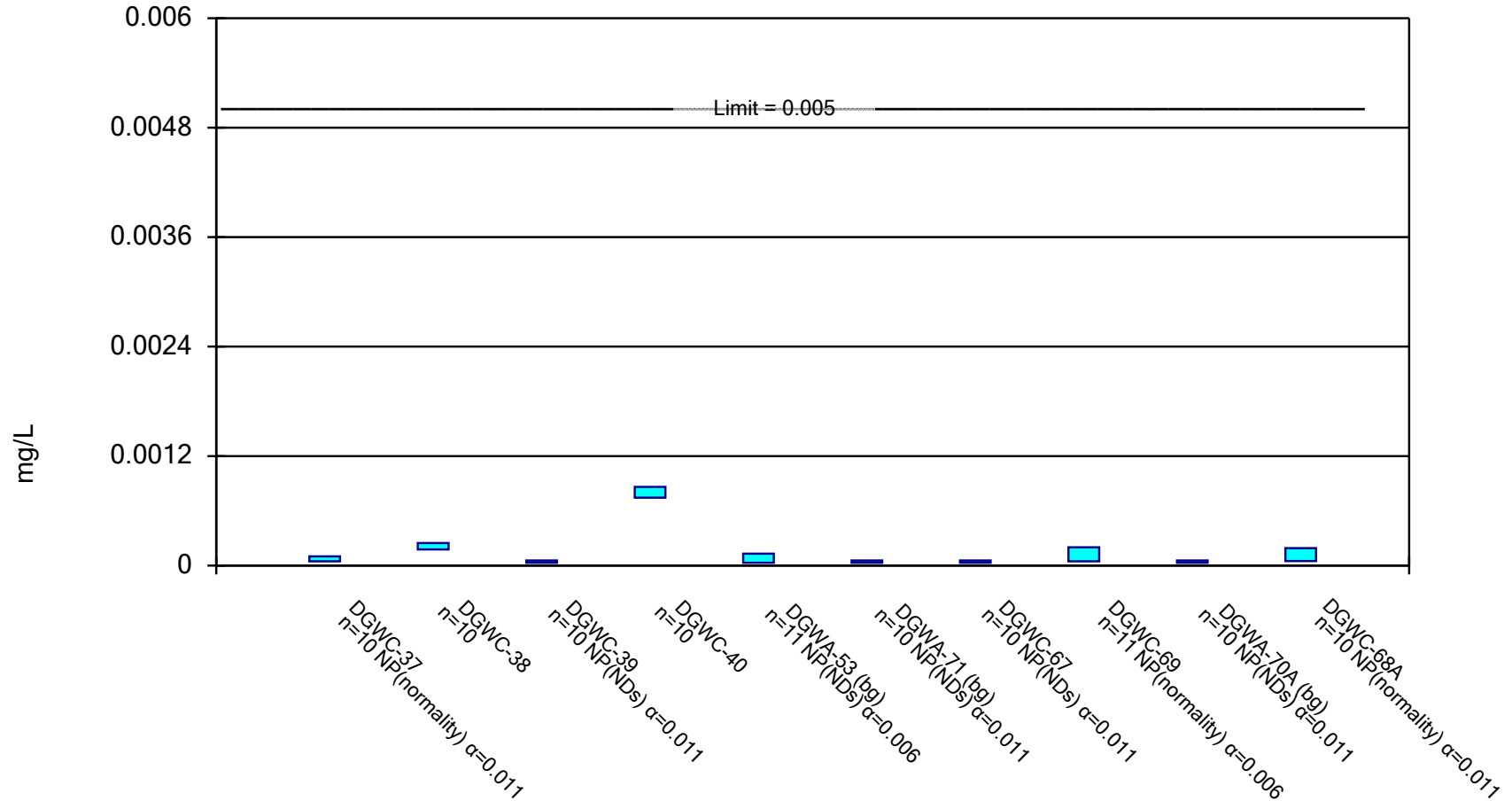


Constituent: Beryllium Analysis Run 3/20/2020 12:37 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

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.

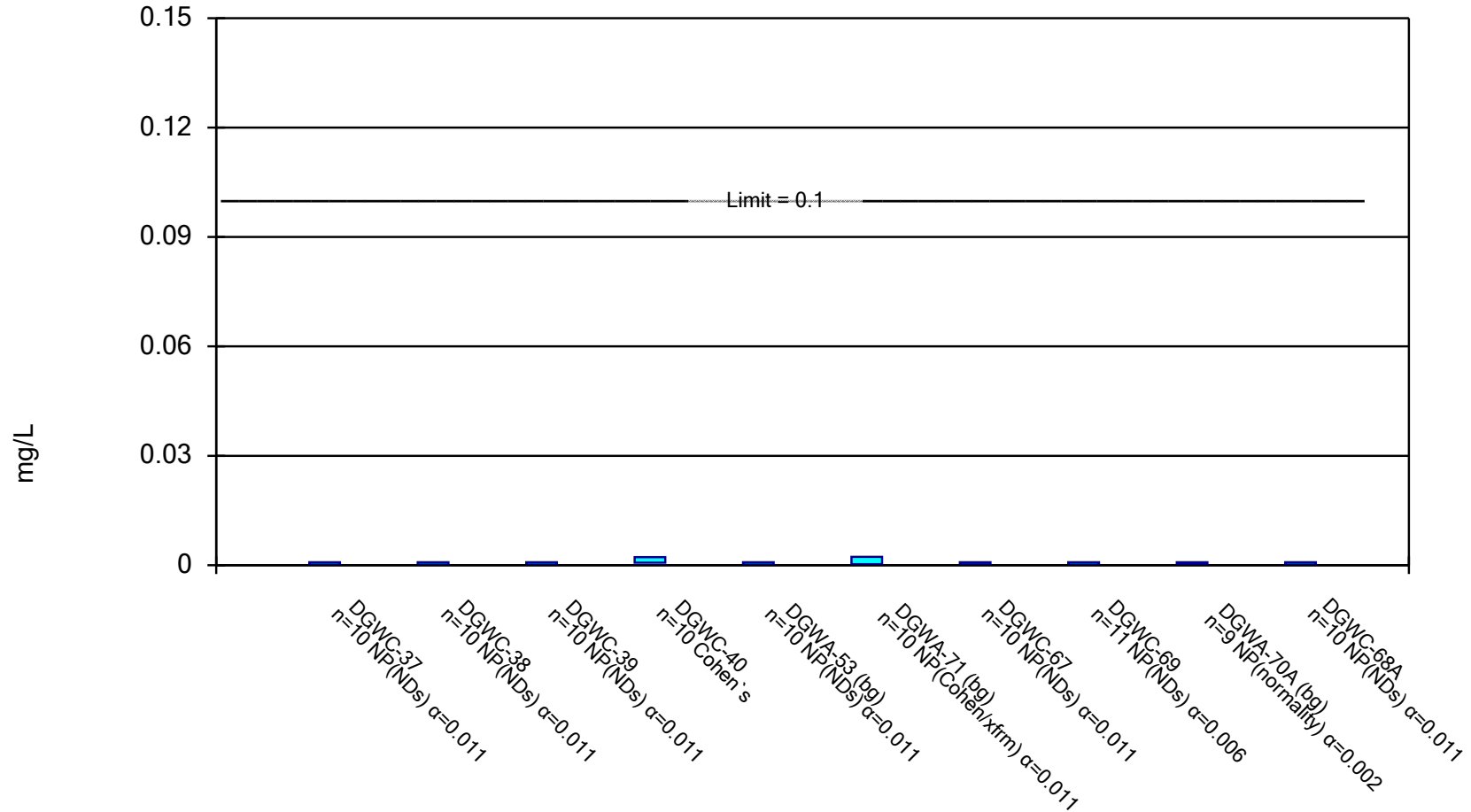


Constituent: Cadmium Analysis Run 3/20/2020 12:37 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

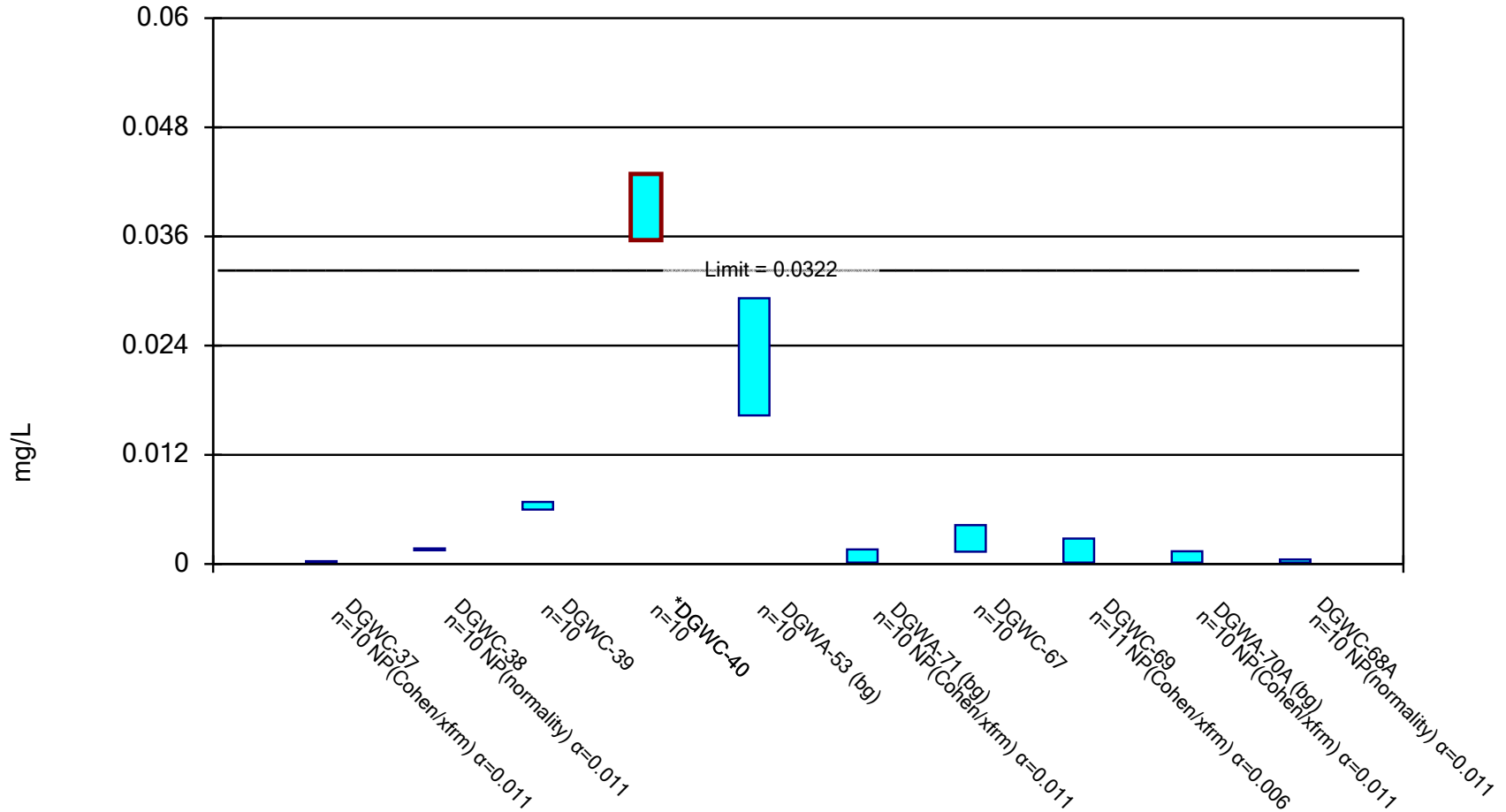
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

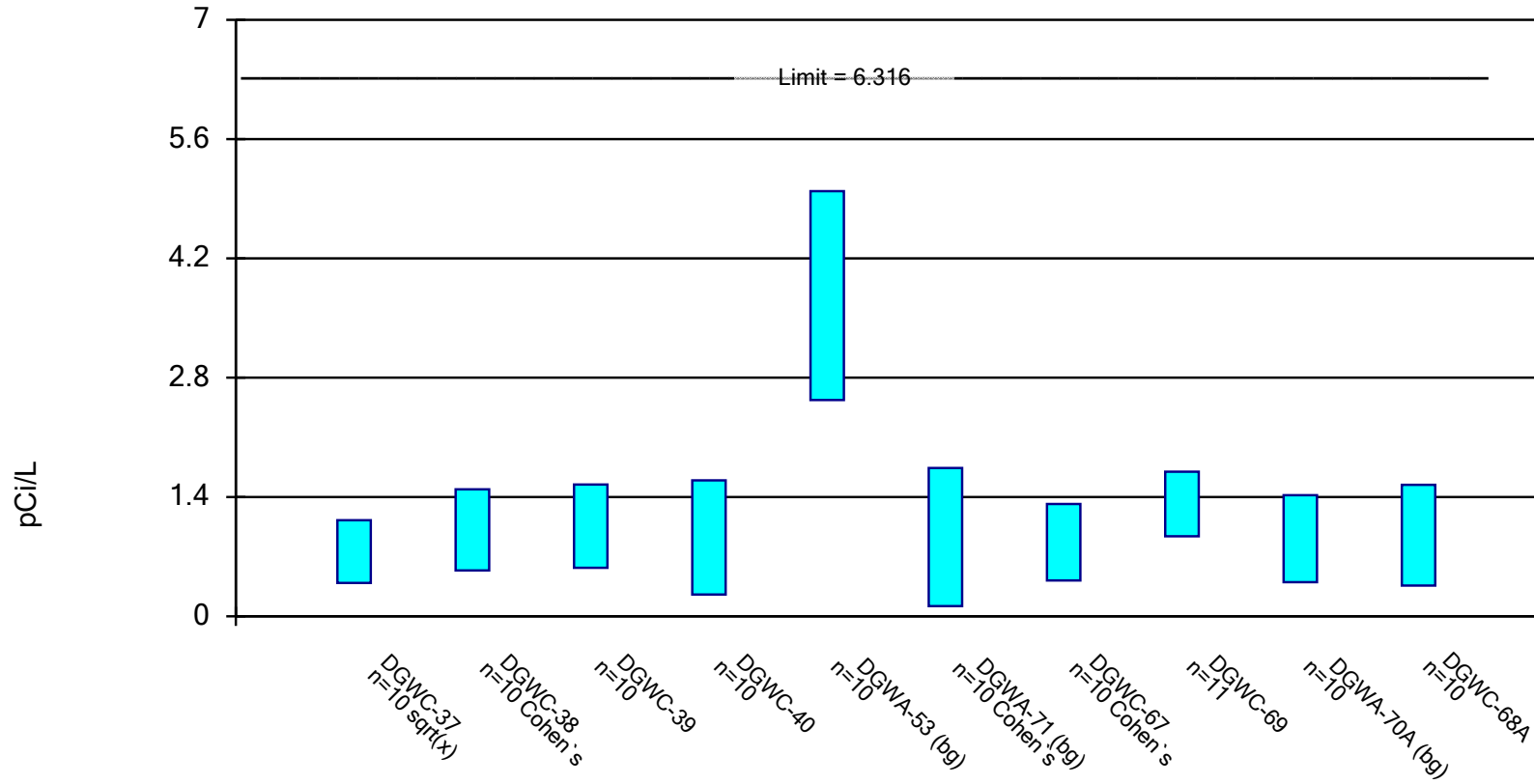
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric Confidence Interval

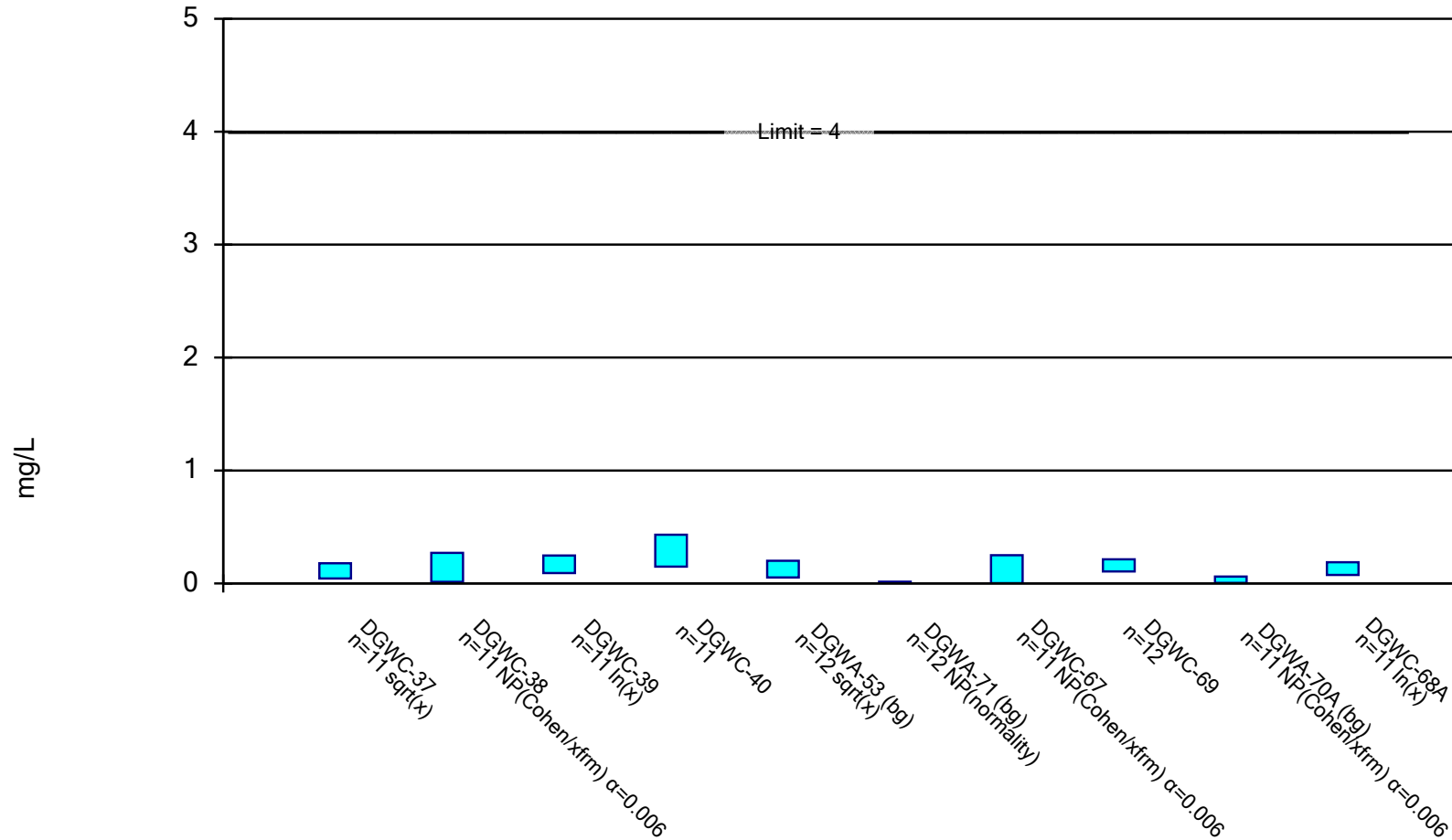
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

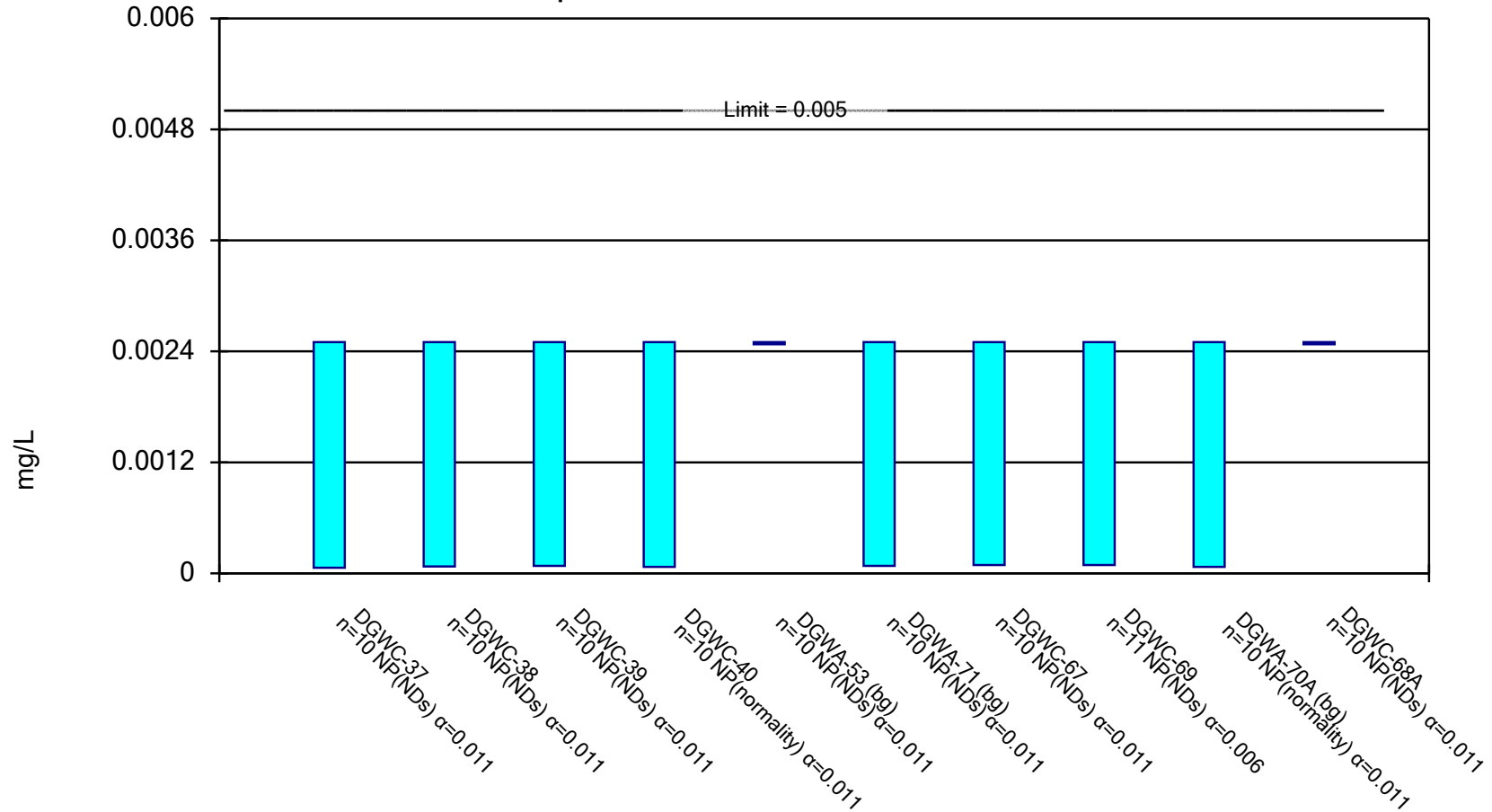
Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

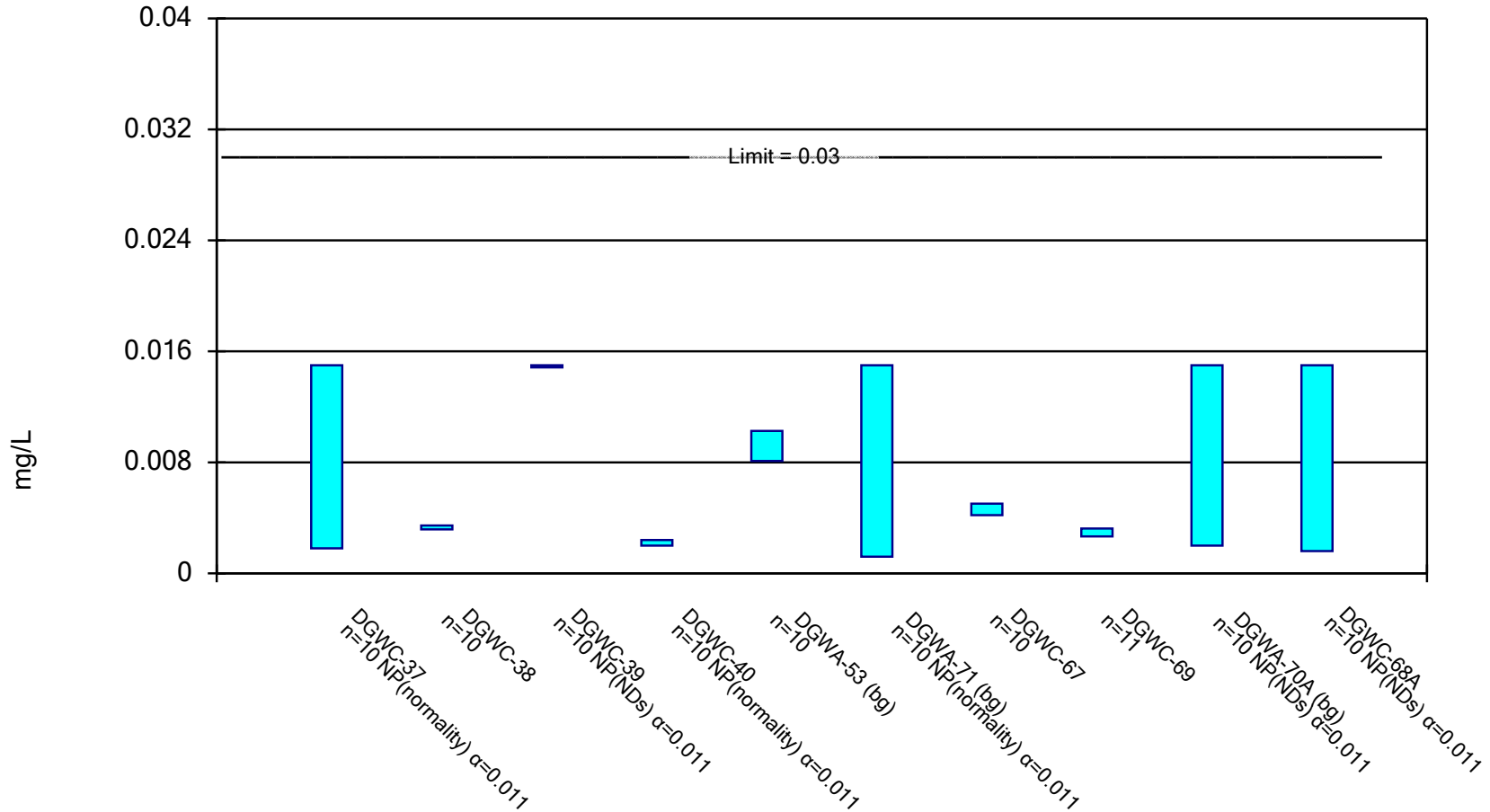
Non-Parametric Confidence Interval Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

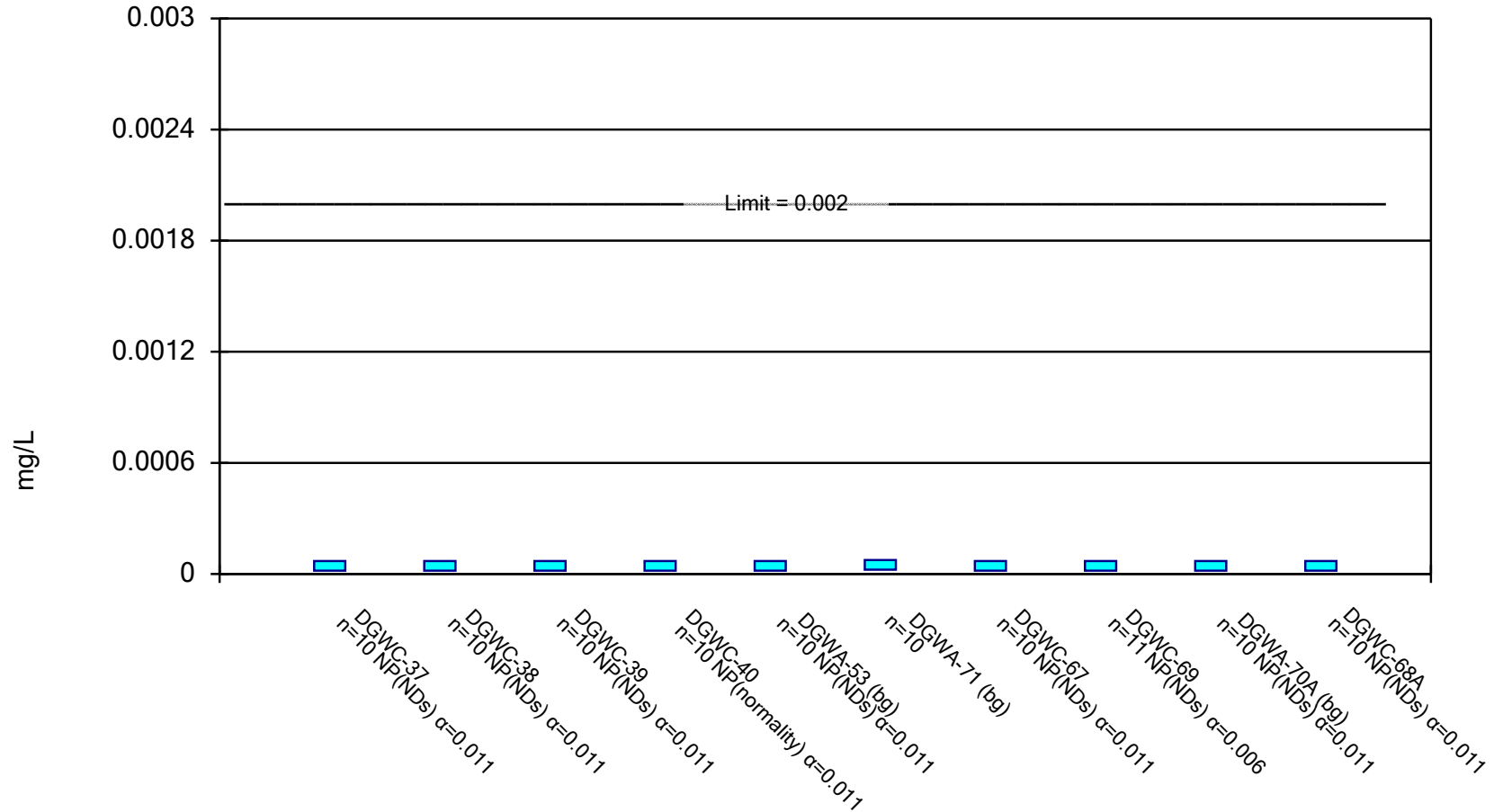
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

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.

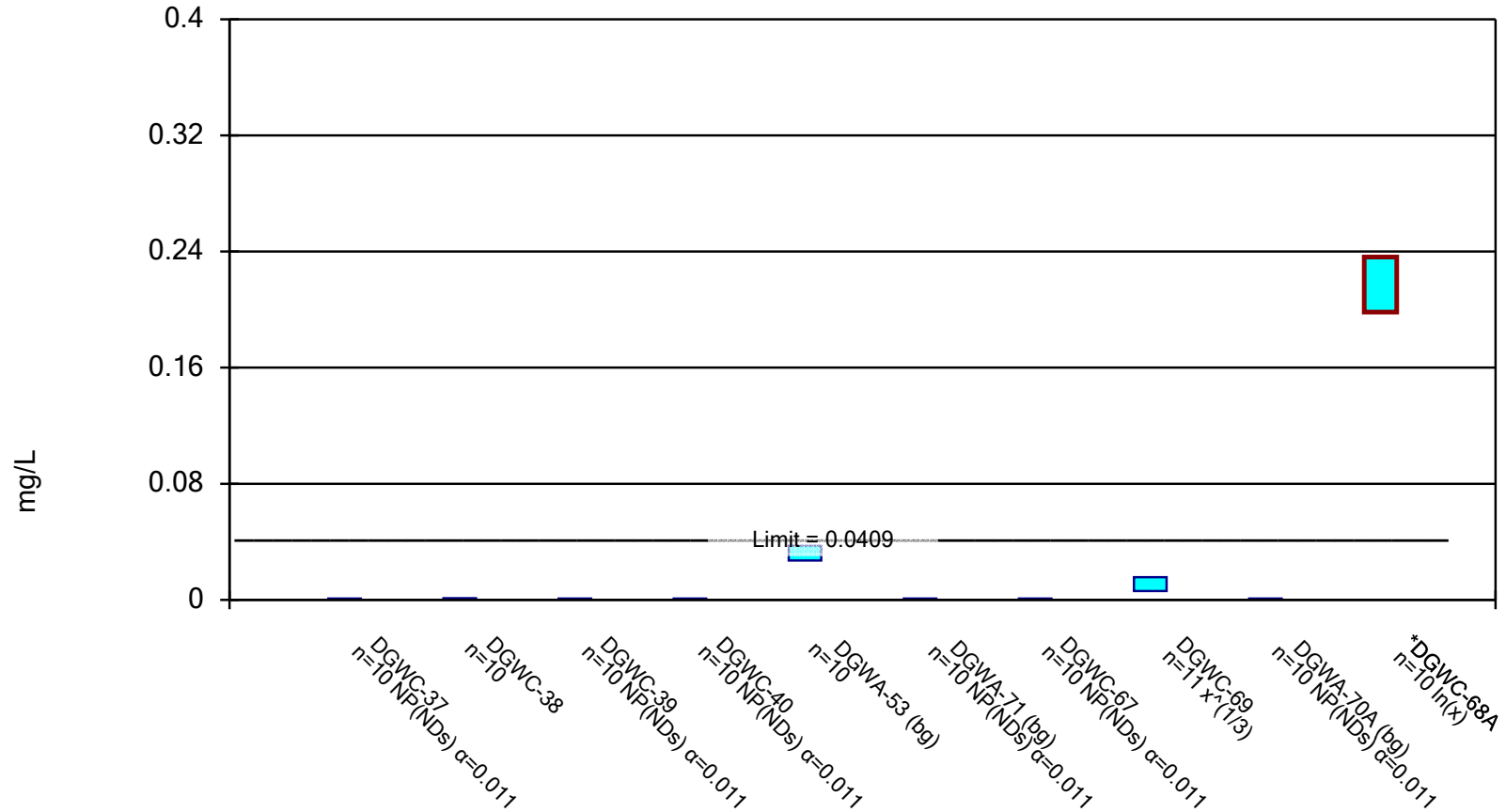


Constituent: Mercury Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

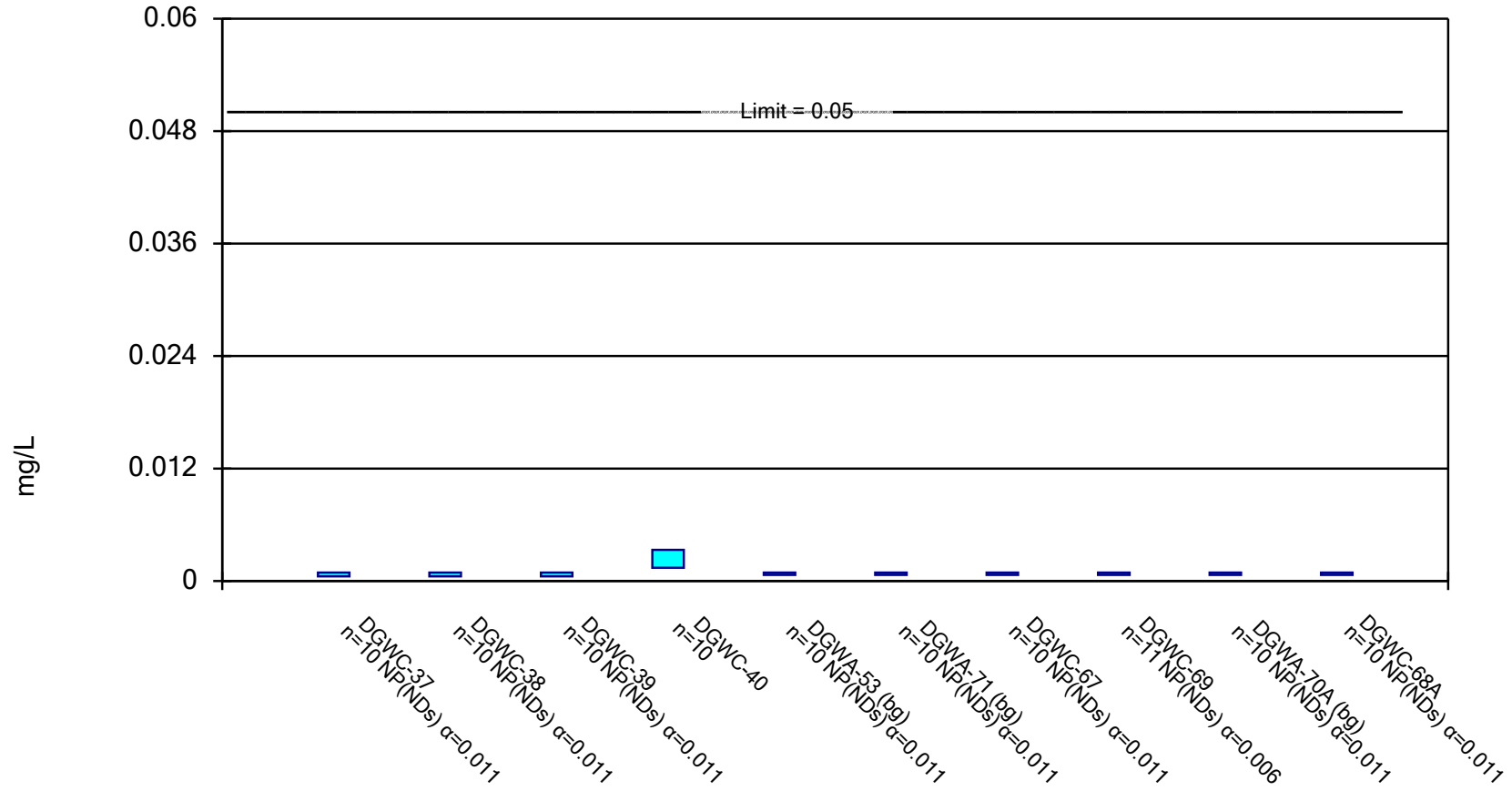
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

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.

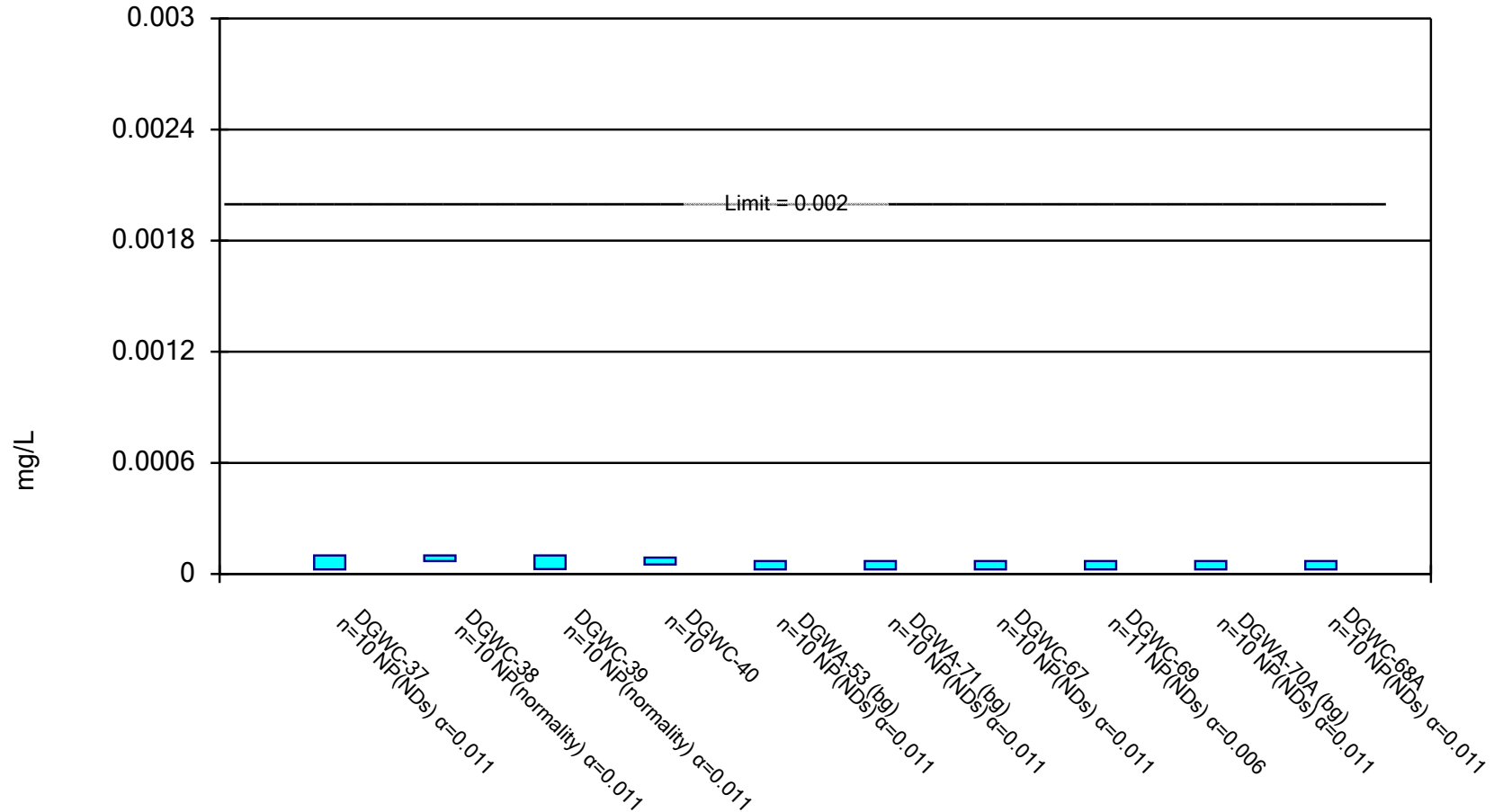


Constituent: Selenium Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1

McDonough Client: Golder Associates Data: McDonough Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

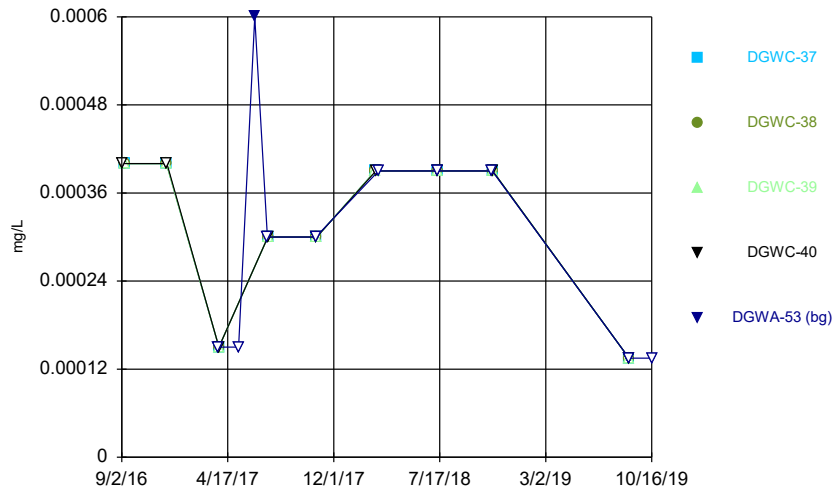
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Thallium Analysis Run 3/20/2020 12:38 PM View: APPIV_AP1

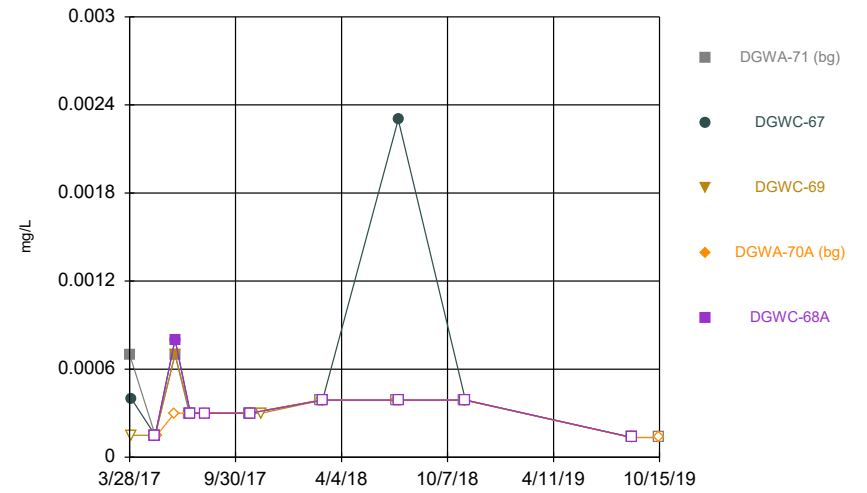
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



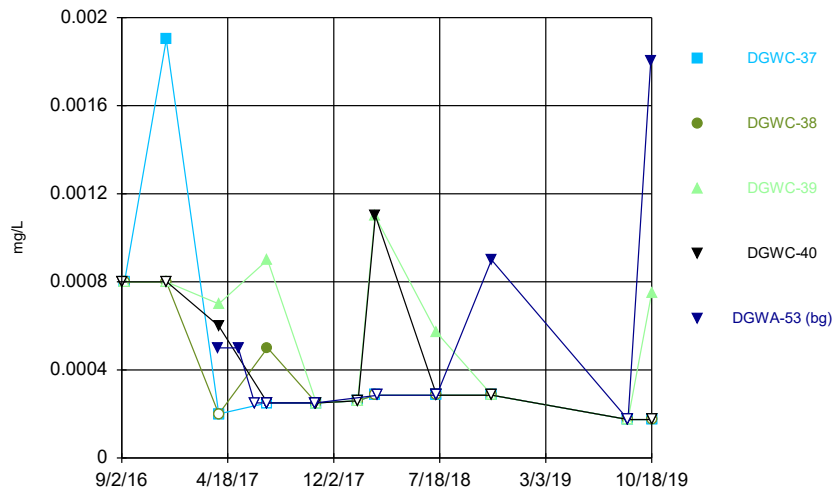
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



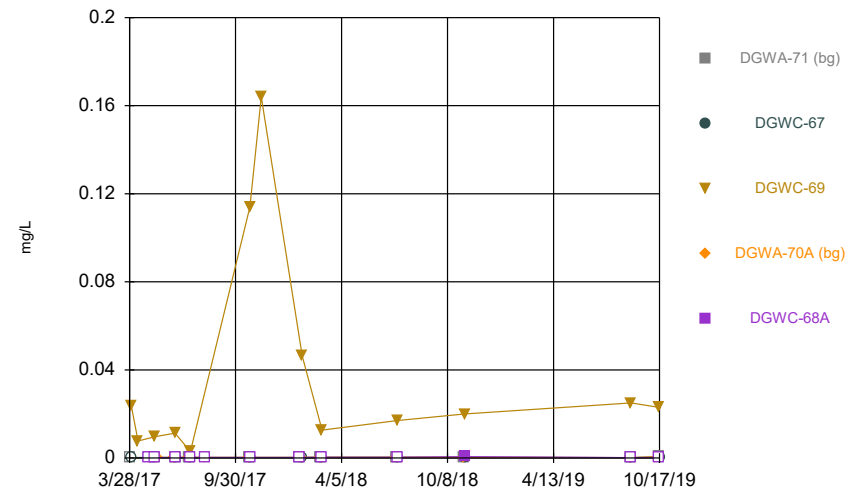
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



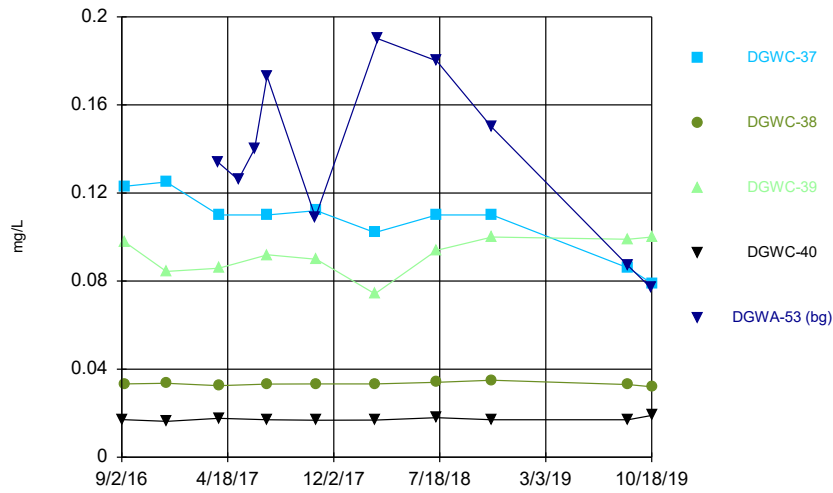
Constituent: Arsenic Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



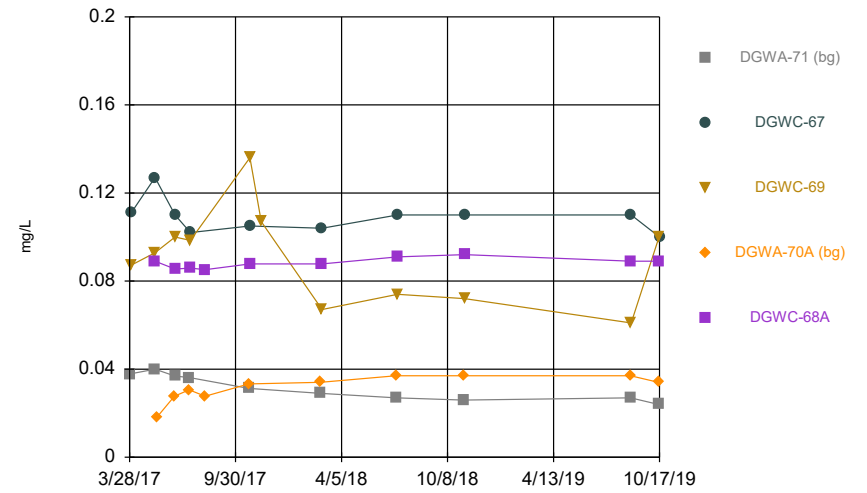
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



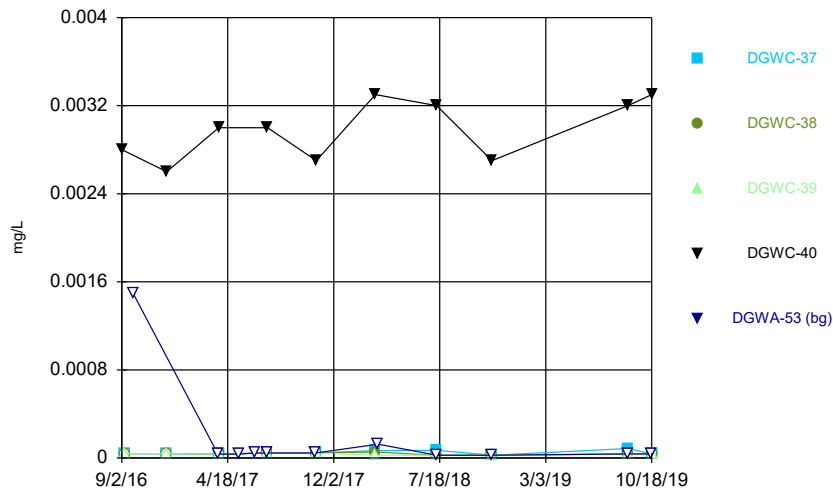
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



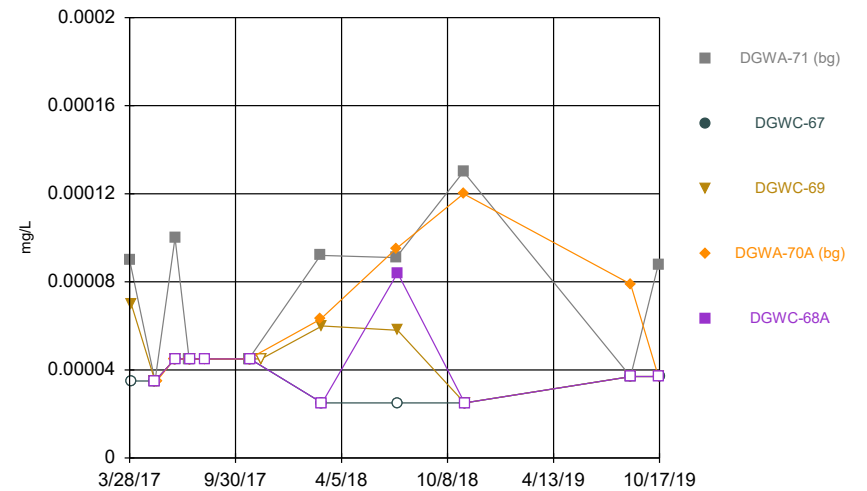
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



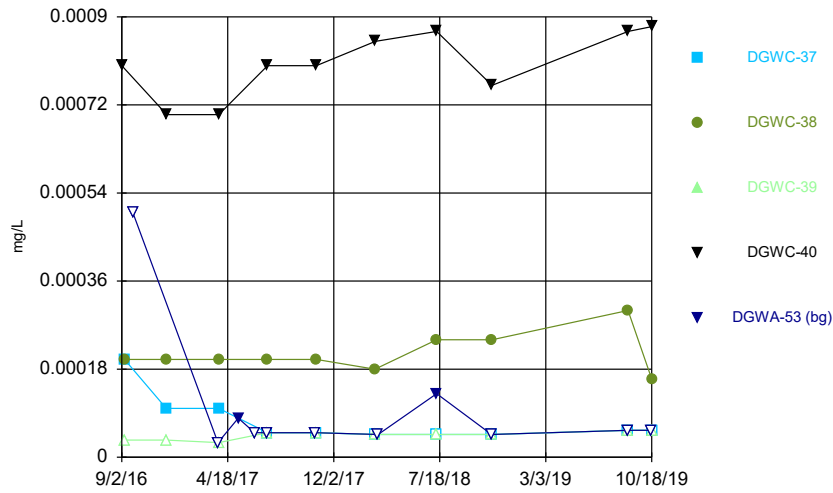
Constituent: Beryllium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



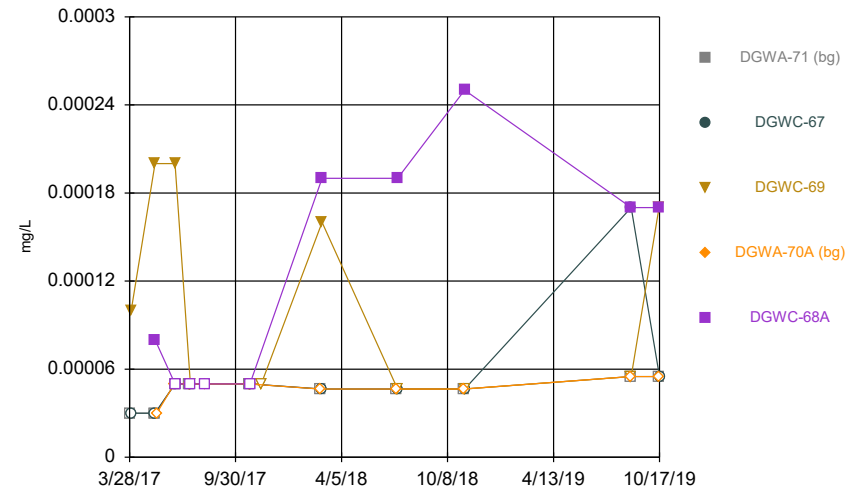
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



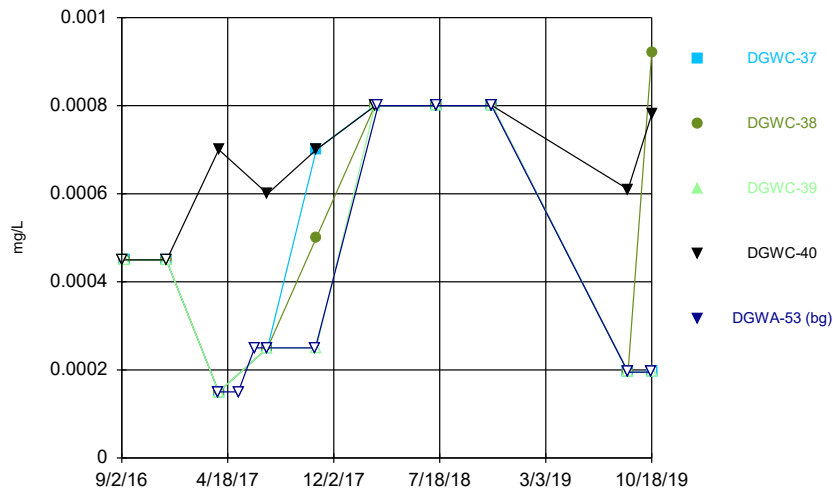
Constituent: Cadmium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



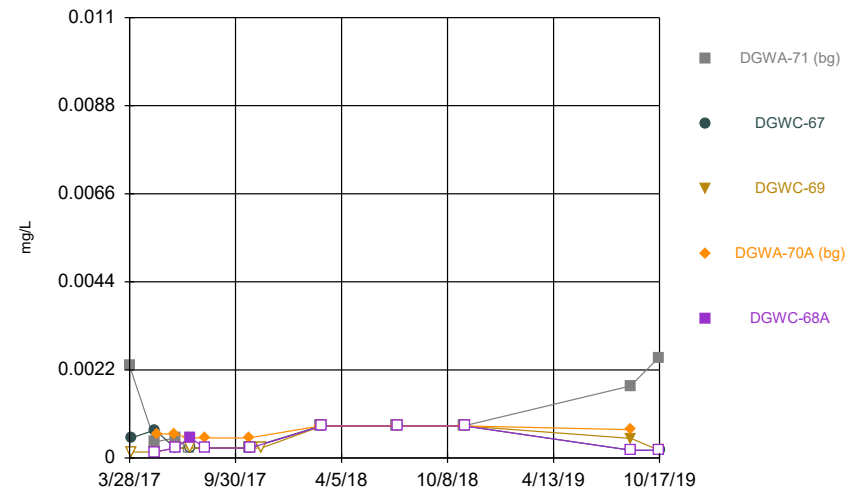
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



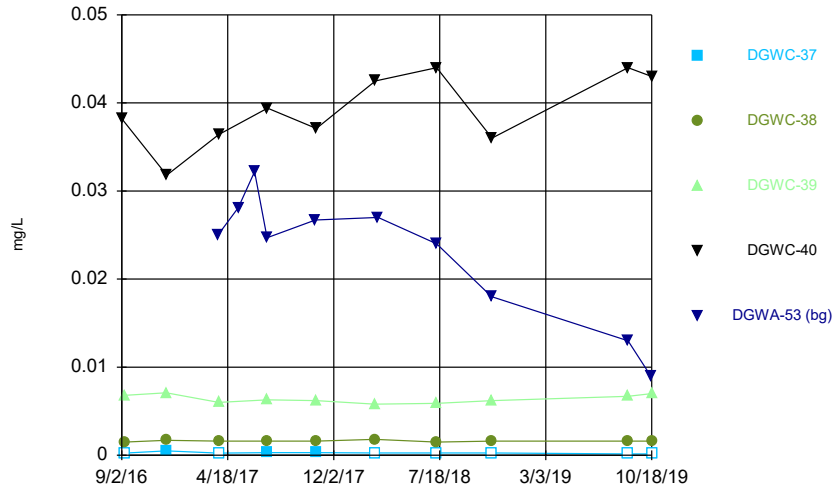
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



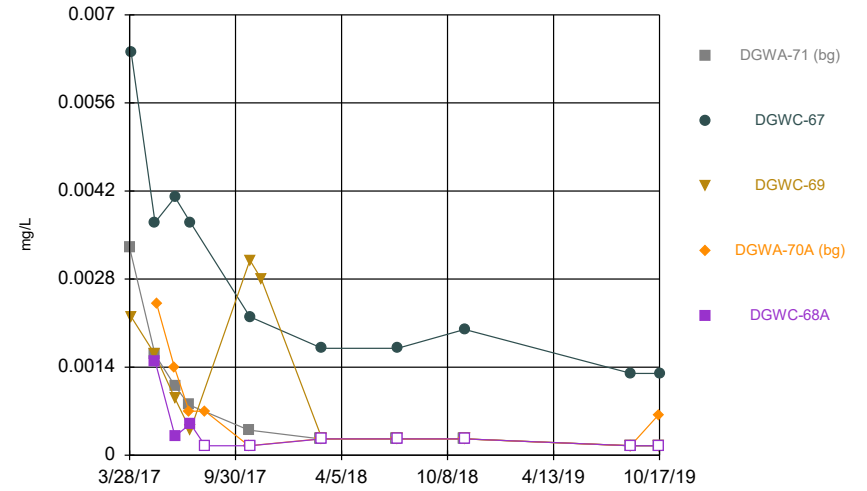
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



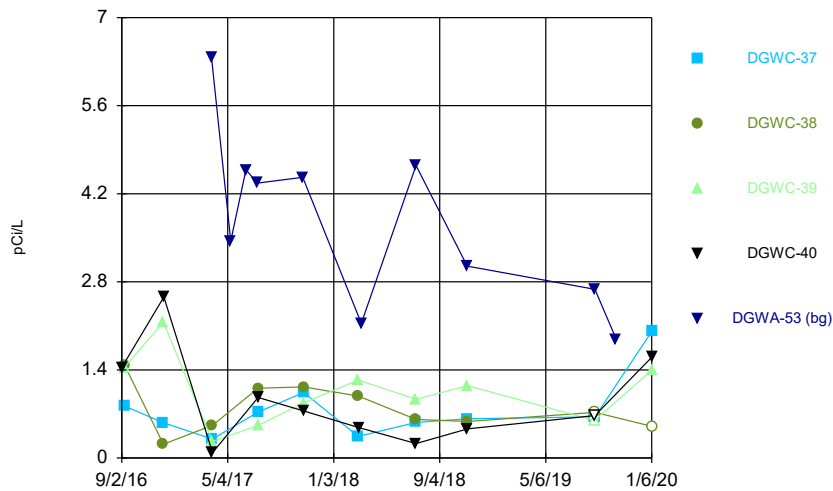
Constituent: Cobalt Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



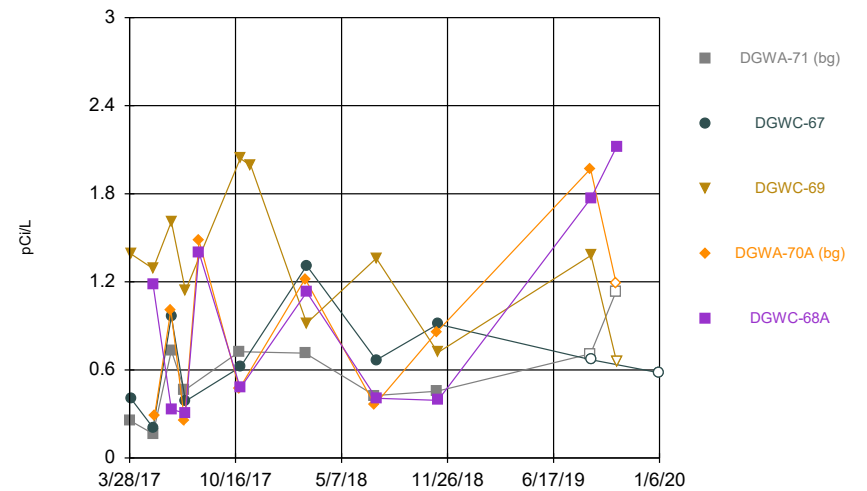
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



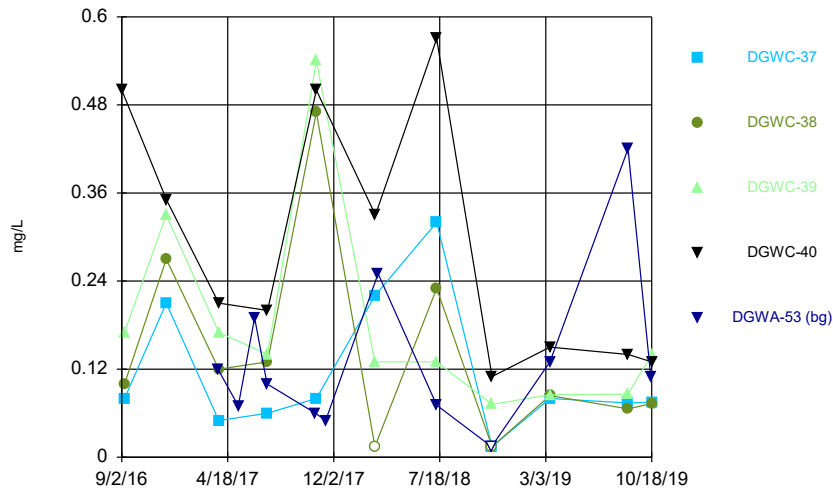
Constituent: Combined Radium 226 + 228 Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



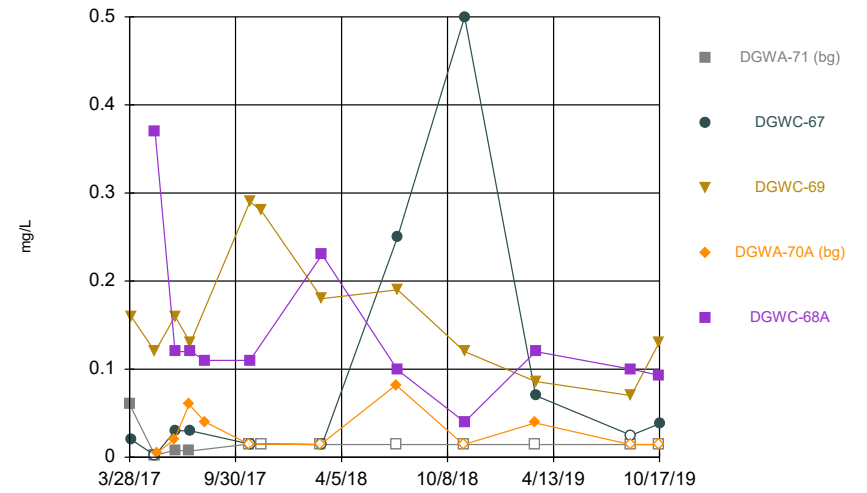
Constituent: Combined Radium 226 + 228 Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



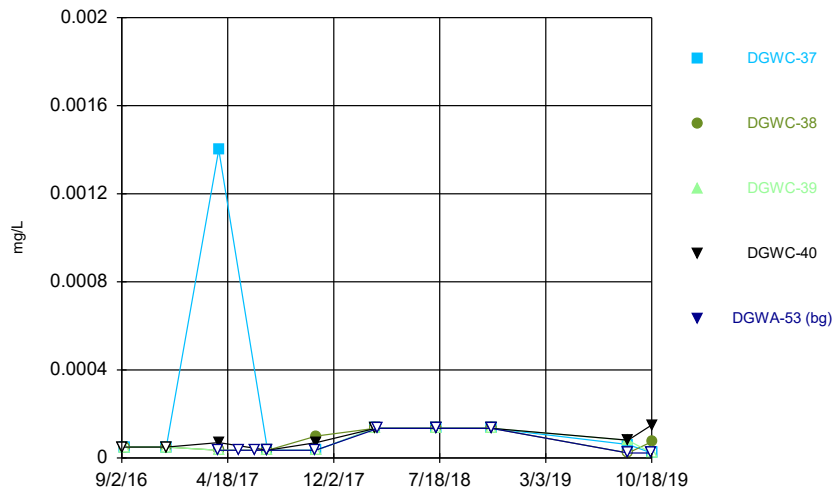
Constituent: Fluoride Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



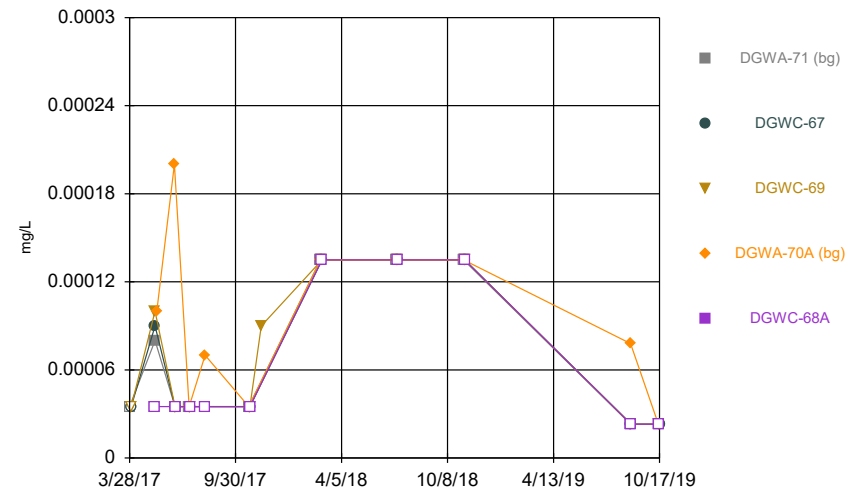
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



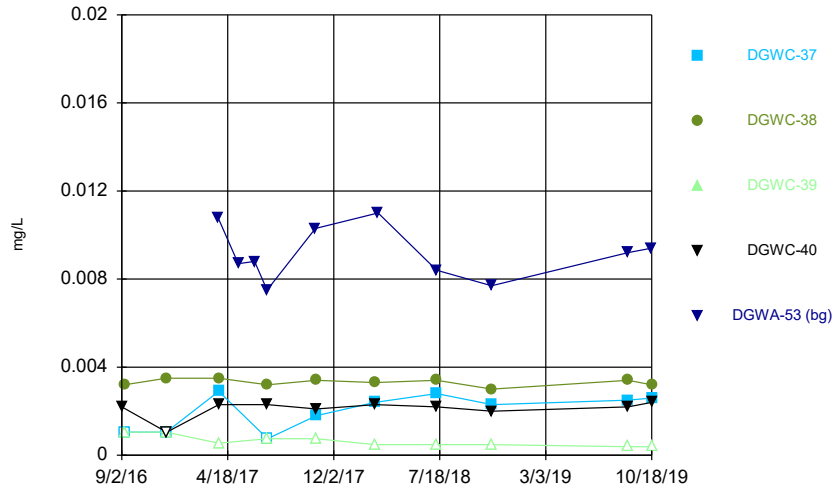
Constituent: Lead Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



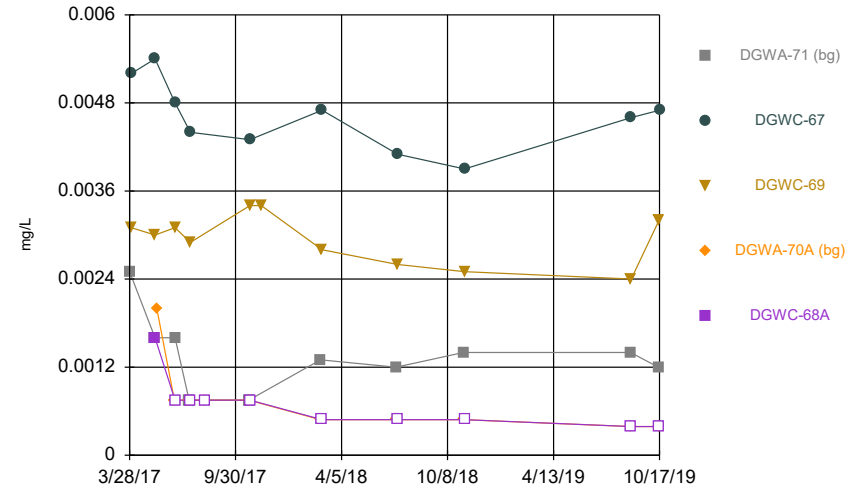
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



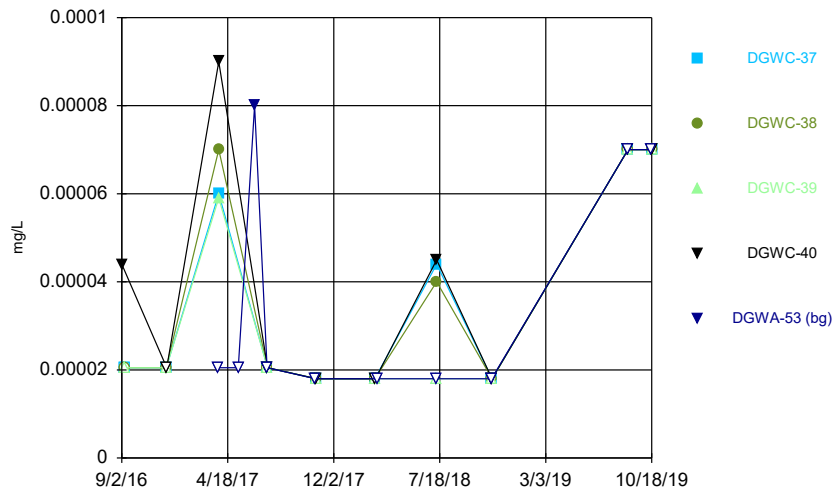
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



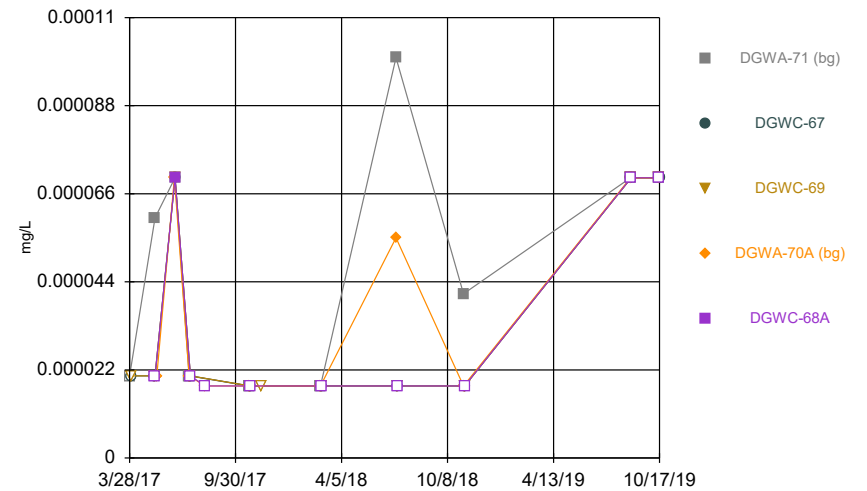
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



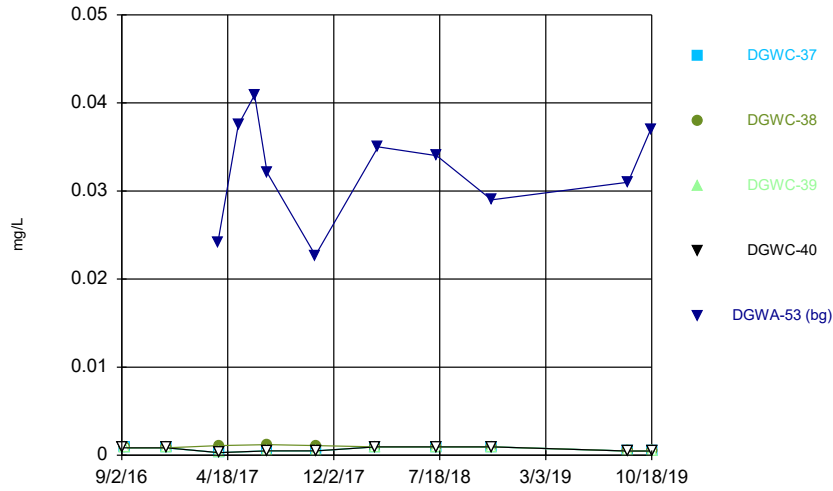
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



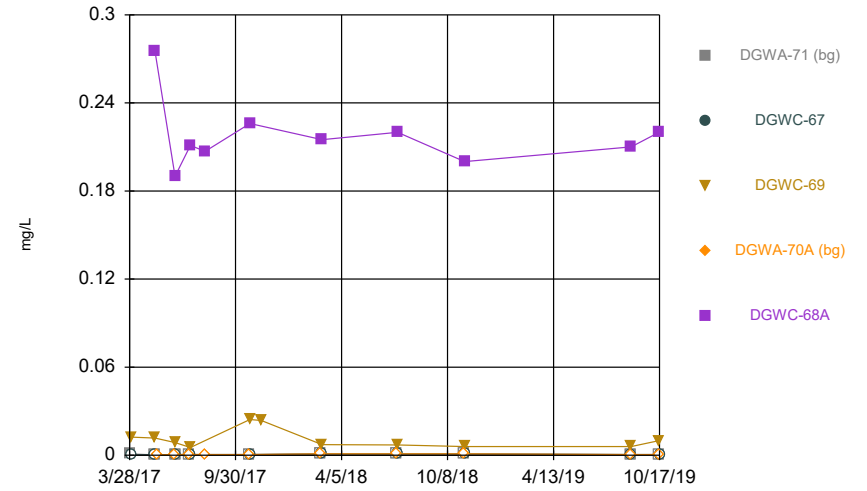
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



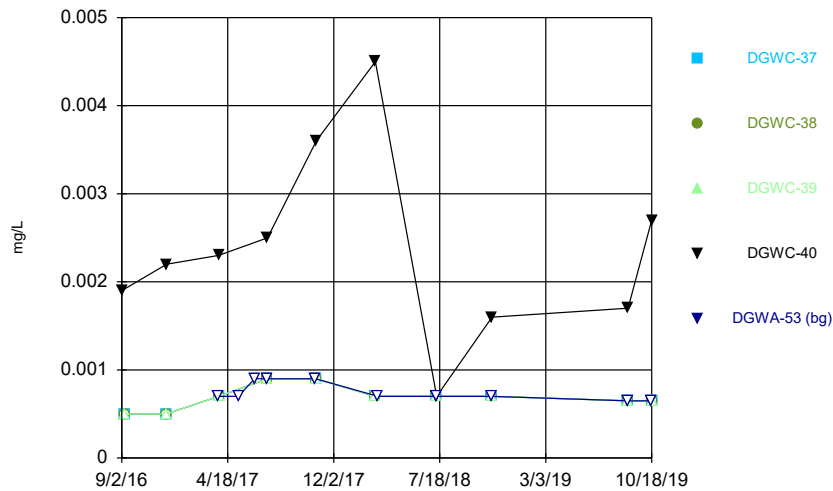
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



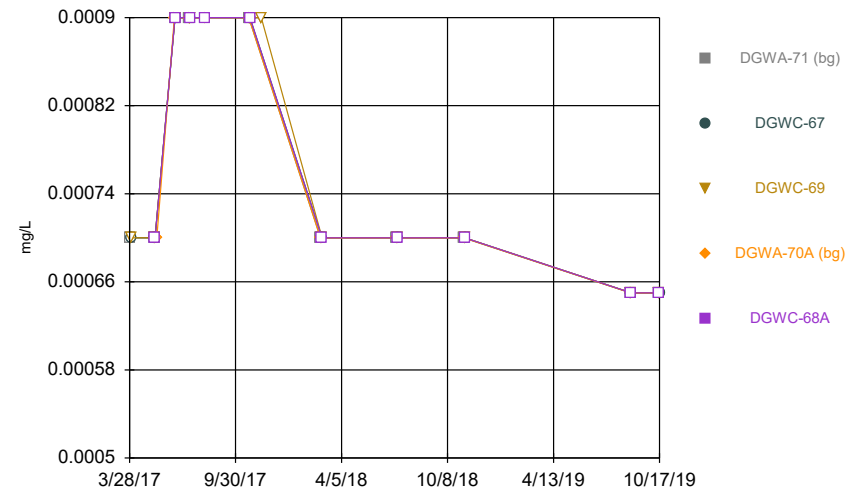
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



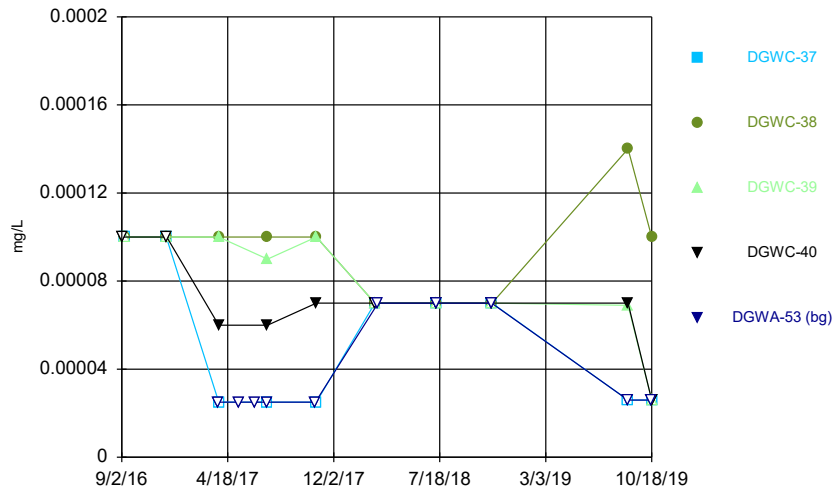
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



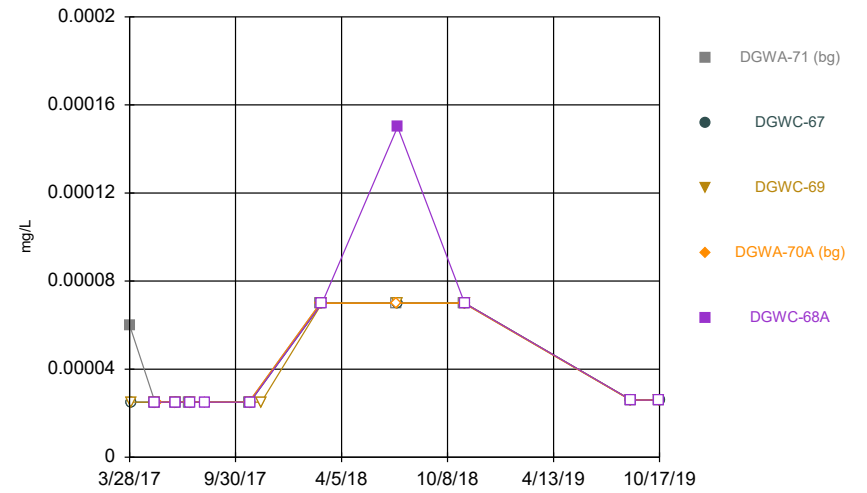
Constituent: Selenium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



Constituent: Thallium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
 McDonough Client: Golder Associates Data: McDonough Ash Pond

Time Series



Constituent: Thallium Analysis Run 2/13/2020 4:52 PM View: APPIV_AP1
 McDonough Client: Golder Associates Data: McDonough Ash Pond

Trend Test

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 2/14/2020, 2:47 PM

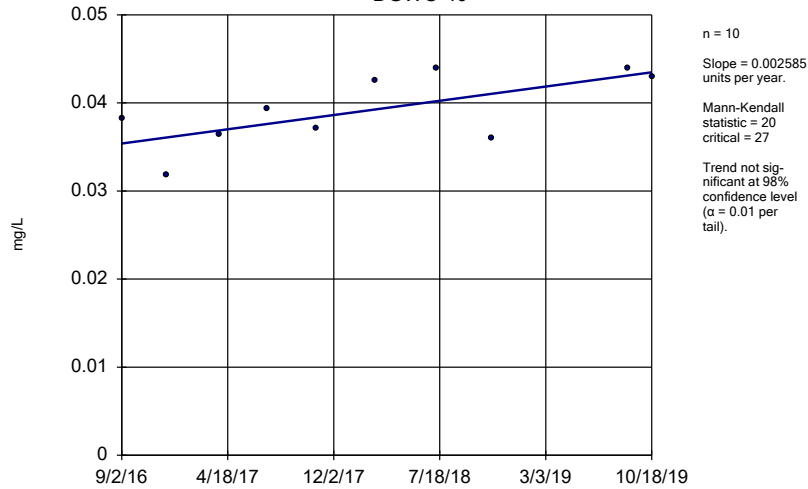
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	DGWA-53 (bg)	-0.00...	-29	-27	Yes	10	0	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-71 (bg)	-0.00...	-41	-27	Yes	10	50	n/a	n/a	0.02	NP

Trend Test

McDonough Client: Golder Associates Data: McDonough Ash Pond Printed 2/14/2020, 2:47 PM

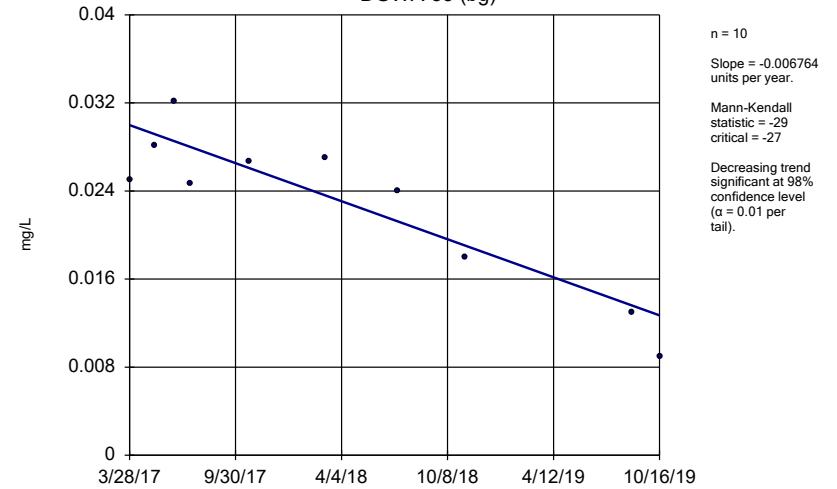
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	DGWC-40	0.002585	20	27	No	10	0	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-53 (bg)	-0.00...	-29	-27	Yes	10	0	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-71 (bg)	-0.00...	-41	-27	Yes	10	50	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWA-70A ...	-0.00...	-24	-27	No	10	50	n/a	n/a	0.02	NP
Cobalt (mg/L)	DGWC-68A	-0.00...	-22	-27	No	10	70	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWC-40	0	-1	-27	No	10	100	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWA-53 (bg)	-0.00...	-1	-27	No	10	0	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWA-71 (bg)	0	2	27	No	10	90	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWA-70A ...	0	7	27	No	10	100	n/a	n/a	0.02	NP
Molybdenum (mg/L)	DGWC-68A	0	0	27	No	10	0	n/a	n/a	0.02	NP

Sen's Slope Estimator
DGWC-40

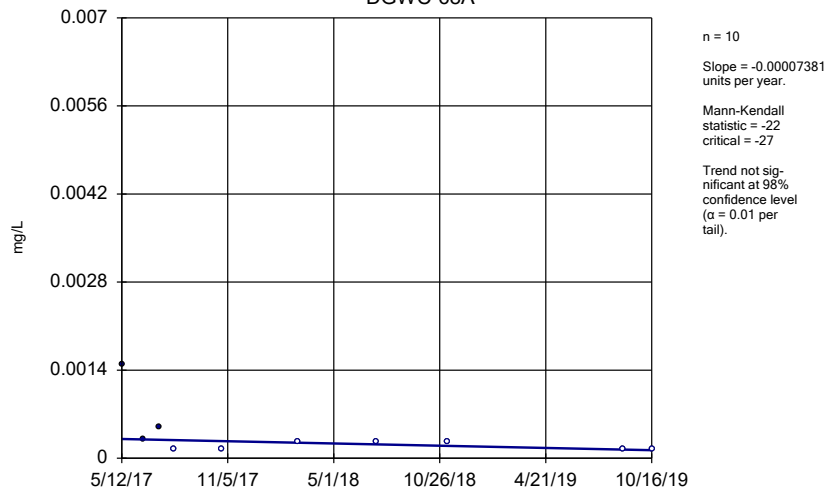


Constituent: Cobalt Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-53 (bg)

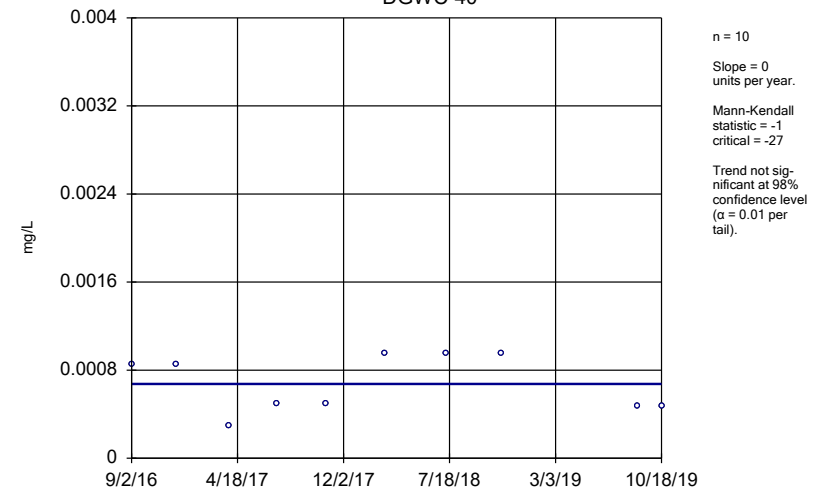


Sen's Slope Estimator
DGWC-68A



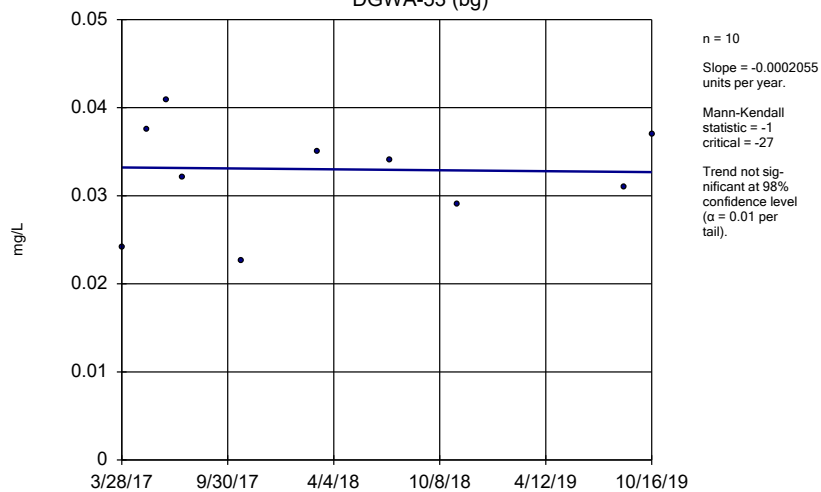
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McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWC-40



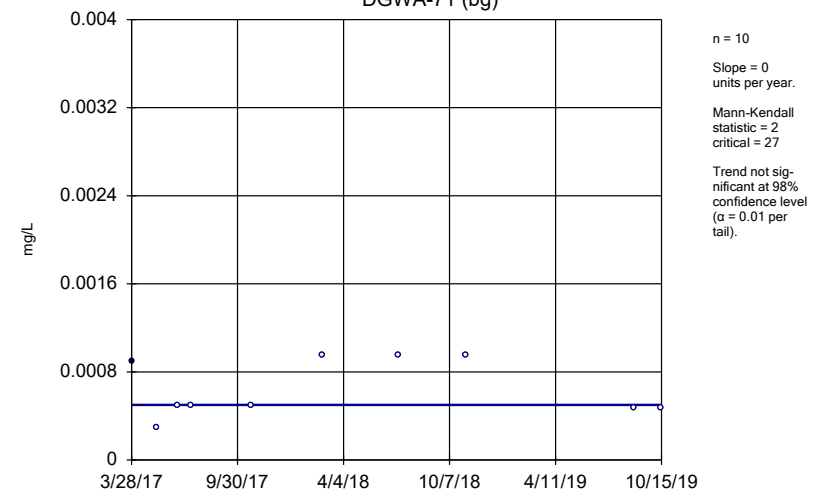
Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-53 (bg)



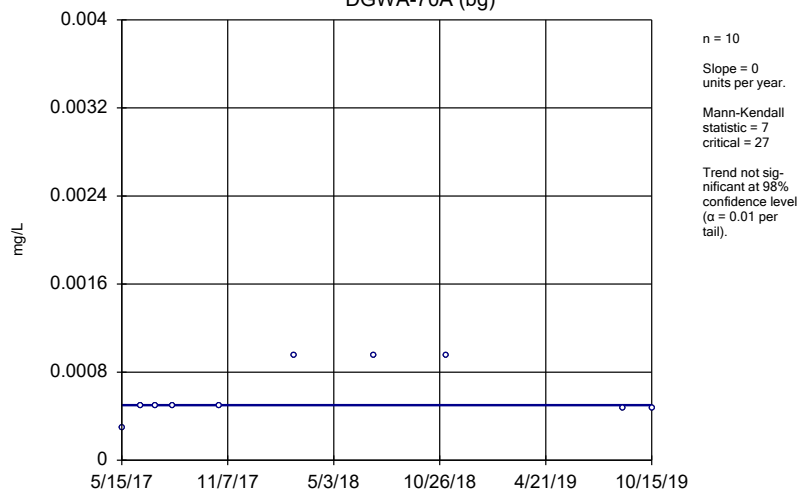
Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator
DGWA-71 (bg)



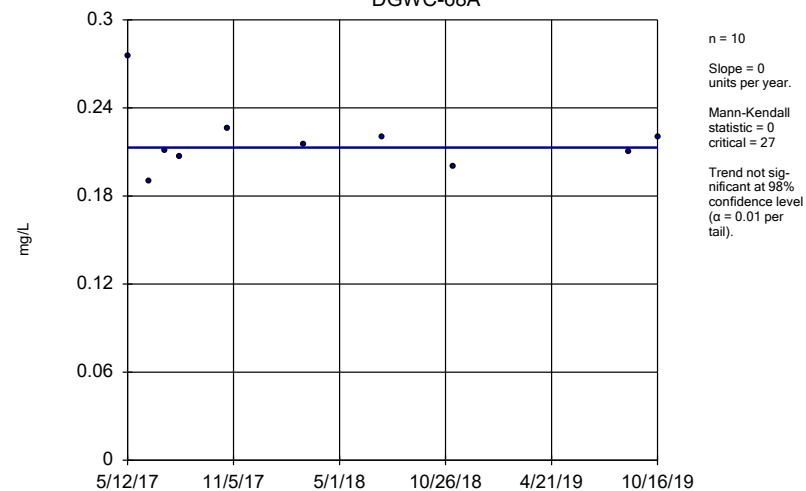
Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator DGWA-70A (bg)



Constituent: Molybdenum Analysis Run 2/14/2020 2:46 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

Sen's Slope Estimator DGWC-68A

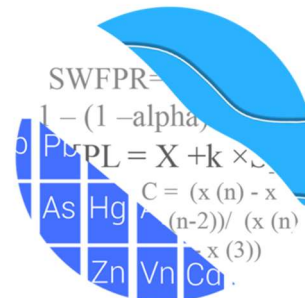


Constituent: Molybdenum Analysis Run 2/14/2020 2:47 PM View: TrendGraphs_AP_1
McDonough Client: Golder Associates Data: McDonough Ash Pond

GROUNDWATER STATS CONSULTING

July 27, 2020

Southern Company Services
Attn: Ms. Lauren Petty
3535 Colonnade Parkway
Birmingham, AL 35243



Re: Plant McDonough Ash Pond (AP-1)
March 2020 Statistical Analysis

Dear Ms. Petty,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the March 2020 Semi-Annual Groundwater Monitoring and Corrective Action Statistical summary of groundwater data for Georgia Power Company's Plant McDonough AP-1. 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 United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling for the Appendix III parameters began in 2016, and at least 8 background samples were collected at each of the groundwater monitoring wells. Semi-annual sampling of the majority of Appendix IV constituents has been performed for several years in accordance with the Georgia Department of Natural Resources, Environmental Protection Division groundwater monitoring regulations. A list of all parameters is provided below.

The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient wells:** DGWA-53, DGWA-70A, and DGWA-71
- **Downgradient wells:** DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A, and DGWC-69

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed Kristina Rayner, Groundwater Statistician and Founder of Groundwater Stats Consulting.

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.

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. A summary of flagged outliers follows this report (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 with the previous screening 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.

Summary of Statistical Methods – Appendix III Parameters:

Based on the earlier evaluation described above, the following method was selected:

- Interwell prediction limits, combined with a 1-of-2 resample plan 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 the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In some cases, the earlier portion

of data are deselected 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.

Background Screening – Conducted in March 2019

Outlier and Trend Testing

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

Using the Tukey box plot method, several outliers were identified and the reports were submitted with the screening. In cases where the most recent value was identified as an outlier, values were not flagged in the database at that time as they may represent a future trend. If future values do not remain at similar concentrations, these values will be flagged as outliers and deselected. Several low values exist in the data sets and appear on the graphs as possible low outliers relative to the laboratory's Practical Quantitation Limit. However, these values are observed trace values (i.e. measurements reported by the laboratory between the Method Detection Limit and the Practical Quantitation Limit) and, therefore, were not flagged as outliers.

Of the outliers identified by Tukey's method, only a few of these values were flagged in the database as all other values are similar to remaining measurements within a given well or neighboring wells or were nondetects.

Additionally, when any values are flagged in the database as outliers, they are plotted in a disconnected and lighter symbol on the time series graph. The accompanying data pages display the flagged value in a lighter font as well. A substitution of the most recent reporting limit was applied when varying detection limits existed in data. When the reporting limit was higher than the Regional Screening Levels discussed below, nondetects were substituted with one half the reporting limit.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits

will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, all available data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses were included with the previous screening and showed two statistically significant decreasing trends for the Appendix III parameters. The only trend identified in the upgradient wells was a statistically significant decreasing trend for sulfate in well DGWA-71. All trends noted were relatively low in magnitude when compared to average concentrations; therefore, no adjustments were made to the data sets.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from upgradient wells are not representative of the current background data population; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The ANOVA identified no variation among upgradient well data for fluoride, making this constituent eligible for interwell analyses. Variation was noted for boron, calcium, chloride, pH, sulfate, and TDS which would indicate intrawell analyses may be most appropriate for these parameters. While data were further tested for intrawell eligibility during the

screening, interwell methods will be used for all Appendix III constituents in accordance with Georgia EPD requirements.

Statistical Analysis of Appendix III Parameters – March 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all historical upgradient well data through March 2020 (Figure D). Interwell prediction limits pool 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 a resample confirms the initial exceedance, a statistically significant increase 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 exceedance is noted and no further action is necessary. If no resample is collected, the original result is considered a confirmed exceedance. Several prediction limit exceedances were noted for Appendix III parameters. A summary table of the interwell prediction limits follows this letter.

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 wells 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: DGWC-67
- Chloride: DGWC-67
- Calcium: DGWC-38

Decreasing trends:

- Chloride: DGWC-67
- Sulfate: DGWA-70A (upgradient), DGWA-71 (upgradient), and DGWC-68A

Statistical Analysis 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). Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for barium and radium. 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, GWPS were established for statistical comparison of Appendix IV constituents for the March 2020 sample event for the federal and state rules (Figures G and H, respectively). To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in accordance with the federal and state requirements in each downgradient well (Figures I and J, respectively). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. Those confidence intervals were compared to the GWPS established using the CCR Rules for the federal requirements and the Georgia EPD

Rules 391-3-4-.10(6)(a) for the State requirements. 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. Exceedances were noted for the following well/constituent pairs:

Federal & State:

- Cobalt: DWC-40
- Molybdenum: DGWC-68A

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for McDonough Ash Pond 1. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,



Andrew T. Collins
Groundwater Analyst



Kristina L. Rayner
Groundwater Statistician

100% Nondetect Well-Constituent Pairs

Date: 4/20/2020 3:35 PM

Plant McDonough Client: Southern Company Data: McDonough AP

Antimony (mg/L)

DGWA-70A, DGWC-37, DGWC-38, DGWC-39, DGWC-40

Arsenic (mg/L)

DGWC-68A

Beryllium (mg/L)

DGWA-53, DGWC-38, DGWC-39, DGWC-67

Cadmium (mg/L)

DGWA-71, DGWC-39

Chromium (mg/L)

DGWA-53, DGWC-39

Lead (mg/L)

DGWA-53, DGWC-68A

Lithium (mg/L)

DGWC-39

Molybdenum (mg/L)

DGWA-70A, DGWC-37, DGWC-39, DGWC-40, DGWC-67

Selenium (mg/L)

DGWA-53, DGWA-70A, DGWA-71, DGWC-37, DGWC-38, DGWC-39, DGWC-67, DGWC-68A, DGWC-69

Thallium (mg/L)

DGWA-53, DGWC-37, DGWC-67, DGWC-69

Outlier Summary

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 10:38 AM

	DGWA-70A Chromium (mg/L)	DGWC-37 Sulfate (mg/L)	DGWA-53 TDS (mg/L)	DGWC-40 TDS (mg/L)
9/2/2016			583 (o)	
7/13/2017		200 (o)		
10/24/2017			671 (o)	
10/15/2019	0.034 (O)			

Appendix III Interwell Prediction Limits - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:14 AM

Constituent	Well	Upper Lim.	Lower Lim	Date	Observ.	Sig.	Bg	N	Bg	Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	3/9/2020	3	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	3/9/2020	2.9	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	3/4/2020	0.86	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	3/9/2020	3.6	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40.3	n/a	3/9/2020	64.2	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40.3	n/a	3/9/2020	91.9	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40.3	n/a	3/9/2020	100	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40.3	n/a	3/4/2020	49.6	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40.3	n/a	3/9/2020	46.9	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40.3	n/a	3/9/2020	54	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	3.99	n/a	3/9/2020	6	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-38	3.99	n/a	3/9/2020	8.1	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-39	3.99	n/a	3/9/2020	7.5	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-40	3.99	n/a	3/4/2020	20.6	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-67	3.99	n/a	3/9/2020	6.7	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-69	3.99	n/a	3/9/2020	5.7	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
pH (SU)	DGWC-40	6.69	5.44	3/4/2020	4.64	Yes	38	n/a	n/a	0	0	n/a	0.002501	NP Inter (normality) 1 of 2	
Sulfate (mg/L)	DGWC-37	31.97	n/a	3/9/2020	90.3	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-38	31.97	n/a	3/9/2020	244	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-39	31.97	n/a	3/9/2020	171	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-40	31.97	n/a	3/4/2020	177	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-67	31.97	n/a	3/9/2020	100	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-68A	31.97	n/a	3/9/2020	37.4	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-37	291	n/a	3/9/2020	357	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-38	291	n/a	3/9/2020	554	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-39	291	n/a	3/9/2020	508	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-40	291	n/a	3/4/2020	400	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	

Appendix III Interwell Prediction Limits - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:14 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bq	N	Bq	Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	3/9/2020	3	Yes	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	3/9/2020	2.9	Yes	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	3/4/2020	0.86	Yes	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	3/9/2020	3.6	Yes	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-69	0.13	n/a	3/9/2020	0.035	No	32	n/a	n/a	18.75	n/a	18.75	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40.3	n/a	3/9/2020	64.2	Yes	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40.3	n/a	3/9/2020	91.9	Yes	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40.3	n/a	3/9/2020	100	Yes	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40.3	n/a	3/4/2020	49.6	Yes	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40.3	n/a	3/9/2020	46.9	Yes	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40.3	n/a	3/9/2020	54	Yes	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-69	40.3	n/a	3/9/2020	8.6	No	32	n/a	n/a	6.25	n/a	6.25	n/a	0.001722	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	3.99	n/a	3/9/2020	6	Yes	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	3.99	n/a	3/9/2020	8.1	Yes	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	3.99	n/a	3/9/2020	7.5	Yes	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	3.99	n/a	3/4/2020	20.6	Yes	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	3.99	n/a	3/9/2020	6.7	Yes	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-68A	3.99	n/a	3/9/2020	3.6	No	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	3.99	n/a	3/9/2020	5.7	Yes	34	1.633	0.182	0	None	0.001075	None	0.001075	Param Inter 1 of 2
Fluoride (mg/L)	DGWC-37	1.2	n/a	3/9/2020	0.054	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-38	1.2	n/a	3/9/2020	0.064	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-39	1.2	n/a	3/9/2020	0.075	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-40	1.2	n/a	3/4/2020	0.11	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-67	1.2	n/a	3/9/2020	0.3ND	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-68A	1.2	n/a	3/9/2020	0.082	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-69	1.2	n/a	3/9/2020	0.068	No	37	n/a	n/a	45.95	n/a	45.95	n/a	0.001314	NP Inter (normality) 1 of 2
pH (SU)	DGWC-37	6.69	5.44	3/9/2020	6.34	No	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-38	6.69	5.44	3/9/2020	6.12	No	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-39	6.69	5.44	3/9/2020	6.37	No	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-40	6.69	5.44	3/4/2020	4.64	Yes	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-67	6.69	5.44	3/9/2020	6.23	No	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-68A	6.69	5.44	3/9/2020	6.6	No	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-69	6.69	5.44	3/9/2020	6.12	No	38	n/a	n/a	0	n/a	0	n/a	0.002501	NP Inter (normality) 1 of 2
Sulfate (mg/L)	DGWC-37	31.97	n/a	3/9/2020	90.3	Yes	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	31.97	n/a	3/9/2020	244	Yes	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	31.97	n/a	3/9/2020	171	Yes	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	31.97	n/a	3/4/2020	177	Yes	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	31.97	n/a	3/9/2020	100	Yes	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	31.97	n/a	3/9/2020	37.4	Yes	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-69	31.97	n/a	3/9/2020	7.6	No	34	2.668	1.493	5.882	None	5.882	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-37	291	n/a	3/9/2020	357	Yes	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	291	n/a	3/9/2020	554	Yes	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	291	n/a	3/9/2020	508	Yes	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	291	n/a	3/4/2020	400	Yes	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-67	291	n/a	3/9/2020	209	No	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-68A	291	n/a	3/9/2020	188	No	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-69	291	n/a	3/9/2020	115	No	33	4.67	0.9751	0	None	0	None	0.001075	Param Inter 1 of 2

Trend Tests Summary Table - PL Exceedances - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:19 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)	DGWC-67	0.1273	37	34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-38	6.169	35	34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.4855	-44	-34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4451	35	34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3895	-35	-34	Yes	11	18.18	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.658	-38	-34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-4.353	-40	-34	Yes	11	0	n/a	n/a	0.01	NP

Trend Tests Summary Table - PL Exceedances - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:19 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)	DGWA-53 (bg)	0.002168	6	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-70A (bg)	0	-4	-34	No	11	45.45	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-71 (bg)	-0.0009787	-11	-30	No	10	10	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-37	-0.06777	-16	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-38	0.006986	4	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-39	-0.06023	-13	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-40	-0.01449	-12	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-67	0.1273	37	34	Yes	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-68A	-0.08548	-13	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-53 (bg)	-4.822	-29	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-70A (bg)	-0.06282	-10	-34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-71 (bg)	-1.211	-27	-30	No	10	10	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-37	0.03763	2	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-38	6.169	35	34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-39	1.881	11	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-40	1.695	23	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-67	0.8732	15	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-68A	0.6397	9	34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-53 (bg)	-0.2044	-28	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-70A (bg)	0	-3	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-71 (bg)	-0.2047	-22	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-37	-0.1019	-9	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-38	0.3525	33	34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.4855	-44	-34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-40	-0.1061	-7	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4451	35	34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-69	0.5928	31	38	No	12	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-53 (bg)	0.0155	1	43	No	13	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-70A (bg)	-0.05316	-23	-38	No	12	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-71 (bg)	0.01074	6	43	No	13	0	n/a	n/a	0.01	NP
pH (SU)	DGWC-40	-0.04813	-21	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-53 (bg)	-2.447	-20	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3895	-35	-34	Yes	11	18.18	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.658	-38	-34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-37	-3.483	-22	-30	No	10	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-38	-5.637	-8	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-39	-26.03	-25	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-40	-7.997	-14	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-67	0	2	34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-4.353	-40	-34	Yes	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-53 (bg)	-23.86	-32	-34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-70A (bg)	1.273	3	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-71 (bg)	-5.967	-20	-34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-37	2.789	1	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-38	18.81	25	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-39	-8.386	-10	-34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-40	14.33	17	30	No	10	0	n/a	n/a	0.01	NP

Tolerance Limit Summary Table

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/23/2020, 2:45 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	32	n/a	n/a	87.5	n/a	n/a	0.1937	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	32	n/a	n/a	78.13	n/a	n/a	0.1937	NP Inter(NDs)
Barium (mg/L)	n/a	0.19	n/a	n/a	n/a	n/a	32	n/a	n/a	0	n/a	n/a	0.1937	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	32	n/a	n/a	81.25	n/a	n/a	0.1937	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	n/a	32	n/a	n/a	90.63	n/a	n/a	0.1937	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	31	n/a	n/a	54.84	n/a	n/a	0.2039	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0322	n/a	n/a	n/a	n/a	32	n/a	n/a	28.13	n/a	n/a	0.1937	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	6.04	n/a	n/a	n/a	n/a	34	1.175	0.5892	0	None	sqrt(x)	0.05	Inter
Fluoride (mg/L)	n/a	1.2	n/a	n/a	n/a	n/a	37	n/a	n/a	45.95	n/a	n/a	0.1499	NP Inter(normality)
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	32	n/a	n/a	78.13	n/a	n/a	0.1937	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	n/a	32	n/a	n/a	40.63	n/a	n/a	0.1937	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	n/a	32	n/a	n/a	87.5	n/a	n/a	0.1937	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.0409	n/a	n/a	n/a	n/a	32	n/a	n/a	62.5	n/a	n/a	0.1937	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	32	n/a	n/a	100	n/a	n/a	0.1937	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	n/a	32	n/a	n/a	93.75	n/a	n/a	0.1937	NP Inter(NDs)

PLANT MCDONOUGH ASH POND 1 GWPS TABLE - FEDERAL				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	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		0.19	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		0.01	0.1
Cobalt, Total (mg/L)		0.006	0.0322	0.0322
Combined Radium, Total (pCi/L)	5		6.04	6.04
Fluoride, Total (mg/L)	4		1.2	4
Lead, Total (mg/L)		0.015	0.005	0.015
Lithium, Total (mg/L)		0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)		0.1	0.0409	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**Highlighted cells indicated Background is higher than MCLs or CCR-Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

PLANT MCDONOUGH ASH POND 1 GWPS TABLE - STATE				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	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		0.19	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		0.01	0.1
Cobalt, Total (mg/L)		0.006	0.0322	0.0322
Combined Radium, Total (pCi/L)	5		6.04	6.04
Fluoride, Total (mg/L)	4		1.2	4
Lead, Total (mg/L)		0.015	0.005	0.005
Lithium, Total (mg/L)		0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)		0.1	0.0409	0.0409
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**Highlighted cells indicated Background is higher than MCLs or CCR-Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

Federal Confidence Intervals - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:42 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)	DGWC-40	0.04578	0.03557	0.0322	Yes 11	0.04067	0.006128	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.1	Yes 11	0.2149	0.02313	0	None	In(x)	0.01	Param.

Federal Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:42 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No 10	0.00245	0.001004	70	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-68A	0.003	0.003	0.006	No 10	0.00278	0.0006957	90	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.003	0.006	No 11	0.002791	0.0006935	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.005	0.01	No 11	0.004718	0.0009347	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.005	0.01	No 11	0.004591	0.001357	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No 11	0.002674	0.002234	45.45	None	No	0.006	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No 11	0.00385	0.001973	72.73	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.005	0.01	No 11	0.004584	0.001381	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04377	0.009083	0.01	No 13	0.0354	0.0477	0	None	ln(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1174	0.09333	2	No 11	0.1054	0.01444	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03392	0.03248	2	No 11	0.0332	0.0008649	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09798	0.08257	2	No 11	0.09027	0.009248	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01798	0.01671	2	No 11	0.01735	0.0007568	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.111	0.102	2	No 11	0.109	0.007099	0	None	No	0.006	NP (normality)
Barium (mg/L)	DGWC-68A	0.08999	0.08641	2	No 11	0.0882	0.002148	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1055	0.06992	2	No 12	0.08773	0.0227	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No 11	0.002469	0.001182	81.82	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003388	0.002794	0.004	No 11	0.003091	0.0003562	9.091	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-68A	0.003	0.003	0.004	No 11	0.002735	0.0008792	90.91	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.00007	0.004	No 12	0.002267	0.001326	75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-37	0.0025	0.0001	0.005	No 11	0.001855	0.001106	72.73	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No 11	0.0004882	0.0007093	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No 11	0.0009864	0.00051	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00021	0.005	No 11	0.00208	0.0009345	81.82	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No 11	0.001306	0.001168	54.55	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No 12	0.001722	0.001149	66.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-37	0.01	0.01	0.1	No 11	0.009155	0.002804	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No 11	0.007442	0.004383	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No 11	0.004954	0.004833	45.45	None	No	0.006	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No 11	0.007462	0.004348	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.01	0.1	No 11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No 12	0.008474	0.003567	83.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0003	0.0322	No 11	0.003736	0.002165	72.73	None	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0015	0.0322	No 11	0.002664	0.00264	18.18	None	No	0.006	NP (normality)
Cobalt (mg/L)	DGWC-39	0.006831	0.006124	0.0322	No 11	0.006727	0.001251	18.18	Kaplan-Meier	sqrt(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04578	0.03557	0.0322	Yes 11	0.04067	0.006128	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.004021	0.001268	0.0322	No 11	0.003718	0.002673	18.18	Kaplan-Meier	No	0.01	Param.
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.0322	No 11	0.003845	0.001998	72.73	Kaplan-Meier	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0009	0.0322	No 12	0.003417	0.001802	50	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.14	0.4228	6.04	No 11	0.7947	0.491	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.106	0.4799	6.04	No 11	0.793	0.3757	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.554	0.7169	6.04	No 11	1.136	0.5024	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.603	0.3583	6.04	No 11	0.9808	0.747	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9917	0.4638	6.04	No 11	0.7277	0.3167	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.518	0.453	6.04	No 11	0.9857	0.6393	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.661	1.015	6.04	No 12	1.338	0.4115	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.162	0.06192	4	No 12	0.1211	0.0857	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-38	0.218	0.07029	4	No 12	0.1589	0.1171	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-39	0.2344	0.09725	4	No 12	0.1788	0.1315	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-40	0.393	0.1495	4	No 12	0.2783	0.1663	8.333	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.1586	0.01638	4	No 12	0.1407	0.1335	41.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-68A	0.23	0.093	4	No 12	0.142	0.08141	8.333	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.2065	0.1033	4	No 13	0.1549	0.06941	7.692	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.015	No 11	0.004224	0.001753	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.015	No 11	0.003658	0.002299	72.73	None	No	0.006	NP (NDs)

Federal Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:42 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lead (mg/L)	DGWC-39	0.005	0.005	0.015	No 11	0.004553	0.001483	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.015	No 11	0.002776	0.002555	54.55	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-67	0.005	0.00009	0.015	No 11	0.004103	0.001995	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.015	No 12	0.003773	0.002219	75	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.04	No 11	0.01243	0.01394	36.36	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0032	0.04	No 11	0.005764	0.008039	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-40	0.03	0.0022	0.04	No 11	0.007336	0.01121	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.04	No 11	0.007	0.007637	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.03	0.04	No 11	0.02742	0.008563	90.91	None	No	0.006	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.04	No 12	0.0052	0.007817	8.333	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0002	0.00006	0.002	No 11	0.0001731	0.00005998	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0002	0.00007	0.002	No 11	0.0001736	0.00005904	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0002	0.0002	0.002	No 11	0.0001872	0.00004251	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0002	0.000045	0.002	No 11	0.0001617	0.00006659	72.73	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0002	0.00007	0.002	No 12	0.0001892	0.00003753	91.67	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.0011	0.1	No 11	0.006764	0.00449	63.64	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.1	Yes 11	0.2149	0.02313	0	None	ln(x)	0.01	Param.
Molybdenum (mg/L)	DGWC-69	0.01496	0.006455	0.1	No 12	0.01104	0.006485	8.333	None	x^(1/3)	0.01	Param.
Selenium (mg/L)	DGWC-40	0.01	0.0019	0.05	No 11	0.004709	0.00351	27.27	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 11	0.0005182	0.0004617	45.45	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 11	0.0005845	0.0004774	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-40	0.001	0.00006	0.002	No 11	0.0005753	0.000488	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.001	0.002	No 11	0.0009227	0.0002563	90.91	None	No	0.006	NP (NDs)

State Confidence Intervals - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:48 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)	DGWC-40	0.04578	0.03557	0.0322	Yes 11	0.04067	0.006128	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.0409	Yes 11	0.2149	0.02313	0	None	In(x)	0.01	Param.

State Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:48 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No 10	0.00245	0.001004	70	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-68A	0.003	0.003	0.006	No 10	0.00278	0.0006957	90	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.003	0.006	No 11	0.002791	0.0006935	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.005	0.01	No 11	0.004718	0.0009347	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.005	0.01	No 11	0.004591	0.001357	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No 11	0.002674	0.002234	45.45	None	No	0.006	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No 11	0.00385	0.001973	72.73	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.005	0.01	No 11	0.004584	0.001381	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04377	0.009083	0.01	No 13	0.0354	0.0477	0	None	ln(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1174	0.09333	2	No 11	0.1054	0.01444	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03392	0.03248	2	No 11	0.0332	0.0008649	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09798	0.08257	2	No 11	0.09027	0.009248	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01798	0.01671	2	No 11	0.01735	0.0007568	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.111	0.102	2	No 11	0.109	0.007099	0	None	No	0.006	NP (normality)
Barium (mg/L)	DGWC-68A	0.08999	0.08641	2	No 11	0.0882	0.002148	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1055	0.06992	2	No 12	0.08773	0.0227	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No 11	0.002469	0.001182	81.82	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003388	0.002794	0.004	No 11	0.003091	0.0003562	9.091	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-68A	0.003	0.003	0.004	No 11	0.002735	0.0008792	90.91	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.00007	0.004	No 12	0.002267	0.001326	75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-37	0.0025	0.0001	0.005	No 11	0.001855	0.001106	72.73	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No 11	0.0004882	0.0007093	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No 11	0.0009864	0.00051	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00021	0.005	No 11	0.00208	0.0009345	81.82	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No 11	0.001306	0.001168	54.55	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No 12	0.001722	0.001149	66.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-37	0.01	0.01	0.1	No 11	0.009155	0.002804	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No 11	0.007442	0.004383	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No 11	0.004954	0.004833	45.45	None	No	0.006	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No 11	0.007462	0.004348	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.01	0.1	No 11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No 12	0.008474	0.003567	83.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0003	0.0322	No 11	0.003736	0.002165	72.73	None	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0015	0.0322	No 11	0.002664	0.00264	18.18	None	No	0.006	NP (normality)
Cobalt (mg/L)	DGWC-39	0.006831	0.006124	0.0322	No 11	0.006727	0.001251	18.18	Kaplan-Meier	sqrt(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04578	0.03557	0.0322	Yes 11	0.04067	0.006128	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.004021	0.001268	0.0322	No 11	0.003718	0.002673	18.18	Kaplan-Meier	No	0.01	Param.
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.0322	No 11	0.003845	0.001998	72.73	Kaplan-Meier	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0009	0.0322	No 12	0.003417	0.001802	50	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.14	0.4228	6.04	No 11	0.7947	0.491	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.106	0.4799	6.04	No 11	0.793	0.3757	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.554	0.7169	6.04	No 11	1.136	0.5024	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.603	0.3583	6.04	No 11	0.9808	0.747	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9917	0.4638	6.04	No 11	0.7277	0.3167	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.518	0.453	6.04	No 11	0.9857	0.6393	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.661	1.015	6.04	No 12	1.338	0.4115	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.162	0.06192	4	No 12	0.1211	0.0857	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-38	0.218	0.07029	4	No 12	0.1589	0.1171	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-39	0.2344	0.09725	4	No 12	0.1788	0.1315	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-40	0.393	0.1495	4	No 12	0.2783	0.1663	8.333	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.1586	0.01638	4	No 12	0.1407	0.1335	41.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-68A	0.23	0.093	4	No 12	0.142	0.08141	8.333	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.2065	0.1033	4	No 13	0.1549	0.06941	7.692	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.005	No 11	0.004224	0.001753	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.005	No 11	0.003658	0.002299	72.73	None	No	0.006	NP (NDs)

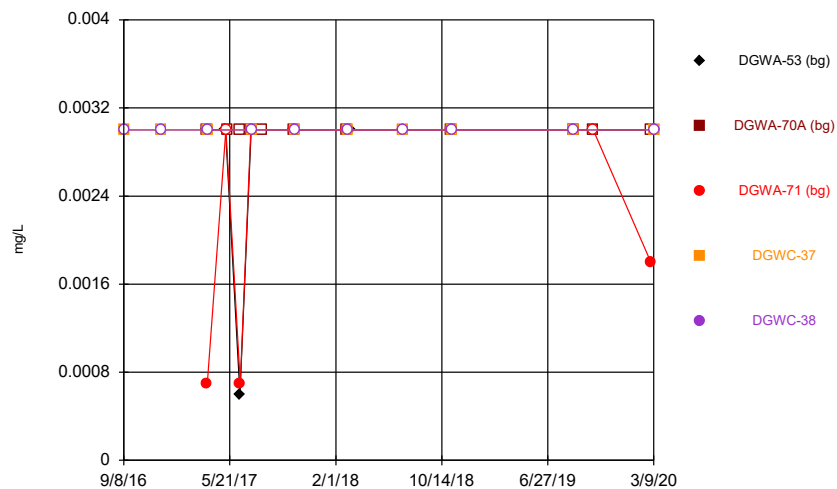
State Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:48 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lead (mg/L)	DGWC-39	0.005	0.005	0.005	No 11	0.004553	0.001483	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.005	No 11	0.002776	0.002555	54.55	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-67	0.005	0.00009	0.005	No 11	0.004103	0.001995	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.005	No 12	0.003773	0.002219	75	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.03	No 11	0.01243	0.01394	36.36	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0032	0.03	No 11	0.005764	0.008039	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-40	0.03	0.0022	0.03	No 11	0.007336	0.01121	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.03	No 11	0.007	0.007637	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.03	0.03	No 11	0.02742	0.008563	90.91	None	No	0.006	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.03	No 12	0.0052	0.007817	8.333	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0002	0.00006	0.002	No 11	0.0001731	0.00005998	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0002	0.00007	0.002	No 11	0.0001736	0.00005904	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0002	0.0002	0.002	No 11	0.0001872	0.00004251	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0002	0.000045	0.002	No 11	0.0001617	0.00006659	72.73	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0002	0.00007	0.002	No 12	0.0001892	0.00003753	91.67	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.0011	0.0409	No 11	0.006764	0.00449	63.64	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.0409	Yes 11	0.2149	0.02313	0	None	ln(x)	0.01	Param.
Molybdenum (mg/L)	DGWC-69	0.01496	0.006455	0.0409	No 12	0.01104	0.006485	8.333	None	x^(1/3)	0.01	Param.
Selenium (mg/L)	DGWC-40	0.01	0.0019	0.05	No 11	0.004709	0.00351	27.27	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 11	0.0005182	0.0004617	45.45	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 11	0.0005845	0.0004774	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-40	0.001	0.00006	0.002	No 11	0.0005753	0.000488	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.001	0.002	No 11	0.0009227	0.0002563	90.91	None	No	0.006	NP (NDs)

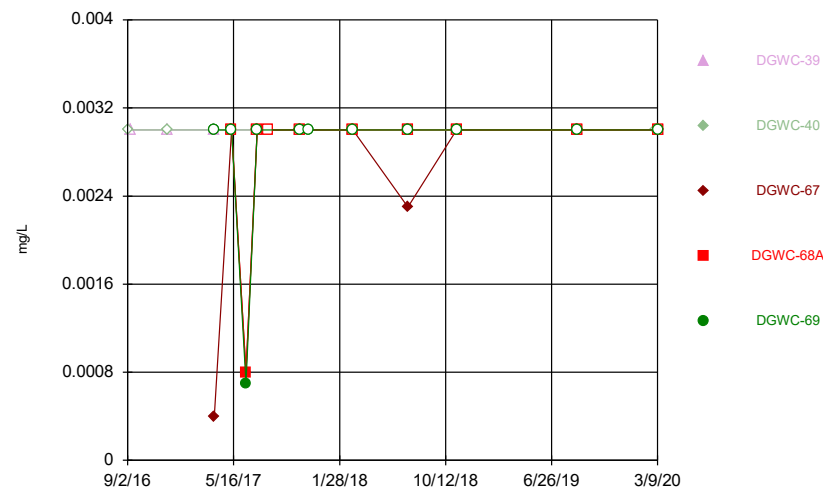
FIGURE A.

Time Series



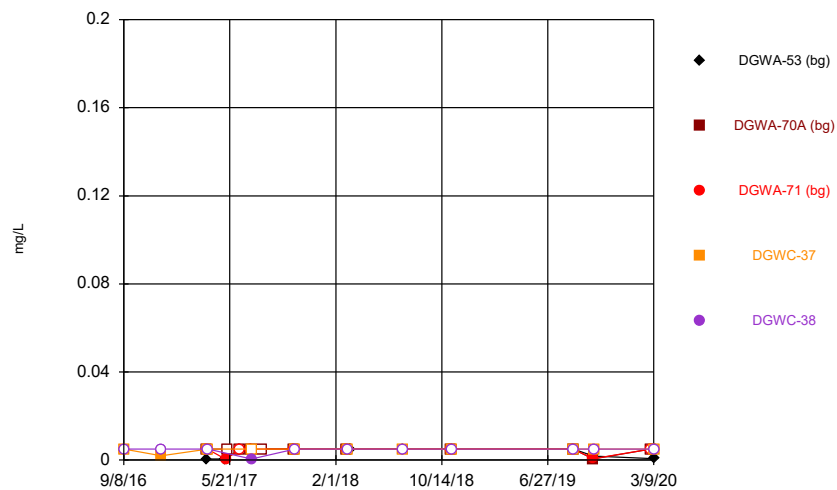
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



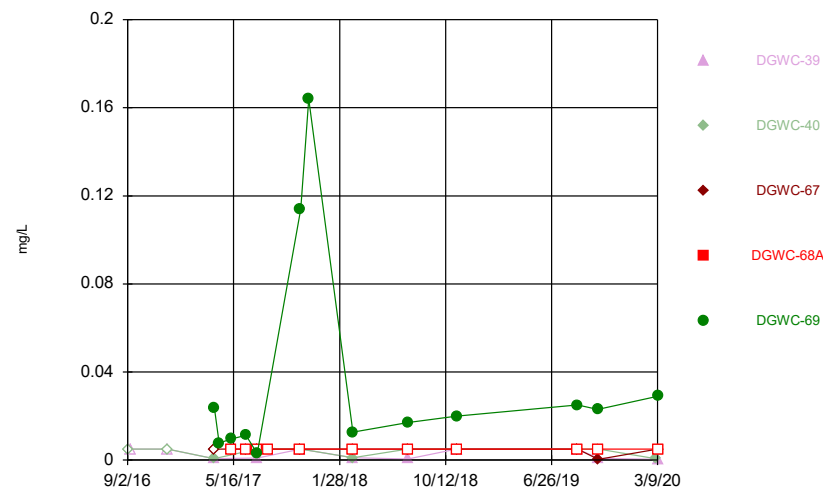
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



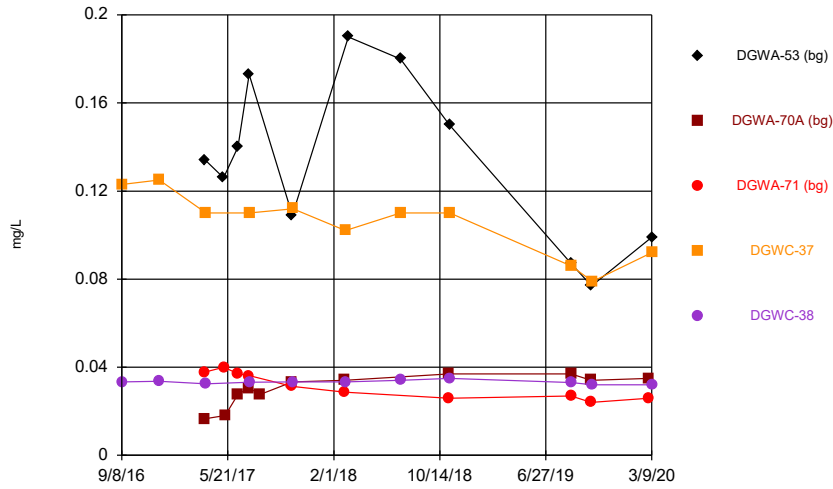
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



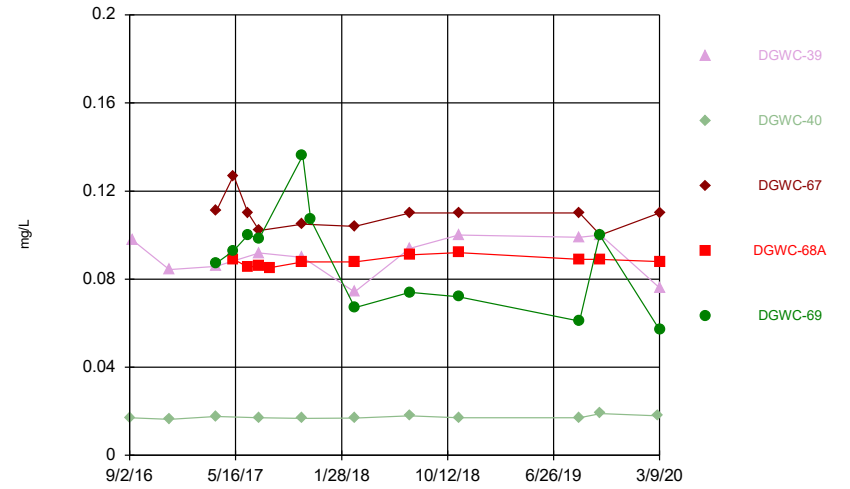
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



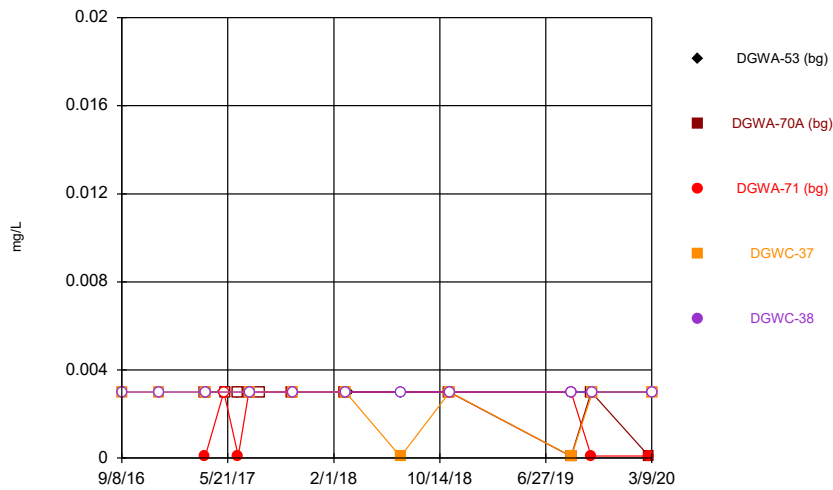
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



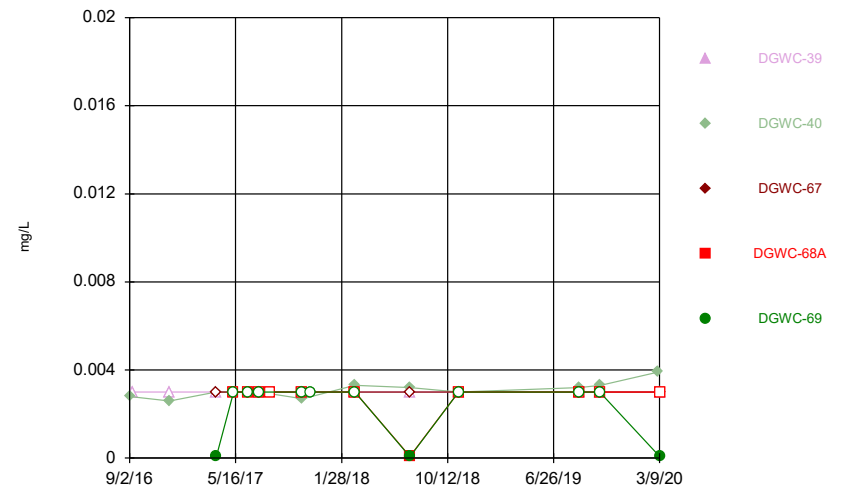
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



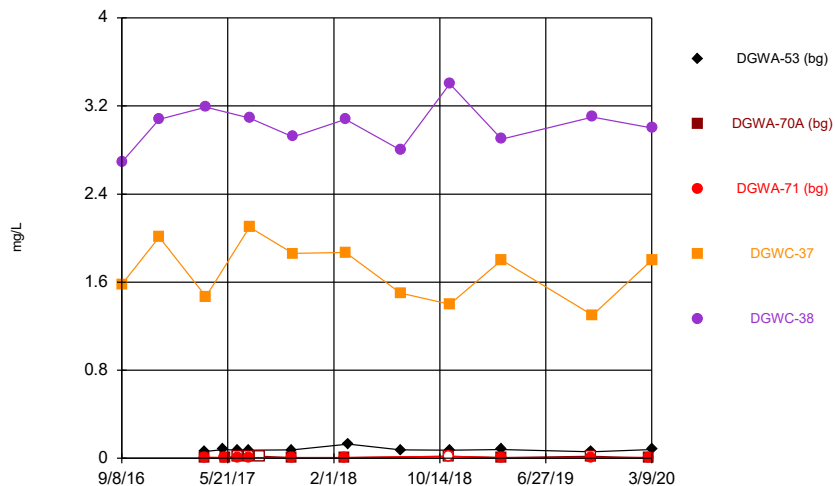
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Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



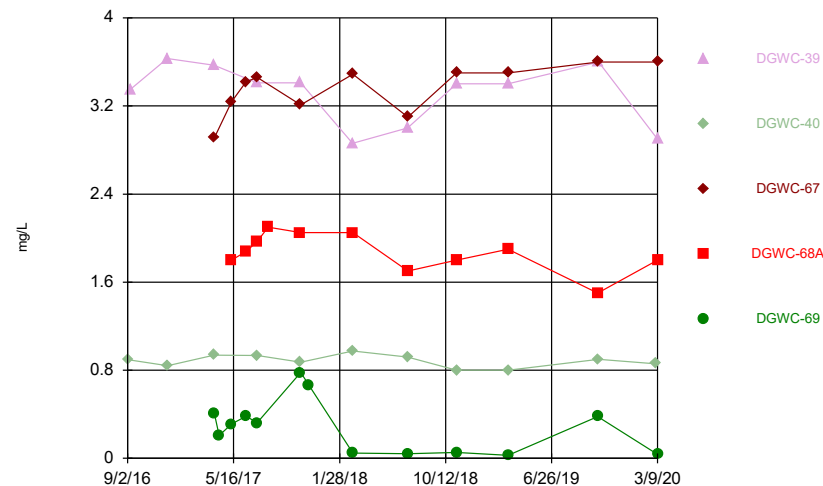
Constituent: Beryllium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



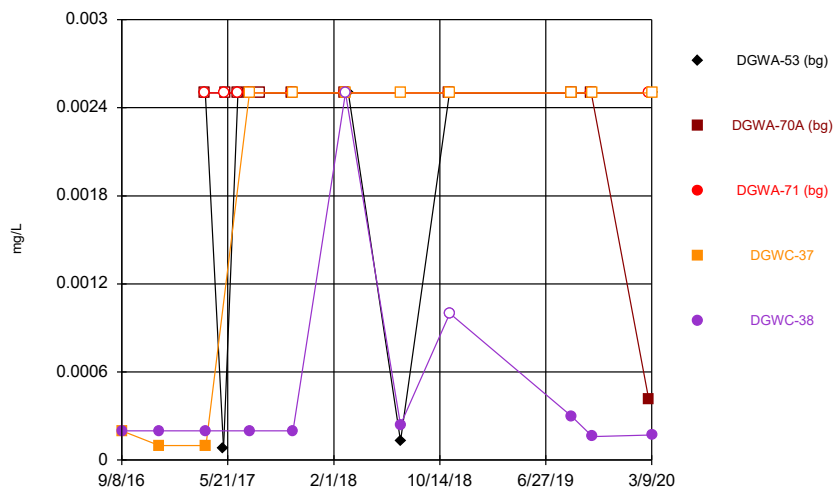
Constituent: Boron Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



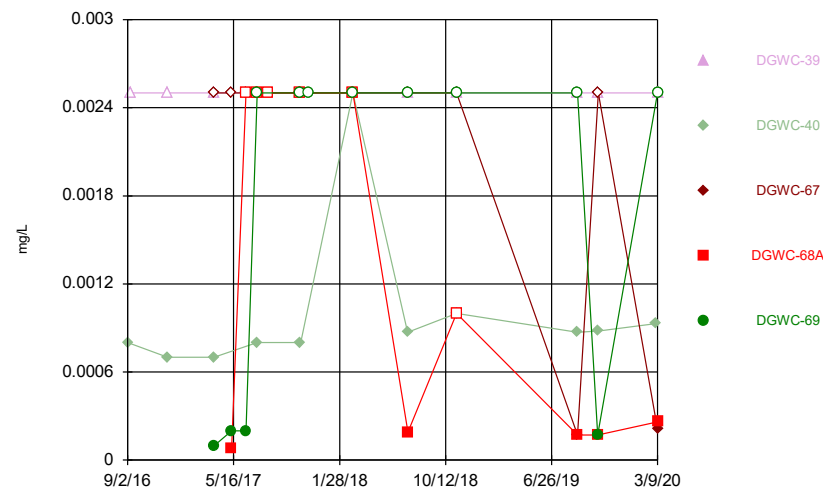
Constituent: Boron Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



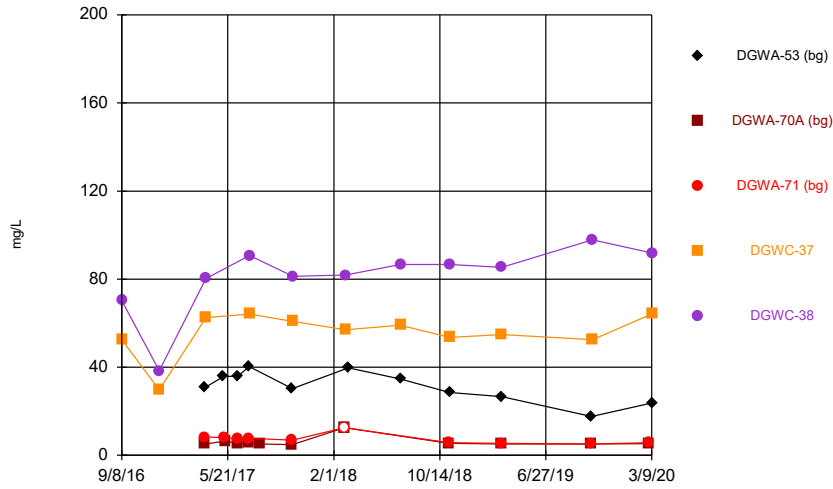
Constituent: Cadmium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



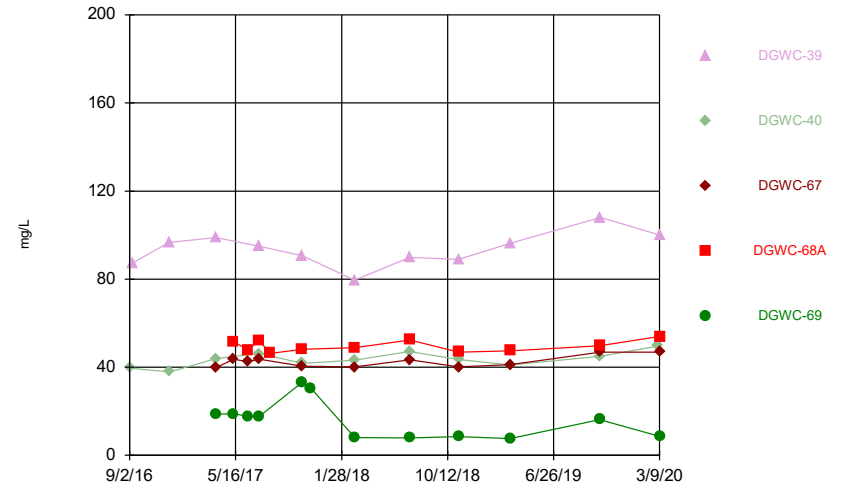
Constituent: Cadmium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



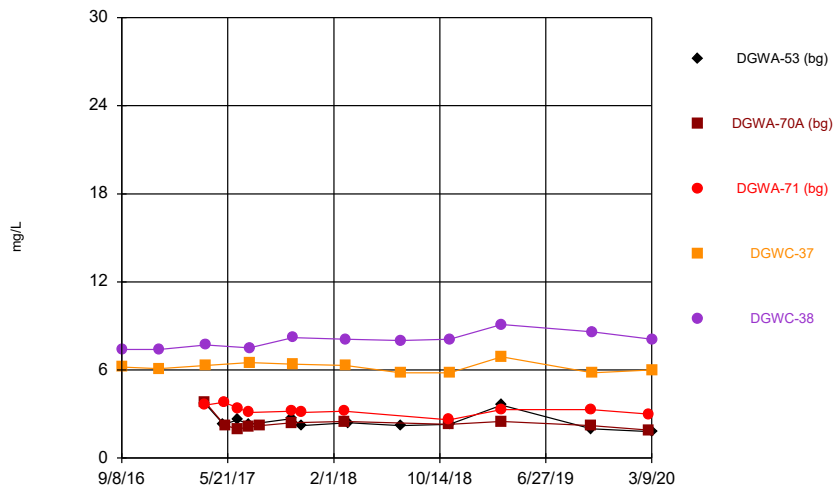
Constituent: Calcium Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



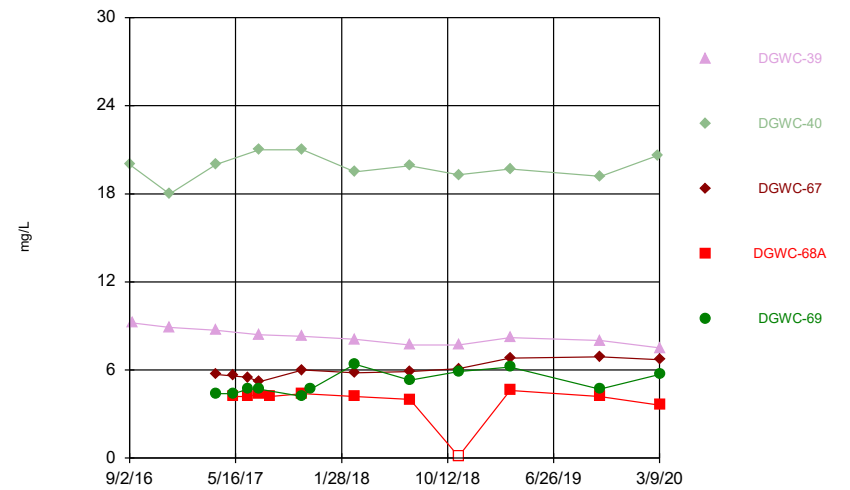
Constituent: Calcium Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



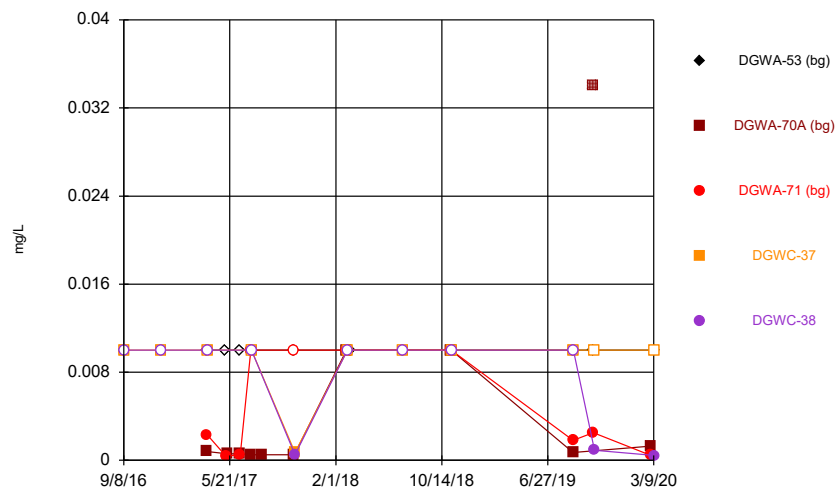
Constituent: Chloride Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



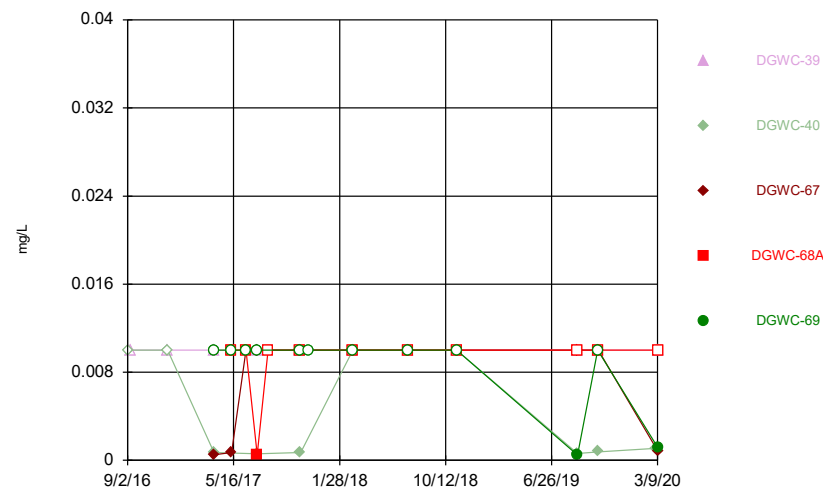
Constituent: Chloride Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



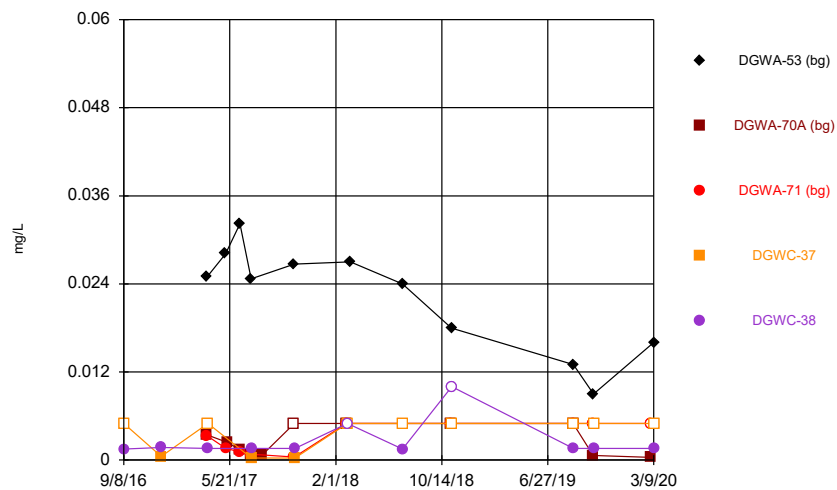
Constituent: Chromium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



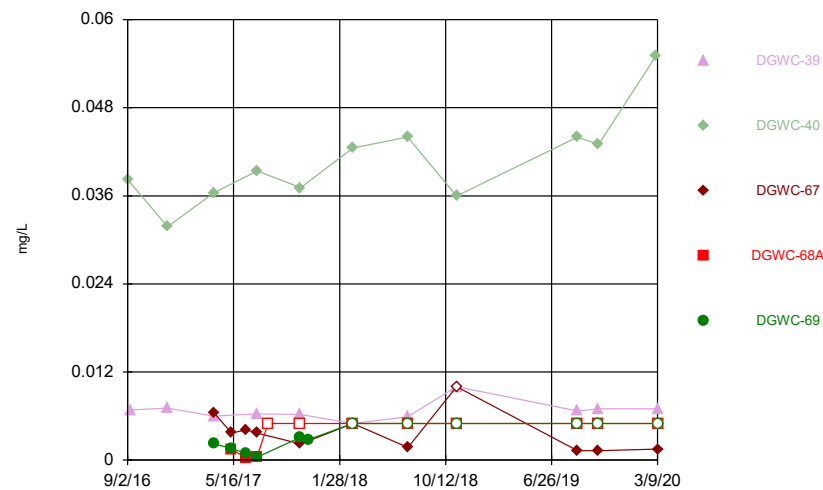
Constituent: Chromium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



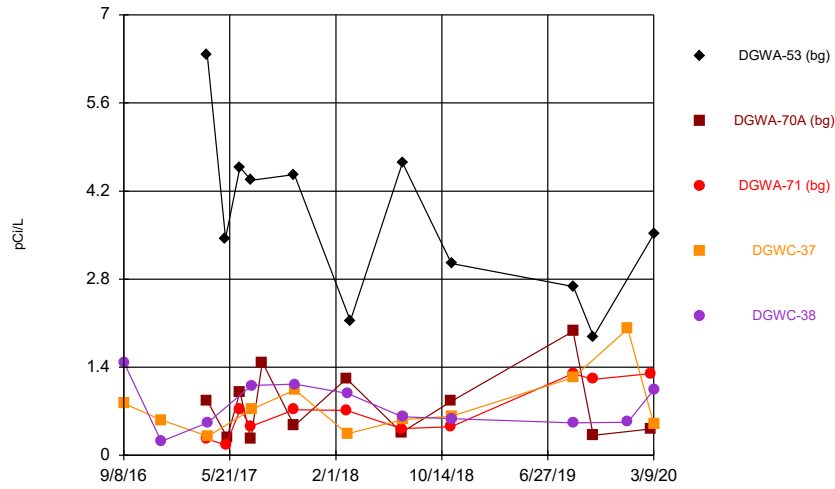
Constituent: Cobalt Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



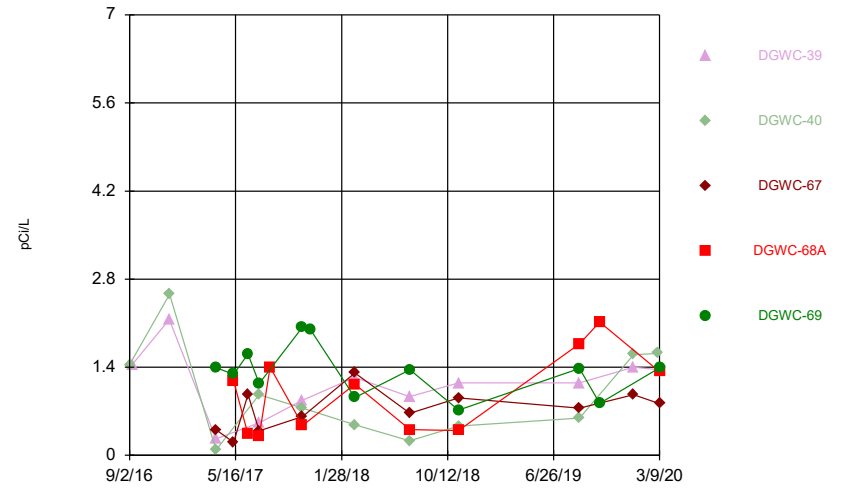
Constituent: Cobalt Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



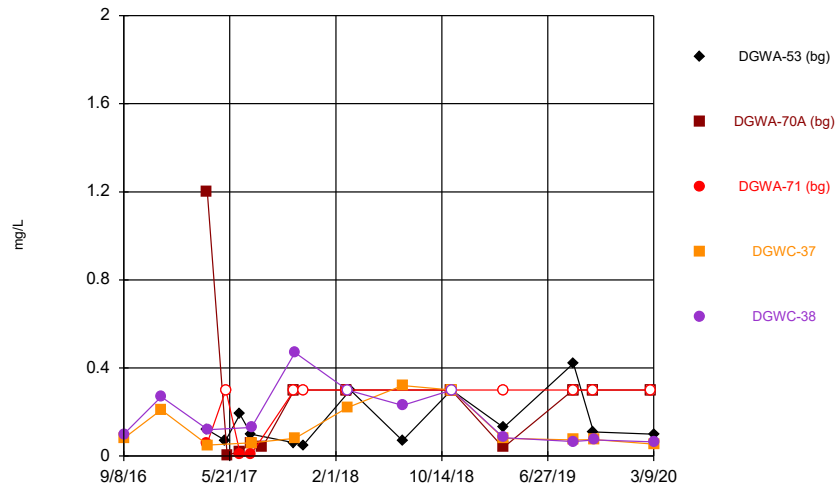
Constituent: Combined Radium 226 + 228 Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



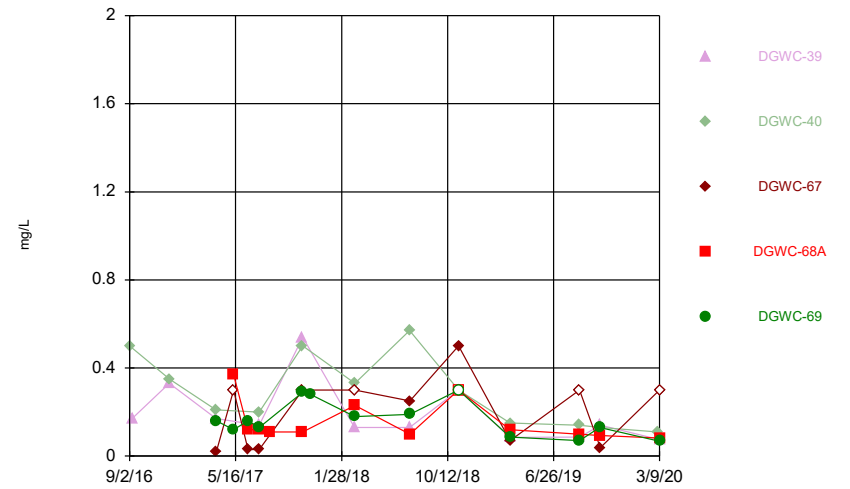
Constituent: Combined Radium 226 + 228 Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



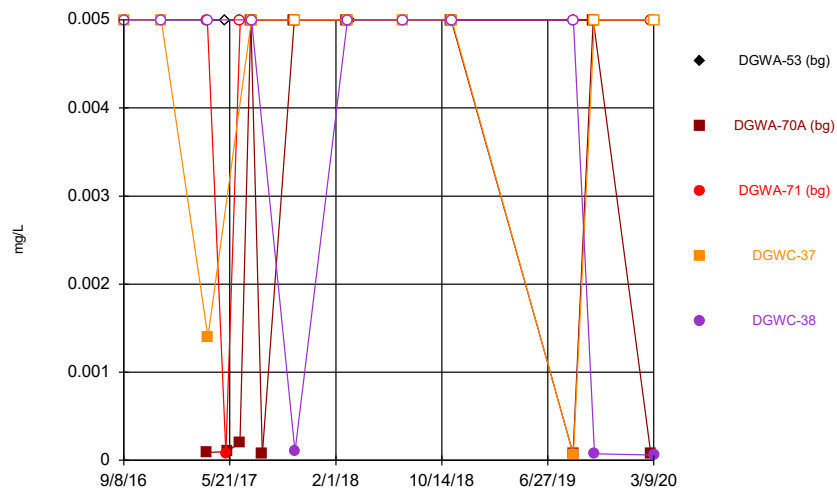
Constituent: Fluoride Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



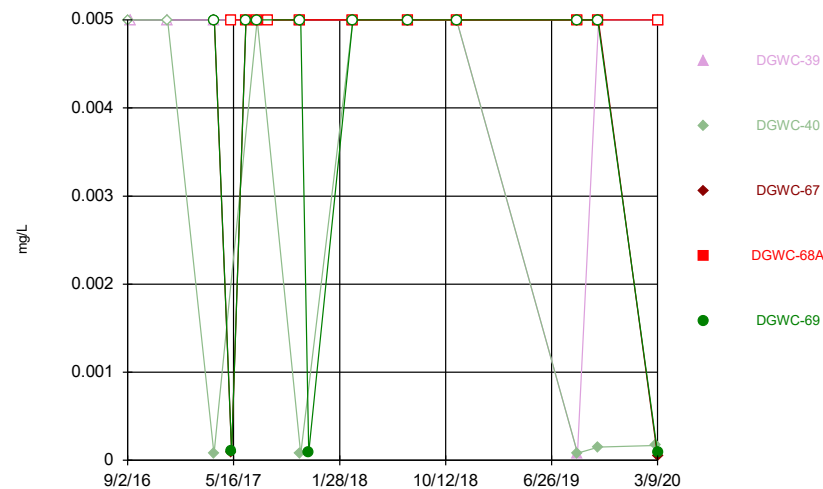
Constituent: Fluoride Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



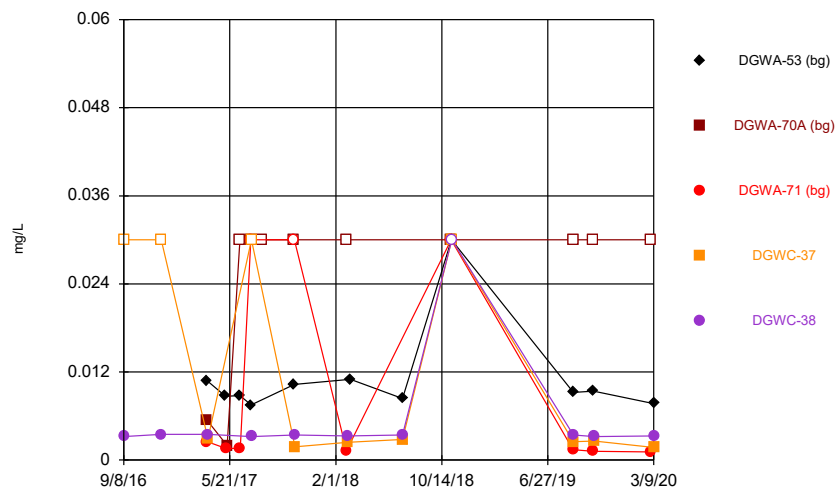
Constituent: Lead Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



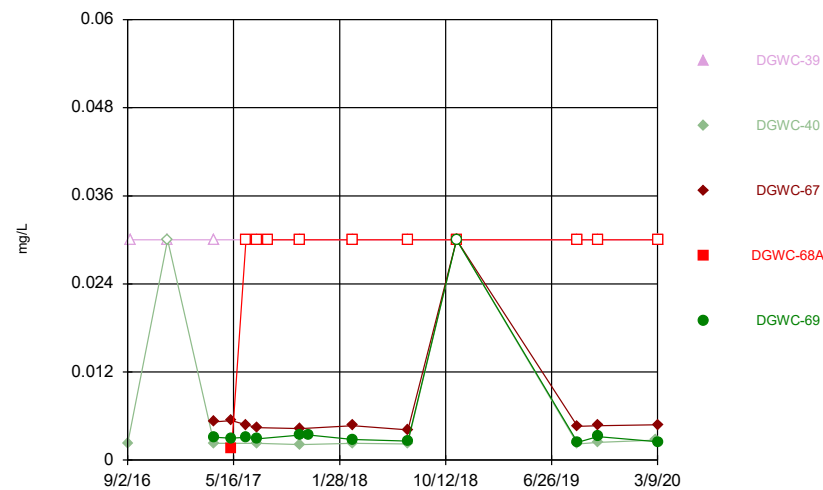
Constituent: Lead Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



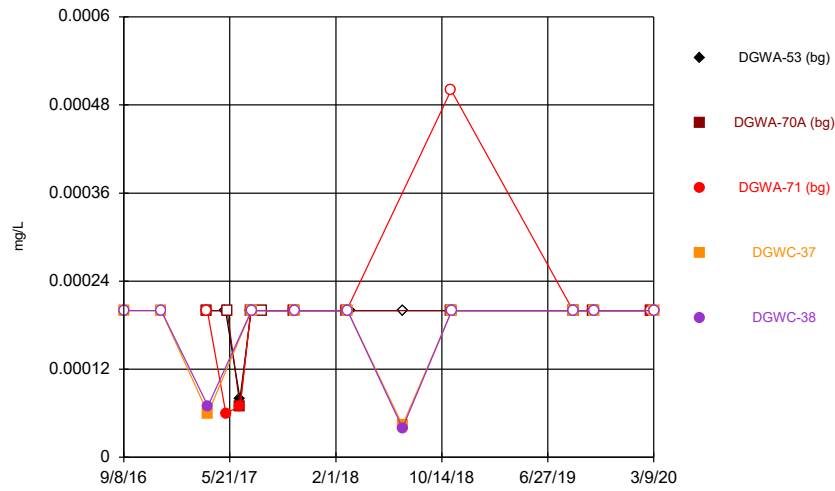
Constituent: Lithium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



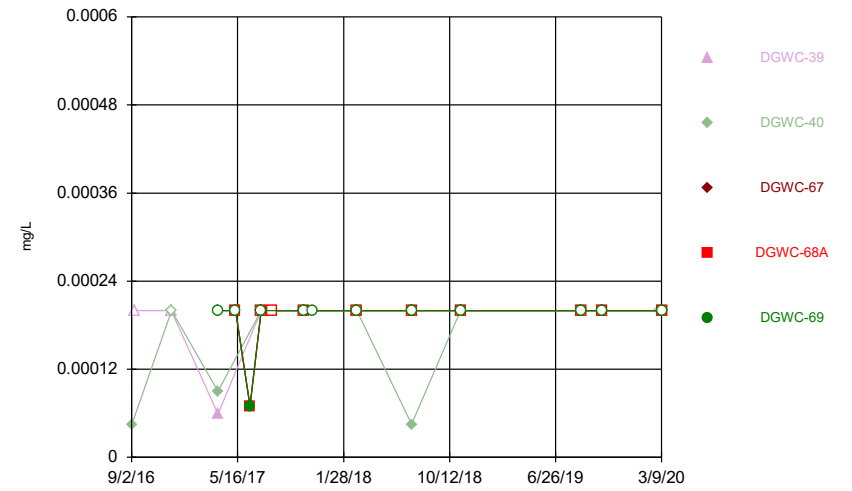
Constituent: Lithium Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



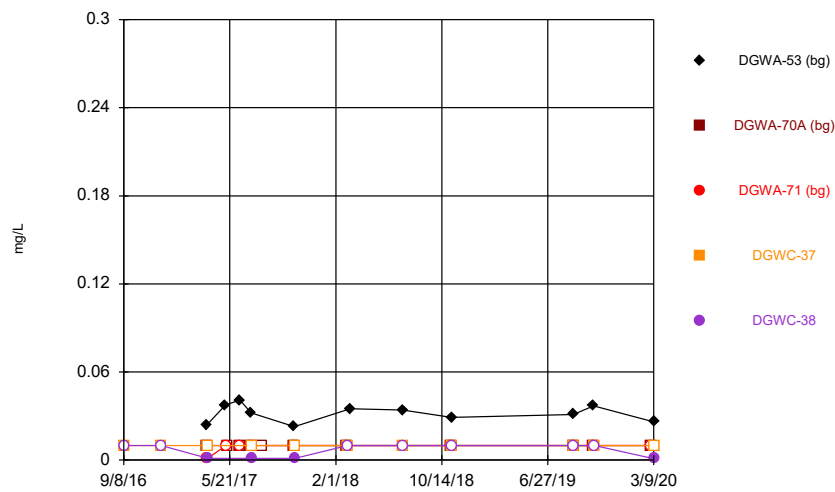
Constituent: Mercury Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



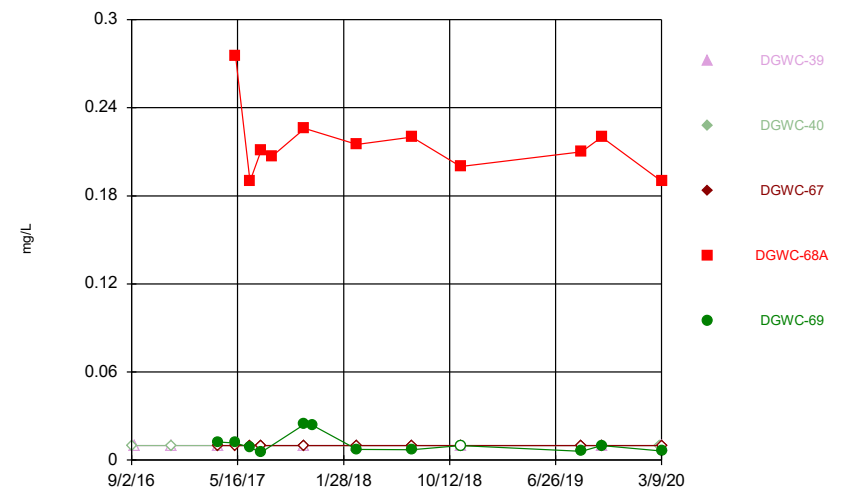
Constituent: Mercury Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



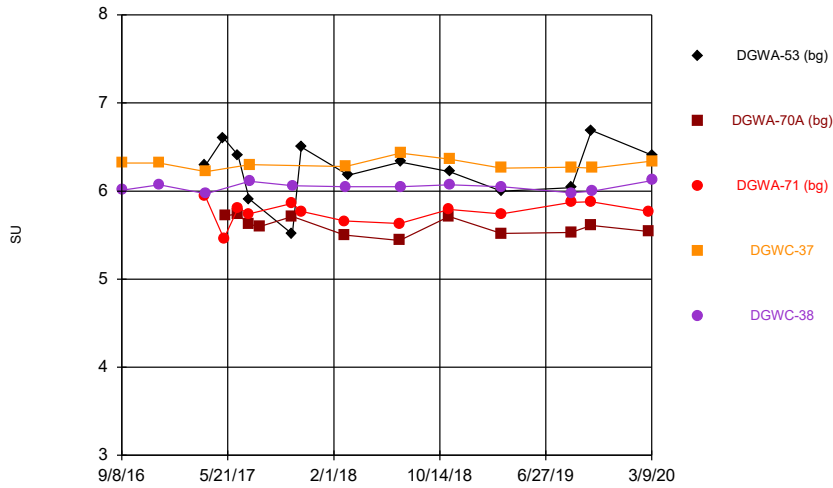
Constituent: Molybdenum Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



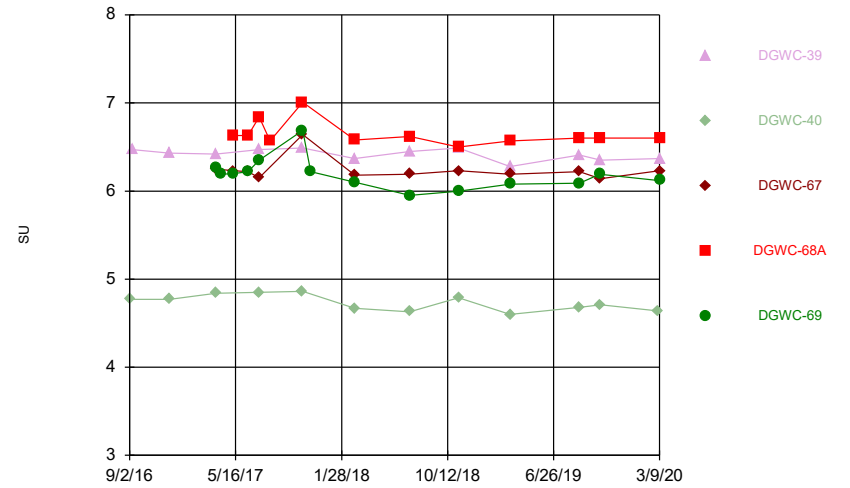
Constituent: Molybdenum Analysis Run 4/20/2020 3:25 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



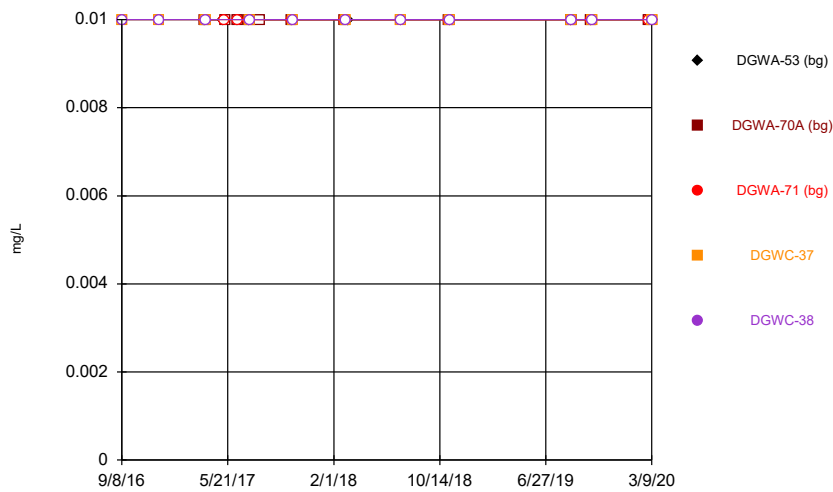
Constituent: pH Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



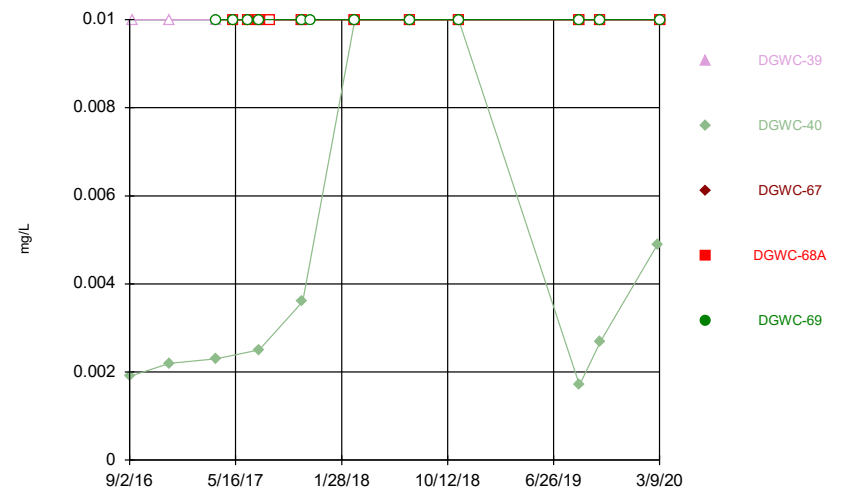
Constituent: pH Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



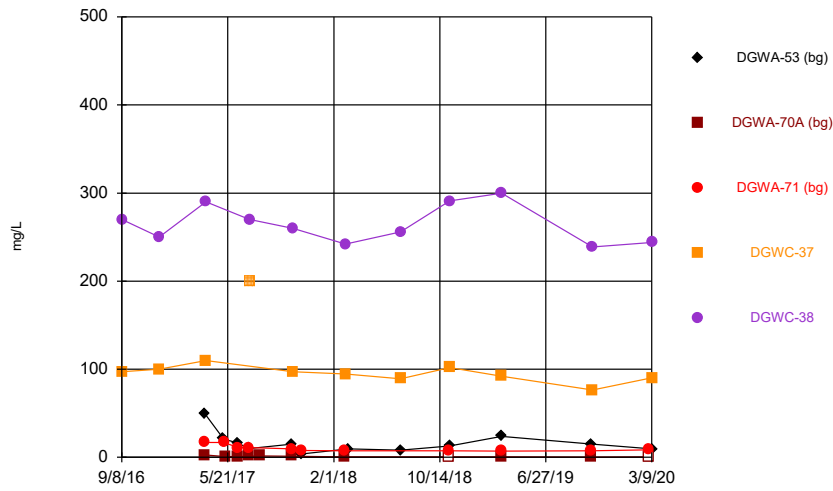
Constituent: Selenium Analysis Run 4/20/2020 3:25 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



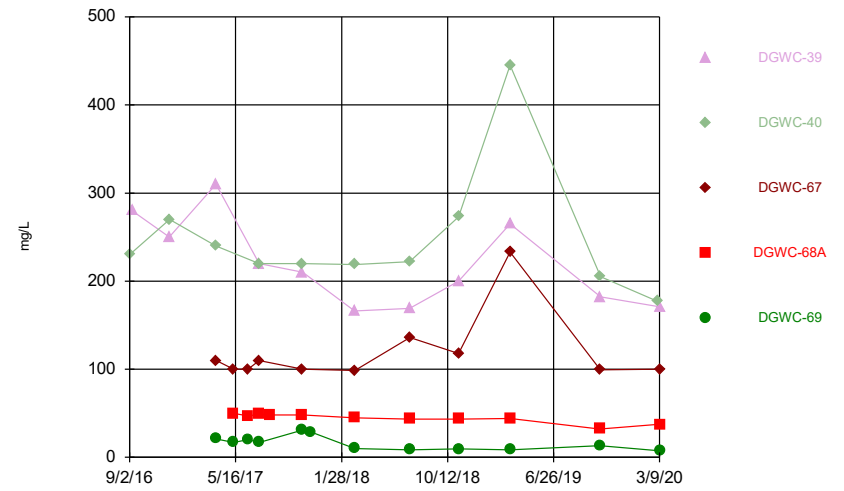
Constituent: Selenium Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



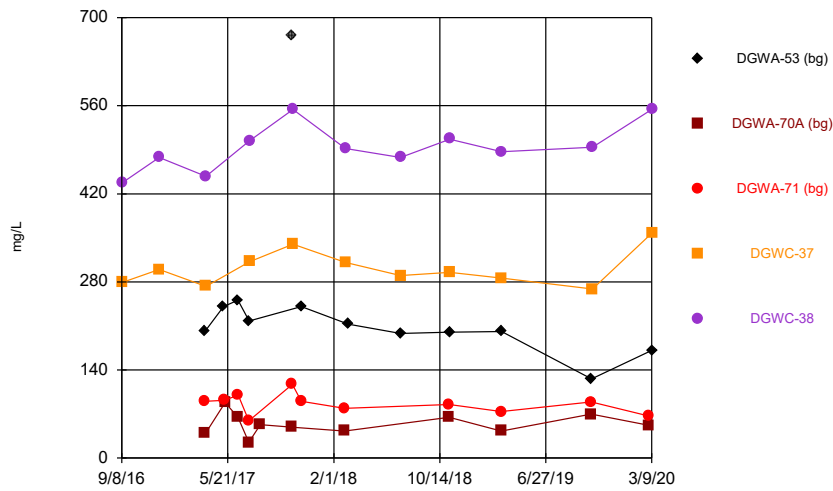
Constituent: Sulfate Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



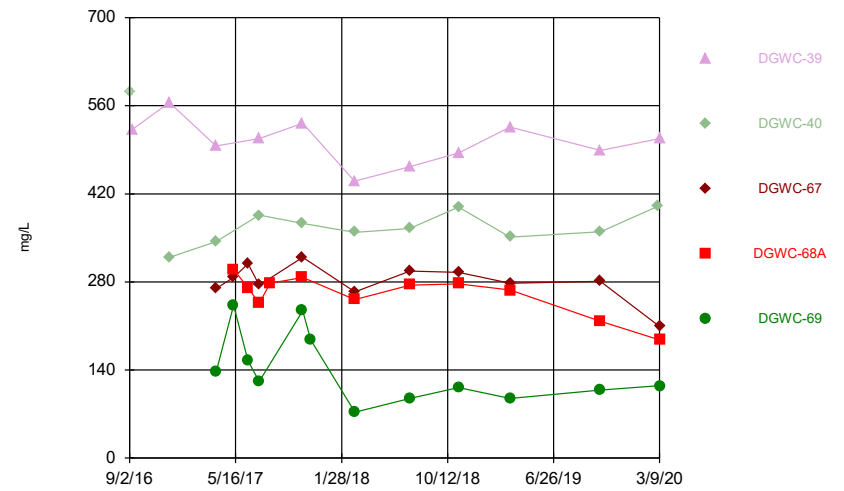
Constituent: Sulfate Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



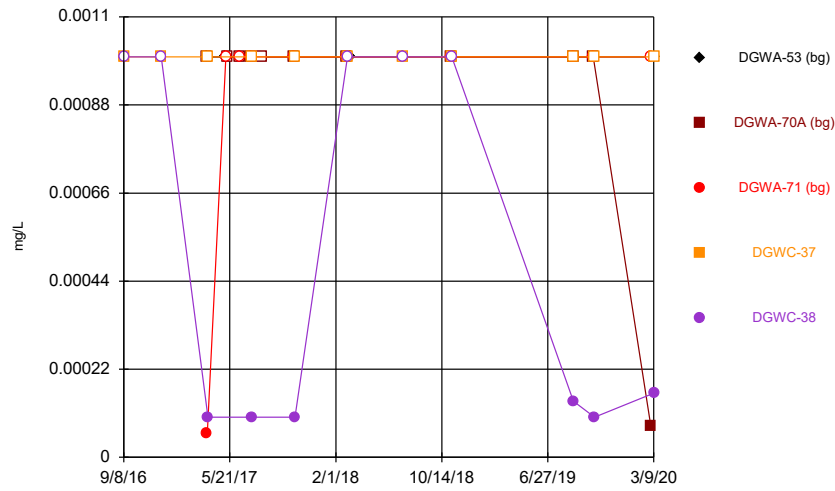
Constituent: TDS Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



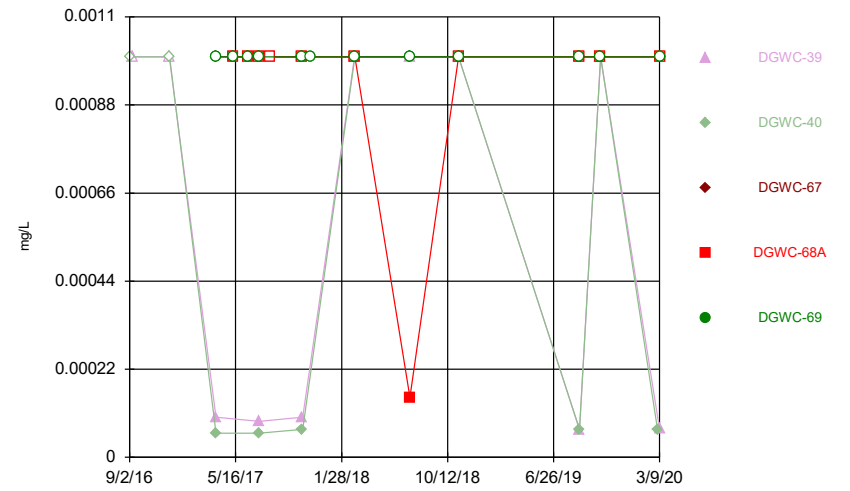
Constituent: TDS Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



Constituent: Thallium Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series



Constituent: Thallium Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Time Series

Constituent: Antimony (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.003	<0.003
12/7/2016				<0.003	<0.003
3/28/2017	<0.003	<0.003	0.0007 (J)		
3/30/2017				<0.003	<0.003
5/11/2017	<0.003				
5/12/2017			<0.003		
5/15/2017		<0.003			
6/15/2017	0.0006 (J)	<0.003			
6/16/2017			0.0007 (J)		
7/11/2017		<0.003	<0.003		
7/12/2017	<0.003				
7/13/2017				<0.003	<0.003
8/8/2017		<0.003			
10/24/2017	<0.003	<0.003	<0.003		
10/26/2017				<0.003	<0.003
2/27/2018		<0.003	<0.003		
3/1/2018				<0.003	<0.003
3/8/2018	<0.003				
7/12/2018	<0.003			<0.003	<0.003
11/6/2018		<0.003	<0.003		
11/7/2018	<0.003				
11/8/2018				<0.003	<0.003
8/27/2019		<0.003	<0.003		
8/28/2019	<0.003			<0.003	<0.003
10/15/2019		<0.003	<0.003		
10/16/2019	<0.003				
3/2/2020		<0.003	0.0018 (J)		
3/9/2020	<0.003			<0.003	<0.003

Time Series

Constituent: Antimony (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		<0.003			
9/8/2016	<0.003				
12/7/2016	<0.003				
12/8/2016		<0.003			
3/30/2017	<0.003	<0.003			
3/31/2017			0.0004 (J)		<0.003
5/12/2017			<0.003	<0.003	<0.003
6/16/2017			0.0008 (J)	0.0008 (J)	0.0007 (J)
7/13/2017	<0.003	<0.003	<0.003	<0.003	<0.003
8/8/2017				<0.003	
10/26/2017	<0.003	<0.003	<0.003	<0.003	<0.003
11/15/2017					<0.003
3/1/2018	<0.003				
3/2/2018		<0.003	<0.003	<0.003	<0.003
7/12/2018	<0.003	<0.003			
7/13/2018			0.0023 (J)	<0.003	<0.003
11/8/2018	<0.003	<0.003	<0.003	<0.003	<0.003
8/28/2019	<0.003	<0.003	<0.003	<0.003	<0.003
3/4/2020		<0.003			
3/9/2020	<0.003		<0.003	<0.003	<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.005	<0.005
12/7/2016				0.0019 (J)	<0.005
3/28/2017	0.0005 (J)	<0.005	<0.005		
3/30/2017				<0.005	<0.005
5/11/2017	0.0005 (J)				
5/12/2017			0.0004 (J)		
5/15/2017		<0.005			
6/15/2017	<0.005	<0.005			
6/16/2017			<0.005		
7/11/2017		<0.005	<0.005		
7/12/2017	<0.005				
7/13/2017				<0.005	0.0005 (J)
8/8/2017		<0.005			
10/24/2017	<0.005	<0.005	<0.005		
10/26/2017				<0.005	<0.005
2/27/2018		<0.005	<0.005		
3/1/2018				<0.005	<0.005
3/8/2018	<0.005				
7/12/2018	<0.005			<0.005	<0.005
11/6/2018		<0.005	<0.005		
11/7/2018	<0.005 (J)				
11/8/2018				<0.005	<0.005
8/27/2019		<0.005	<0.005		
8/28/2019	<0.005			<0.005	<0.005
10/15/2019		0.00052 (J)	0.00071 (J)		
10/16/2019	0.0018 (J)				
10/18/2019				<0.005	<0.005
3/2/2020		<0.005	<0.005		
3/9/2020	0.00068 (J)			<0.005	<0.005

Time Series

Constituent: Arsenic (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		<0.005			
9/8/2016	<0.005				
12/7/2016	<0.005				
12/8/2016		<0.005			
3/30/2017	0.0007 (J)	0.0006 (J)			
3/31/2017			<0.005		0.0239
4/12/2017					0.0077
5/12/2017			<0.005	<0.005	0.0097
6/16/2017			<0.005	<0.005	0.0113
7/13/2017	0.0009 (J)	<0.005	<0.005	<0.005	0.0029 (J)
8/8/2017				<0.005	
10/26/2017	<0.005	<0.005	<0.005	<0.005	0.114
11/15/2017					0.164
3/1/2018	0.0011 (J)				
3/2/2018		0.0011 (J)	<0.005	<0.005	0.0127
7/12/2018	0.00057 (J)	<0.005			
7/13/2018			<0.005	<0.005	0.017
11/8/2018	<0.005	<0.005	<0.005	<0.005 (J)	0.02
8/28/2019	<0.005	<0.005	<0.005	<0.005	0.025
10/16/2019				<0.005	0.023
10/17/2019			0.00042 (J)		
10/18/2019	0.00075 (J)	<0.005			
3/4/2020		0.00065 (J)			
3/9/2020	0.00039 (J)		<0.005	<0.005	0.029

Time Series

Constituent: Barium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				0.123	0.0333
12/7/2016				0.125	0.0336
3/28/2017	0.134	0.0166	0.0378		
3/30/2017				0.11	0.0325
5/11/2017	0.126				
5/12/2017			0.04		
5/15/2017		0.0181			
6/15/2017	0.14	0.0277			
6/16/2017			0.0369		
7/11/2017		0.0306	0.0362		
7/12/2017	0.173				
7/13/2017				0.11	0.0332
8/8/2017		0.0277			
10/24/2017	0.109	0.0333	0.0313		
10/26/2017				0.112	0.0333
2/27/2018		0.0341	0.0287		
3/1/2018				0.102	0.0333
3/8/2018	0.19				
7/12/2018	0.18			0.11	0.034
11/6/2018		0.037	0.026		
11/7/2018	0.15				
11/8/2018				0.11	0.035
8/27/2019		0.037	0.027		
8/28/2019	0.087			0.086	0.033
10/15/2019		0.034	0.024		
10/16/2019	0.077				
10/18/2019				0.079	0.032
3/2/2020		0.035	0.026		
3/9/2020	0.099			0.092	0.032

Time Series

Constituent: Barium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.0171			
9/8/2016	0.0978				
12/7/2016	0.0844				
12/8/2016		0.0163			
3/30/2017	0.0858	0.0177			
3/31/2017			0.111		0.0872
5/12/2017			0.127	0.089	0.0929
6/16/2017			0.11	0.0855	0.1
7/13/2017	0.0919	0.017	0.102	0.0859	0.0985
8/8/2017				0.0852	
10/26/2017	0.0899	0.0168	0.105	0.0878	0.136
11/15/2017					0.107
3/1/2018	0.0742				
3/2/2018		0.0169	0.104	0.0878	0.0671
7/12/2018	0.094	0.018			
7/13/2018			0.11	0.091	0.074
11/8/2018	0.1	0.017	0.11	0.092	0.072
8/28/2019	0.099	0.017	0.11	0.089	0.061
10/16/2019				0.089	0.1
10/17/2019			0.1		
10/18/2019	0.1	0.019			
3/4/2020		0.018			
3/9/2020	0.076		0.11	0.088	0.057

Time Series

Constituent: Beryllium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.003	<0.003
12/7/2016				<0.003	<0.003
3/28/2017	<0.003	<0.003	9E-05 (J)		
3/30/2017				<0.003	<0.003
5/11/2017	<0.003				
5/12/2017			<0.003		
5/15/2017		<0.003			
6/15/2017	<0.003	<0.003			
6/16/2017			0.0001 (J)		
7/11/2017		<0.003	<0.003		
7/12/2017	<0.003				
7/13/2017				<0.003	<0.003
8/8/2017		<0.003			
10/24/2017	<0.003	<0.003	<0.003		
10/26/2017				<0.003	<0.003
2/27/2018		<0.003	<0.003		
3/1/2018				<0.003	<0.003
3/8/2018	<0.003				
7/12/2018	<0.003			7E-05 (J)	<0.003
11/6/2018		<0.003 (J)	<0.003 (J)		
11/7/2018	<0.003				
11/8/2018				<0.003	<0.003
8/27/2019		7.9E-05 (J)	<0.003		
8/28/2019	<0.003			8.6E-05 (J)	<0.003
10/15/2019		<0.003	8.8E-05 (J)		
10/16/2019	<0.003				
10/18/2019				<0.003	<0.003
3/2/2020		9.6E-05 (J)	0.0001 (J)		
3/9/2020	<0.003			<0.003	<0.003

Time Series

Constituent: Beryllium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.0028 (J)			
9/8/2016	<0.003				
12/7/2016	<0.003				
12/8/2016		0.0026 (J)			
3/30/2017	<0.003	0.003			
3/31/2017			<0.003		7E-05 (J)
5/12/2017			<0.003	<0.003	<0.003
6/16/2017			<0.003	<0.003	<0.003
7/13/2017	<0.003	0.003 (J)	<0.003	<0.003	<0.003
8/8/2017				<0.003	
10/26/2017	<0.003	0.0027 (J)	<0.003	<0.003	<0.003
11/15/2017					<0.003
3/1/2018	<0.003				
3/2/2018		0.0033	<0.003	<0.003	<0.003
7/12/2018	<0.003	0.0032			
7/13/2018			<0.003	8.4E-05 (J)	5.8E-05 (J)
11/8/2018	<0.003	<0.003 (J)	<0.003	<0.003	<0.003
8/28/2019	<0.003	0.0032	<0.003	<0.003	<0.003
10/16/2019				<0.003	<0.003
10/17/2019			<0.003		
10/18/2019	<0.003	0.0033			
3/4/2020		0.0039			
3/9/2020	<0.003		<0.003	<0.003	7.5E-05 (J)

Time Series

Constituent: Boron (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				1.58	2.69
12/7/2016				2.01	3.08
3/28/2017	0.0612	0.0067 (J)	0.0097 (J)		
3/30/2017				1.47	3.19
5/11/2017	0.0805				
5/12/2017			0.0082 (J)		
5/15/2017		0.0073 (J)			
6/15/2017	0.0725	<0.04			
6/16/2017			0.0085 (J)		
7/11/2017		<0.04	0.0077 (J)		
7/12/2017	0.0735				
7/13/2017				2.1	3.09
8/8/2017		<0.04			
10/24/2017	0.077	0.0082 (J)	0.0083 (J)		
10/26/2017				1.86	2.92
2/27/2018		0.0062 (J)	0.0069 (J)		
3/1/2018				1.87	3.08
3/8/2018	0.13 (J)				
7/12/2018	0.076			1.5	2.8
11/6/2018		<0.04 (J)	<0.04 (J)		
11/7/2018	0.073				
11/8/2018				1.4	3.4
3/12/2019		0.0073 (J)	0.0068 (J)		
3/13/2019	0.08			1.8	2.9
10/15/2019		<0.04	0.0054 (J)		
10/16/2019	0.059				
10/18/2019				1.3	3.1
3/2/2020		0.0055 (J)	0.01 (J)		
3/9/2020	0.08 (J)			1.8	3

Time Series

Constituent: Boron (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.895			
9/8/2016	3.35				
12/7/2016	3.63				
12/8/2016		0.841			
3/30/2017	3.57	0.937			
3/31/2017			2.91		0.407
4/12/2017					0.207
5/12/2017			3.24	1.8	0.311
6/16/2017			3.42	1.88	0.381
7/13/2017	3.41	0.933	3.46	1.97	0.323
8/8/2017				2.1	
10/26/2017	3.41	0.873	3.21	2.05	0.779
11/15/2017					0.667
3/1/2018	2.86				
3/2/2018		0.974	3.49	2.05	0.0478
7/12/2018	3	0.92			
7/13/2018			3.1	1.7	0.043
11/8/2018	3.4	0.8	3.5	1.8	0.054
3/13/2019	3.4	0.8	3.5	1.9	0.028 (J)
10/16/2019				1.5	0.38
10/17/2019			3.6		
10/18/2019	3.6	0.9			
3/4/2020		0.86			
3/9/2020	2.9		3.6	1.8	0.035 (J)

Time Series

Constituent: Cadmium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				0.0002 (J)	0.0002 (J)
12/7/2016				0.0001 (J)	0.0002 (J)
3/28/2017	<0.0025	<0.0025	<0.0025		
3/30/2017				0.0001 (J)	0.0002 (J)
5/11/2017	8E-05 (J)				
5/12/2017			<0.0025		
5/15/2017		<0.0025			
6/15/2017	<0.0025	<0.0025			
6/16/2017			<0.0025		
7/11/2017		<0.0025	<0.0025		
7/12/2017	<0.0025				
7/13/2017				<0.0025	0.0002 (J)
8/8/2017		<0.0025			
10/24/2017	<0.0025	<0.0025	<0.0025		
10/26/2017				<0.0025	0.0002 (J)
2/27/2018		<0.0025	<0.0025		
3/1/2018				<0.0025	<0.0025
3/8/2018	<0.0025				
7/12/2018	0.00013 (J)			<0.0025	0.00024 (J)
11/6/2018		<0.0025	<0.0025		
11/7/2018	<0.0025				
11/8/2018				<0.0025	<0.001 (J)
8/27/2019		<0.0025	<0.0025		
8/28/2019	<0.0025			<0.0025	0.0003 (J)
10/15/2019		<0.0025	<0.0025		
10/16/2019	<0.0025				
10/18/2019				<0.0025	0.00016 (J)
3/2/2020		0.00041 (J)	<0.0025		
3/9/2020	<0.0025			<0.0025	0.00017 (J)

Time Series

Constituent: Cadmium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.0008 (J)			
9/8/2016	<0.0025				
12/7/2016	<0.0025				
12/8/2016		0.0007 (J)			
3/30/2017	<0.0025	0.0007 (J)			
3/31/2017			<0.0025		0.0001 (J)
5/12/2017			<0.0025	8E-05 (J)	0.0002 (J)
6/16/2017			<0.0025	<0.0025	0.0002 (J)
7/13/2017	<0.0025	0.0008 (J)	<0.0025	<0.0025	<0.0025
8/8/2017				<0.0025	
10/26/2017	<0.0025	0.0008 (J)	<0.0025	<0.0025	<0.0025
11/15/2017					<0.0025
3/1/2018	<0.0025				
3/2/2018		<0.0025	<0.0025	<0.0025	<0.0025
7/12/2018	<0.0025	0.00087 (J)			
7/13/2018			<0.0025	0.00019 (J)	<0.0025
11/8/2018	<0.0025	<0.001 (J)	<0.0025	<0.001 (J)	<0.0025
8/28/2019	<0.0025	0.00087 (J)	0.00017 (J)	0.00017 (J)	<0.0025
10/16/2019				0.00017 (J)	0.00017 (J)
10/17/2019			<0.0025		
10/18/2019	<0.0025	0.00088 (J)			
3/4/2020		0.00093 (J)			
3/9/2020	<0.0025		0.00021 (J)	0.00026 (J)	<0.0025

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				52.5	70.3
12/7/2016				29.7	38.4
3/28/2017	30.8	5.14	8.31		
3/30/2017				62.6	80.3
5/11/2017	35.8				
5/12/2017			8.04		
5/15/2017		6.5			
6/15/2017	36	5.38			
6/16/2017			7.66		
7/11/2017		5.96	7.71		
7/12/2017	40.3				
7/13/2017				64.1	90.8
8/8/2017		5.2			
10/24/2017	30.3	4.93	6.86		
10/26/2017				60.8	81.3
2/27/2018		<25	<25		
3/1/2018				57	81.8
3/8/2018	39.8				
7/12/2018	34.7			59.1	86.7
11/6/2018		5.5	5.7		
11/7/2018	28.6				
11/8/2018				53.6	86.6
3/12/2019		5.1	5.5		
3/13/2019	26.7			54.8	85.3
10/15/2019		5.1	5.1		
10/16/2019	17.7				
10/18/2019				52.5	97.8
3/2/2020		5.3	5.8		
3/9/2020	23.7			64.2	91.9

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		39.6			
9/8/2016	87.2				
12/7/2016	96.7				
12/8/2016		37.9			
3/30/2017	98.9	43.9			
3/31/2017			39.9		18.6 (J)
5/12/2017			43.6	51.7	18.9 (J)
6/16/2017			42.5	47.9	17.7
7/13/2017	95	46.2	43.7	52.3	17.6
8/8/2017				46.3	
10/26/2017	90.6	41.8	40.4	48.2	33.3
11/15/2017					30.6
3/1/2018	79.6				
3/2/2018		43.2	40.1	48.9	8.09
7/12/2018	89.8	47.1			
7/13/2018			43.3	52.4	7.9
11/8/2018	89	43.5	40.1	46.8	8.5
3/13/2019	96.3	41	41.2	47.5	7.6
10/16/2019				49.7	16.2
10/17/2019			46.9		
10/18/2019	108	44.9			
3/4/2020		49.6			
3/9/2020	100		46.9	54	8.6

Time Series

Constituent: Chloride (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				6.2	7.4
12/7/2016				6.1	7.4
3/28/2017	3.7	3.8	3.6		
3/30/2017				6.3	7.7
5/11/2017	2.3				
5/12/2017			3.8		
5/15/2017		2.2			
6/15/2017	2.6	2			
6/16/2017			3.4		
7/11/2017		2.1	3.1		
7/12/2017	2.3				
7/13/2017				6.5	7.5
8/8/2017		2.2			
10/24/2017	2.7	2.4	3.2		
10/26/2017				6.4	8.2
11/15/2017	2.2		3.1		
2/27/2018		2.5	3.2		
3/1/2018				6.3	8.1
3/8/2018	2.4				
7/12/2018	2.2			5.8	8
11/6/2018		2.3	2.6		
11/7/2018	2.3				
11/8/2018				5.8	8.1
3/12/2019		2.5	3.3		
3/13/2019	3.6			6.9	9.1
10/15/2019		2.2	3.3		
10/16/2019	2				
10/18/2019				5.8	8.6
3/2/2020		1.9	3		
3/9/2020	1.8			6	8.1

Time Series

Constituent: Chloride (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		20			
9/8/2016	9.2				
12/7/2016	8.9				
12/8/2016		18			
3/30/2017	8.7	20			
3/31/2017			5.7		4.4
5/12/2017			5.6	4.2	4.4
6/16/2017			5.5	4.2	4.7
7/13/2017	8.4	21	5.2	4.4	4.7
8/8/2017				4.2	
10/26/2017	8.3	21	6	4.4	4.2
11/15/2017					4.7
3/1/2018	8.1				
3/2/2018		19.5	5.8	4.2	6.4
7/12/2018	7.7	19.9			
7/13/2018			5.9	4	5.3
11/8/2018	7.7	19.3	6.1	<0.25	5.9
3/13/2019	8.2	19.7	6.8	4.6	6.2
10/16/2019				4.2	4.7
10/17/2019			6.9		
10/18/2019	8	19.2			
3/4/2020		20.6			
3/9/2020	7.5		6.7	3.6	5.7

Time Series

Constituent: Chromium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.01	<0.01
12/7/2016				<0.01	<0.01
3/28/2017	<0.01	0.0008 (J)	0.0023 (J)		
3/30/2017				<0.01	<0.01
5/11/2017	<0.01				
5/12/2017			0.0004 (J)		
5/15/2017		0.0006 (J)			
6/15/2017	<0.01	0.0006 (J)			
6/16/2017			0.0005 (J)		
7/11/2017		0.0005 (J)	<0.01		
7/12/2017	<0.01				
7/13/2017				<0.01	<0.01
8/8/2017		0.0005 (J)			
10/24/2017	<0.01	0.0005 (J)	<0.01		
10/26/2017				0.0007 (J)	0.0005 (J)
2/27/2018		<0.01	<0.01		
3/1/2018				<0.01	<0.01
3/8/2018	<0.01				
7/12/2018	<0.01			<0.01	<0.01
11/6/2018		<0.01	<0.01		
11/7/2018	<0.01				
11/8/2018				<0.01	<0.01
8/27/2019		0.00071 (J)	0.0018 (J)		
8/28/2019	<0.01			<0.01	<0.01
10/15/2019		0.034 (O)	0.0025 (J)		
10/16/2019	<0.01				
10/18/2019				<0.01	0.00092 (J)
3/2/2020		0.0013 (J)	0.00045 (J)		
3/9/2020	<0.01			<0.01	0.00044 (J)

Time Series

Constituent: Chromium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		<0.01			
9/8/2016	<0.01				
12/7/2016	<0.01				
12/8/2016		<0.01			
3/30/2017	<0.01	0.0007 (J)			
3/31/2017			0.0005 (J)		<0.01
5/12/2017			0.0007 (J)	<0.01	<0.01
6/16/2017			<0.01	<0.01	<0.01
7/13/2017	<0.01	0.0006 (J)	<0.01	0.0005 (J)	<0.01
8/8/2017				<0.01	
10/26/2017	<0.01	0.0007 (J)	<0.01	<0.01	<0.01
11/15/2017					<0.01
3/1/2018	<0.01				
3/2/2018		<0.01	<0.01	<0.01	<0.01
7/12/2018	<0.01	<0.01			
7/13/2018			<0.01	<0.01	<0.01
11/8/2018	<0.01	<0.01	<0.01	<0.01	<0.01
8/28/2019	<0.01	0.00061 (J)	<0.01	<0.01	0.00049 (J)
10/16/2019				<0.01	<0.01
10/17/2019			<0.01		
10/18/2019	<0.01	0.00078 (J)			
3/4/2020		0.0011 (J)			
3/9/2020	<0.01		0.00088 (J)	<0.01	0.0012 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.005	0.0015 (J)
12/7/2016				0.0005 (J)	0.0017 (J)
3/28/2017	0.025	0.0034 (J)	0.0033 (J)		
3/30/2017				<0.005	0.0016 (J)
5/11/2017	0.0281				
5/12/2017			0.0016 (J)		
5/15/2017		0.0024 (J)			
6/15/2017	0.0322	0.0014 (J)			
6/16/2017			0.0011 (J)		
7/11/2017		0.0007 (J)	0.0008 (J)		
7/12/2017	0.0247				
7/13/2017				0.0003 (J)	0.0016 (J)
8/8/2017		0.0007 (J)			
10/24/2017	0.0267	<0.005	0.0004 (J)		
10/26/2017				0.0003 (J)	0.0016 (J)
2/27/2018		<0.005	<0.005		
3/1/2018				<0.005	<0.005
3/8/2018	0.027				
7/12/2018	0.024			<0.005	0.0015 (J)
11/6/2018		<0.005	<0.005		
11/7/2018	0.018				
11/8/2018				<0.005	<0.01 (J)
8/27/2019		<0.005	<0.005		
8/28/2019	0.013			<0.005	0.0016 (J)
10/15/2019		0.00064 (J)	<0.005		
10/16/2019	0.009				
10/18/2019				<0.005	0.0016 (J)
3/2/2020		0.00037 (J)	<0.005		
3/9/2020	0.016			<0.005	0.0016 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.0382			
9/8/2016	0.0068 (J)				
12/7/2016	0.0071 (J)				
12/8/2016		0.0318			
3/30/2017	0.006 (J)	0.0364			
3/31/2017			0.0064 (J)		0.0022 (J)
5/12/2017			0.0037 (J)	0.0015 (J)	0.0016 (J)
6/16/2017			0.0041 (J)	0.0003 (J)	0.0009 (J)
7/13/2017	0.0063 (J)	0.0394	0.0037 (J)	0.0005 (J)	0.0004 (J)
8/8/2017				<0.005	
10/26/2017	0.0062 (J)	0.0371	0.0022 (J)	<0.005	0.0031 (J)
11/15/2017					0.0028 (J)
3/1/2018	<0.005				
3/2/2018		0.0425	<0.005	<0.005	<0.005
7/12/2018	0.0059 (J)	0.044			
7/13/2018			0.0017 (J)	<0.005	<0.005
11/8/2018	<0.01 (J)	0.036	<0.01 (J)	<0.005	<0.005
8/28/2019	0.0067	0.044	0.0013 (J)	<0.005	<0.005
10/16/2019				<0.005	<0.005
10/17/2019			0.0013 (J)		
10/18/2019	0.007	0.043			
3/4/2020		0.055			
3/9/2020	0.007		0.0015 (J)	<0.005	<0.005

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				0.827 (U)	1.48
12/7/2016				0.56 (U)	0.22 (U)
3/28/2017	6.36	0.866 (U)	0.257 (U)		
3/30/2017				0.302 (U)	0.519 (U)
5/11/2017	3.45				
5/12/2017			0.165 (U)		
5/15/2017		0.288 (U)			
6/15/2017	4.58	1.01 (U)			
6/16/2017			0.732 (U)		
7/11/2017		0.254 (U)	0.461 (U)		
7/12/2017	4.37				
7/13/2017				0.731 (U)	1.11
8/8/2017		1.48			
10/24/2017	4.46	0.472 (U)	0.724 (U)		
10/26/2017				1.04 (U)	1.13 (U)
2/27/2018		1.22	0.714 (U)		
3/1/2018				0.344 (U)	0.985 (U)
3/8/2018	2.14				
7/10/2018		0.362 (U)	0.426 (U)		
7/12/2018	4.65			0.566 (U)	0.615 (U)
11/6/2018		0.859 (U)	0.455 (U)		
11/7/2018	3.05				
11/8/2018				0.623 (U)	0.58 (U)
8/27/2019		1.97	1.3 (U)		
8/28/2019	2.68			1.24 (U)	0.517 (U)
10/15/2019		0.319 (U)	1.21 (U)		
10/16/2019	1.89				
1/6/2020				2.01	0.527 (U)
3/2/2020		0.419 (U)	1.3		
3/9/2020	3.51			0.499 (U)	1.04

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		1.44			
9/8/2016	1.44				
12/7/2016	2.16				
12/8/2016		2.56			
3/30/2017	0.264 (U)	0.0844 (U)			
3/31/2017			0.404 (U)		1.39
5/12/2017			0.206 (U)	1.18	1.29
6/16/2017			0.966 (U)	0.332 (U)	1.61
7/13/2017	0.517 (U)	0.963 (U)	0.387 (U)	0.304 (U)	1.14
8/8/2017				1.4	
10/26/2017	0.875 (U)	0.748 (U)	0.619 (U)	0.477 (U)	2.04
11/15/2017					1.99
3/1/2018	1.24				
3/2/2018		0.485 (U)	1.31	1.13	0.918 (U)
7/12/2018	0.935 (U)	0.231 (U)			
7/13/2018			0.667 (U)	0.407 (U)	1.36 (U)
11/8/2018	1.15 (U)	0.465 (U)	0.911 (U)	0.393 (U)	0.719 (U)
8/28/2019	1.15 (U)	0.592 (U)	0.751 (U)	1.77	1.38
10/16/2019				2.12	0.826 (U)
1/6/2020	1.4	1.6	0.965 (U)		
3/4/2020		1.62			
3/9/2020	1.36		0.819 (U)	1.33	1.39

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				0.08 (J)	0.1 (J)
12/7/2016				0.21 (J)	0.27 (J)
3/28/2017	0.12 (J)	1.2	0.06 (J)		
3/30/2017				0.05 (J)	0.12 (J)
5/11/2017	0.07 (J)				
5/12/2017			<0.3		
5/15/2017		0.005 (J)			
6/15/2017	0.19 (J)	0.02 (J)			
6/16/2017			0.008 (J)		
7/11/2017		0.06 (J)	0.007 (J)		
7/12/2017	0.1 (J)				
7/13/2017				0.06 (J)	0.13 (J)
8/8/2017		0.04 (J)			
10/24/2017	0.06 (J)	<0.3	<0.3		
10/26/2017				0.08 (J)	0.47
11/15/2017	0.05 (J)		<0.3		
2/27/2018		<0.3	<0.3		
3/1/2018				0.22	<0.3
3/8/2018	<0.3				
7/12/2018	0.071 (J)			0.32	0.23 (J)
11/6/2018		<0.3	<0.3		
11/7/2018	<0.3				
11/8/2018				<0.3	<0.3
3/12/2019		0.039 (J)	<0.3		
3/13/2019	0.13 (J)			0.08 (J)	0.084 (J)
8/27/2019		<0.3	<0.3		
8/28/2019	0.42			0.074 (J)	0.066 (J)
10/15/2019		<0.3	<0.3		
10/16/2019	0.11 (J)				
10/18/2019				0.075 (J)	0.073 (J)
3/2/2020		<0.3	<0.3		
3/9/2020	0.1 (J)			0.054 (J)	0.064 (J)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.5			
9/8/2016	0.17 (J)				
12/7/2016	0.33				
12/8/2016		0.35			
3/30/2017	0.17 (J)	0.21 (J)			
3/31/2017			0.02 (J)		0.16 (J)
5/12/2017			<0.3	0.37	0.12 (J)
6/16/2017			0.03 (J)	0.12 (J)	0.16 (J)
7/13/2017	0.14 (J)	0.2 (J)	0.03 (J)	0.12 (J)	0.13 (J)
8/8/2017				0.11 (J)	
10/26/2017	0.54	0.5	<0.3	0.11 (J)	0.29 (J)
11/15/2017					0.28 (J)
3/1/2018	0.13				
3/2/2018		0.33	<0.3	0.23	0.18
7/12/2018	0.13 (J)	0.57			
7/13/2018			0.25 (J)	0.099 (J)	0.19 (J)
11/8/2018	<0.3 (J)	<0.3 (J)	0.5	<0.3 (J)	<0.3 (J)
3/13/2019	0.085 (J)	0.15 (J)	0.07 (J)	0.12 (J)	0.086 (J)
8/28/2019	0.086 (J)	0.14	<0.3	0.1	0.07 (J)
10/16/2019				0.093 (J)	0.13 (J)
10/17/2019			0.038 (J)		
10/18/2019	0.14 (J)	0.13 (J)			
3/4/2020		0.11 (J)			
3/9/2020	0.075 (J)		<0.3	0.082 (J)	0.068 (J)

Time Series

Constituent: Lead (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.005	<0.005
12/7/2016				<0.005	<0.005
3/28/2017	<0.005	9E-05 (J)	<0.005		
3/30/2017				0.0014 (J)	<0.005
5/11/2017	<0.005				
5/12/2017			8E-05 (J)		
5/15/2017		0.0001 (J)			
6/15/2017	<0.005	0.0002 (J)			
6/16/2017			<0.005		
7/11/2017		<0.005	<0.005		
7/12/2017	<0.005				
7/13/2017				<0.005	<0.005
8/8/2017		7E-05 (J)			
10/24/2017	<0.005	<0.005	<0.005		
10/26/2017				<0.005	0.0001 (J)
2/27/2018		<0.005	<0.005		
3/1/2018				<0.005	<0.005
3/8/2018	<0.005				
7/12/2018	<0.005			<0.005	<0.005
11/6/2018		<0.005	<0.005		
11/7/2018	<0.005				
11/8/2018				<0.005	<0.005
8/27/2019		7.8E-05 (J)	<0.005		
8/28/2019	<0.005			6.1E-05 (J)	<0.005
10/15/2019		<0.005	<0.005		
10/16/2019	<0.005				
10/18/2019				<0.005	7.4E-05 (J)
3/2/2020		7.4E-05 (J)	<0.005		
3/9/2020	<0.005			<0.005	6.1E-05 (J)

Time Series

Constituent: Lead (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		<0.005			
9/8/2016	<0.005				
12/7/2016	<0.005				
12/8/2016		<0.005			
3/30/2017	<0.005	7E-05 (J)			
3/31/2017			<0.005		<0.005
5/12/2017			9E-05 (J)	<0.005	0.0001 (J)
6/16/2017			<0.005	<0.005	<0.005
7/13/2017	<0.005	<0.005	<0.005	<0.005	<0.005
8/8/2017				<0.005	
10/26/2017	<0.005	7E-05 (J)	<0.005	<0.005	<0.005
11/15/2017					9E-05 (J)
3/1/2018	<0.005				
3/2/2018		<0.005	<0.005	<0.005	<0.005
7/12/2018	<0.005	<0.005			
7/13/2018			<0.005	<0.005	<0.005
11/8/2018	<0.005	<0.005	<0.005	<0.005	<0.005
8/28/2019	8E-05 (J)	8.1E-05 (J)	<0.005	<0.005	<0.005
10/16/2019				<0.005	<0.005
10/17/2019			<0.005		
10/18/2019	<0.005	0.00015 (J)			
3/4/2020		0.00017 (J)			
3/9/2020	<0.005		4.7E-05 (J)	<0.005	9E-05 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.03	0.0032 (J)
12/7/2016				<0.03	0.0035 (J)
3/28/2017	0.0108 (J)	0.0054 (J)	0.0025 (J)		
3/30/2017				0.0029 (J)	0.0035 (J)
5/11/2017	0.0087 (J)				
5/12/2017			0.0016 (J)		
5/15/2017		0.002 (J)			
6/15/2017	0.0088 (J)	<0.03			
6/16/2017			0.0016 (J)		
7/11/2017		<0.03	<0.03		
7/12/2017	0.0075 (J)				
7/13/2017				<0.03	0.0032 (J)
8/8/2017		<0.03			
10/24/2017	0.0103 (J)	<0.03	<0.03		
10/26/2017				0.0018 (J)	0.0034 (J)
2/27/2018		<0.03	0.0013 (J)		
3/1/2018				0.0024 (J)	0.0033 (J)
3/8/2018	0.011 (J)				
7/12/2018	0.0084 (J)			0.0028 (J)	0.0034 (J)
11/6/2018		<0.03	<0.03		
11/7/2018	<0.03				
11/8/2018				<0.03	<0.03
8/27/2019		<0.03	0.0014 (J)		
8/28/2019	0.0092 (J)			0.0025 (J)	0.0034 (J)
10/15/2019		<0.03	0.0012 (J)		
10/16/2019	0.0094 (J)				
10/18/2019				0.0026 (J)	0.0032 (J)
3/2/2020		<0.03	0.0011 (J)		
3/9/2020	0.0077 (J)			0.0017 (J)	0.0033 (J)

Time Series

Constituent: Lithium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.0022 (J)			
9/8/2016	<0.03				
12/7/2016	<0.03				
12/8/2016		<0.03			
3/30/2017	<0.03	0.0023 (J)			
3/31/2017			0.0052 (J)		0.0031 (J)
5/12/2017			0.0054 (J)	0.0016 (J)	0.003 (J)
6/16/2017			0.0048 (J)	<0.03	0.0031 (J)
7/13/2017	<0.03	0.0023 (J)	0.0044 (J)	<0.03	0.0029 (J)
8/8/2017				<0.03	
10/26/2017	<0.03	0.0021 (J)	0.0043 (J)	<0.03	0.0034 (J)
11/15/2017					0.0034 (J)
3/1/2018	<0.03				
3/2/2018		0.0023 (J)	0.0047 (J)	<0.03	0.0028 (J)
7/12/2018	<0.03	0.0022 (J)			
7/13/2018			0.0041 (J)	<0.03	0.0026 (J)
11/8/2018	<0.03	<0.03	<0.03	<0.03	<0.03
8/28/2019	<0.03	0.0022 (J)	0.0046 (J)	<0.03	0.0024 (J)
10/16/2019				<0.03	0.0032 (J)
10/17/2019			0.0047 (J)		
10/18/2019	<0.03	0.0024 (J)			
3/4/2020		0.0027 (J)			
3/9/2020	<0.03		0.0048 (J)	<0.03	0.0025 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.0002	<0.0002
12/7/2016				<0.0002	<0.0002
3/28/2017	<0.0002	<0.0002	<0.0002		
3/30/2017				6E-05 (J)	7E-05 (J)
5/11/2017	<0.0002				
5/12/2017			6E-05 (J)		
5/15/2017		<0.0002			
6/15/2017	8E-05 (J)	7E-05 (J)			
6/16/2017			7E-05 (J)		
7/11/2017		<0.0002	<0.0002		
7/12/2017	<0.0002				
7/13/2017				<0.0002	<0.0002
8/8/2017		<0.0002			
10/24/2017	<0.0002	<0.0002	<0.0002		
10/26/2017				<0.0002	<0.0002
2/27/2018		<0.0002	<0.0002		
3/1/2018				<0.0002	<0.0002
3/8/2018	<0.0002				
7/12/2018	<0.0002			4.4E-05 (J)	4E-05 (J)
11/6/2018		<0.0002	<0.0005 (J)		
11/7/2018	<0.0002				
11/8/2018				<0.0002	<0.0002
8/27/2019		<0.0002	<0.0002		
8/28/2019	<0.0002			<0.0002	<0.0002
10/15/2019		<0.0002	<0.0002		
10/16/2019	<0.0002				
10/18/2019				<0.0002	<0.0002
3/2/2020		<0.0002	<0.0002		
3/9/2020	<0.0002			<0.0002	<0.0002

Time Series

Constituent: Mercury (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		4.4E-05 (J)			
9/8/2016	<0.0002				
12/7/2016	<0.0002				
12/8/2016		<0.0002			
3/30/2017	5.9E-05 (J)	9E-05 (J)			
3/31/2017			<0.0002		<0.0002
5/12/2017			<0.0002	<0.0002	<0.0002
6/16/2017			7E-05 (J)	7E-05 (J)	7E-05 (J)
7/13/2017	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
8/8/2017				<0.0002	
10/26/2017	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
11/15/2017					<0.0002
3/1/2018	<0.0002				
3/2/2018		<0.0002	<0.0002	<0.0002	<0.0002
7/12/2018	<0.0002	4.5E-05 (J)			
7/13/2018			<0.0002	<0.0002	<0.0002
11/8/2018	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
8/28/2019	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10/16/2019				<0.0002	<0.0002
10/17/2019			<0.0002		
10/18/2019	<0.0002	<0.0002			
3/4/2020		<0.0002			
3/9/2020	<0.0002		<0.0002	<0.0002	<0.0002

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.01	<0.01
12/7/2016				<0.01	<0.01
3/28/2017	0.0242	<0.01	0.0009 (J)		
3/30/2017				<0.01	0.0011 (J)
5/11/2017	0.0375				
5/12/2017			<0.01		
5/15/2017		<0.01			
6/15/2017	0.0409	<0.01			
6/16/2017			<0.01		
7/11/2017		<0.01	<0.01		
7/12/2017	0.0321				
7/13/2017				<0.01	0.0012 (J)
8/8/2017		<0.01			
10/24/2017	0.0227	<0.01	<0.01		
10/26/2017				<0.01	0.0011 (J)
2/27/2018		<0.01	<0.01		
3/1/2018				<0.01	<0.01
3/8/2018	0.035				
7/12/2018	0.034			<0.01	<0.01
11/6/2018		<0.01	<0.01		
11/7/2018	0.029				
11/8/2018				<0.01	<0.01
8/27/2019		<0.01	<0.01		
8/28/2019	0.031			<0.01	<0.01
10/15/2019		<0.01	<0.01		
10/16/2019	0.037				
10/18/2019				<0.01	<0.01
3/2/2020		<0.01	<0.01		
3/9/2020	0.026			<0.01	0.001 (J)

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		<0.01			
9/8/2016	<0.01				
12/7/2016	<0.01				
12/8/2016		<0.01			
3/30/2017	<0.01	<0.01			
3/31/2017			<0.01		0.0124
5/12/2017			<0.01	0.275	0.0117
6/16/2017			<0.01	0.19	0.0087 (J)
7/13/2017	<0.01	<0.01	<0.01	0.211	0.0053 (J)
8/8/2017				0.207	
10/26/2017	<0.01	<0.01	<0.01	0.226	0.0244
11/15/2017					0.0237
3/1/2018	<0.01				
3/2/2018		<0.01	<0.01	0.215	0.0072 (J)
7/12/2018	<0.01	<0.01			
7/13/2018			<0.01	0.22	0.007 (J)
11/8/2018	<0.01	<0.01	<0.01	0.2	<0.01 (J)
8/28/2019	<0.01	<0.01	<0.01	0.21	0.0059 (J)
10/16/2019				0.22	0.01
10/17/2019			<0.01		
10/18/2019	<0.01	<0.01			
3/4/2020		<0.01			
3/9/2020	<0.01		<0.01	0.19	0.0062 (J)

Time Series

Constituent: pH (SU) Analysis Run 4/20/2020 3:26 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				6.32	6.01
12/7/2016				6.32	6.07
3/28/2017	6.29		5.94		
3/30/2017				6.22	5.97
5/11/2017	6.6				
5/12/2017			5.46		
5/15/2017		5.72			
6/15/2017	6.41	5.74			
6/16/2017			5.81		
7/11/2017		5.62	5.74		
7/12/2017	5.91				
7/13/2017				6.3	6.11
8/8/2017		5.6			
10/24/2017	5.51	5.71	5.86		
10/26/2017					6.06
11/15/2017	6.5		5.77		
2/27/2018		5.5	5.66		
3/1/2018				6.28	6.05
3/8/2018	6.18				
7/10/2018		5.44	5.63		
7/12/2018	6.33			6.43	6.05
11/6/2018		5.71	5.79		
11/7/2018	6.22				
11/8/2018				6.36	6.07
3/12/2019		5.52	5.74		
3/13/2019	6			6.26	6.05
8/27/2019		5.53	5.87		
8/28/2019	6.04			6.27	5.98
10/15/2019		5.61	5.88		
10/16/2019	6.69				
10/18/2019				6.26	6
3/2/2020		5.54	5.77		
3/9/2020	6.41 (D)			6.34	6.12

Time Series

Constituent: pH (SU) Analysis Run 4/20/2020 3:26 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		4.77			
9/8/2016	6.47				
12/7/2016	6.43				
12/8/2016		4.77			
3/30/2017	6.42	4.84			
3/31/2017			6.25		6.26
4/12/2017					6.19
5/12/2017			6.23	6.63	6.2
6/16/2017			6.22	6.63	6.22
7/13/2017	6.47	4.85	6.15	6.84	6.35
8/8/2017				6.57	
10/26/2017	6.49	4.86	6.64	7.01	6.69
11/15/2017					6.22
3/1/2018	6.37				
3/2/2018		4.67	6.18	6.58	6.1
7/12/2018	6.45	4.63			
7/13/2018			6.19	6.62	5.95
11/8/2018	6.49	4.79	6.23	6.5	6
3/13/2019	6.28	4.6	6.19	6.57	6.08
8/28/2019	6.41	4.68	6.22	6.6	6.09
10/16/2019				6.6	6.19
10/17/2019			6.14		
10/18/2019	6.35	4.71			
3/4/2020		4.64			
3/9/2020	6.37		6.23	6.6	6.12

Time Series

Constituent: Selenium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.01	<0.01
12/7/2016				<0.01	<0.01
3/28/2017	<0.01	<0.01	<0.01		
3/30/2017				<0.01	<0.01
5/11/2017	<0.01				
5/12/2017			<0.01		
5/15/2017		<0.01			
6/15/2017	<0.01	<0.01			
6/16/2017			<0.01		
7/11/2017		<0.01	<0.01		
7/12/2017	<0.01				
7/13/2017				<0.01	<0.01
8/8/2017		<0.01			
10/24/2017	<0.01	<0.01	<0.01		
10/26/2017				<0.01	<0.01
2/27/2018		<0.01	<0.01		
3/1/2018				<0.01	<0.01
3/8/2018	<0.01				
7/12/2018	<0.01			<0.01	<0.01
11/6/2018		<0.01	<0.01		
11/7/2018	<0.01				
11/8/2018				<0.01	<0.01
8/27/2019		<0.01	<0.01		
8/28/2019	<0.01			<0.01	<0.01
10/15/2019		<0.01	<0.01		
10/16/2019	<0.01				
10/18/2019				<0.01	<0.01
3/2/2020		<0.01	<0.01		
3/9/2020	<0.01			<0.01	<0.01

Time Series

Constituent: Selenium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		0.0019 (J)			
9/8/2016	<0.01				
12/7/2016	<0.01				
12/8/2016		0.0022 (J)			
3/30/2017	<0.01	0.0023 (J)			
3/31/2017			<0.01		<0.01
5/12/2017			<0.01	<0.01	<0.01
6/16/2017			<0.01	<0.01	<0.01
7/13/2017	<0.01	0.0025 (J)	<0.01	<0.01	<0.01
8/8/2017				<0.01	
10/26/2017	<0.01	0.0036 (J)	<0.01	<0.01	<0.01
11/15/2017					<0.01
3/1/2018	<0.01				
3/2/2018		<0.01	<0.01	<0.01	<0.01
7/12/2018	<0.01	<0.01			
7/13/2018			<0.01	<0.01	<0.01
11/8/2018	<0.01	<0.01 (J)	<0.01	<0.01	<0.01
8/28/2019	<0.01	0.0017 (J)	<0.01	<0.01	<0.01
10/16/2019				<0.01	<0.01
10/17/2019			<0.01		
10/18/2019	<0.01	0.0027 (J)			
3/4/2020		0.0049 (J)			
3/9/2020	<0.01		<0.01	<0.01	<0.01

Time Series

Constituent: Sulfate (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				97	270
12/7/2016				100	250
3/28/2017	49	2.7	17		
3/30/2017				110	290
5/11/2017	21				
5/12/2017			17		
5/15/2017		1			
6/15/2017	16	0.86 (J)			
6/16/2017			11		
7/11/2017		1.4	11		
7/12/2017	10				
7/13/2017				200 (o)	270
8/8/2017		1.5			
10/24/2017	15	1.4	9.6		
10/26/2017				97	260
11/15/2017	3.8		7.8		
2/27/2018		0.54 (J)	7.4		
3/1/2018				94.6	242
3/8/2018	9.7				
7/12/2018	8			89.2	256
11/6/2018		<1 (J)	7.3		
11/7/2018	12.8				
11/8/2018				102	291
3/12/2019		0.35 (J)	7		
3/13/2019	23.7			92.2	300
10/15/2019		0.16 (J)	7.4		
10/16/2019	15.1				
10/18/2019				76.4	239
3/2/2020		<1	8.5		
3/9/2020	9.5			90.3	244

Time Series

Constituent: Sulfate (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		230			
9/8/2016	280				
12/7/2016	250				
12/8/2016		270			
3/30/2017	310	240			
3/31/2017			110		21
5/12/2017			100	50	17
6/16/2017			100	47	20
7/13/2017	220	220	110	49	17
8/8/2017				48	
10/26/2017	210	220	100	48	31
11/15/2017					29
3/1/2018	166				
3/2/2018		219	98.5	44.7	10.1
7/12/2018	169	222			
7/13/2018			136	43.3	8.6
11/8/2018	200	273	118	43.5	9.7
3/13/2019	265	445	233	44.1	8.4
10/16/2019				32.1	13.3
10/17/2019			99.4		
10/18/2019	182	205			
3/4/2020		177			
3/9/2020	171		100	37.4	7.6

Time Series

Constituent: TDS (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				279	437
12/7/2016				300	478
3/28/2017	202	39	90		
3/30/2017				273	448
5/11/2017	241				
5/12/2017			92		
5/15/2017		88			
6/15/2017	251	65			
6/16/2017			100		
7/11/2017		25	59		
7/12/2017	218				
7/13/2017				312	504
8/8/2017		53			
10/24/2017	671 (o)	49	117		
10/26/2017				340	554
11/15/2017	241		90		
2/27/2018		43	79		
3/1/2018				311	492
3/8/2018	213				
7/12/2018	198			290	478
11/6/2018		65	85		
11/7/2018	200				
11/8/2018				295	507
3/12/2019		43	74		
3/13/2019	201			286	487
10/15/2019		70	89		
10/16/2019	126				
10/18/2019				269	494
3/2/2020		52	67		
3/9/2020	171			357	554

Time Series

Constituent: TDS (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		583 (o)			
9/8/2016	522				
12/7/2016	565				
12/8/2016		319			
3/30/2017	496	344			
3/31/2017			270		138
5/12/2017			287	300	243
6/16/2017			309	271	155
7/13/2017	508	386	275	246	122
8/8/2017				278	
10/26/2017	532	373	319	287	234
11/15/2017					188
3/1/2018	440				
3/2/2018		359	264	252	73
7/12/2018	463	365			
7/13/2018			297	275	95
11/8/2018	485	399	295	277	112
3/13/2019	526	351	278	267	95
10/16/2019				218	108
10/17/2019			281		
10/18/2019	489	360			
3/4/2020		400			
3/9/2020	508		209	188	115

Time Series

Constituent: Thallium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-37	DGWC-38
9/8/2016				<0.001	<0.001
12/7/2016				<0.001	<0.001
3/28/2017	<0.001	<0.001	6E-05 (J)		
3/30/2017				<0.001	0.0001 (J)
5/11/2017	<0.001				
5/12/2017			<0.001		
5/15/2017		<0.001			
6/15/2017	<0.001	<0.001			
6/16/2017			<0.001		
7/11/2017		<0.001	<0.001		
7/12/2017	<0.001				
7/13/2017				<0.001	0.0001 (J)
8/8/2017		<0.001			
10/24/2017	<0.001	<0.001	<0.001		
10/26/2017				<0.001	0.0001 (J)
2/27/2018		<0.001	<0.001		
3/1/2018				<0.001	<0.001
3/8/2018	<0.001				
7/12/2018	<0.001			<0.001	<0.001
11/6/2018		<0.001	<0.001		
11/7/2018	<0.001				
11/8/2018				<0.001	<0.001
8/27/2019		<0.001	<0.001		
8/28/2019	<0.001			<0.001	0.00014 (J)
10/15/2019		<0.001	<0.001		
10/16/2019	<0.001				
10/18/2019				<0.001	0.0001 (J)
3/2/2020		7.8E-05 (J)	<0.001		
3/9/2020	<0.001			<0.001	0.00016 (J)

Time Series

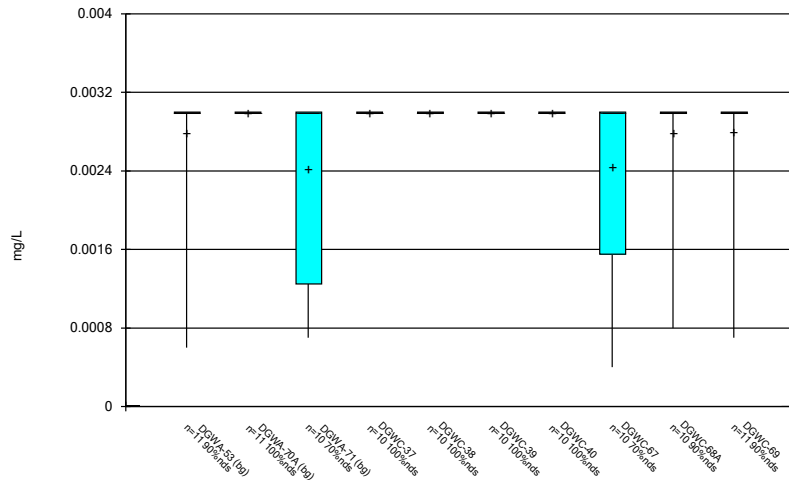
Constituent: Thallium (mg/L) Analysis Run 4/20/2020 3:26 PM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-39	DGWC-40	DGWC-67	DGWC-68A	DGWC-69
9/2/2016		<0.001			
9/8/2016	<0.001				
12/7/2016	<0.001				
12/8/2016		<0.001			
3/30/2017	0.0001 (J)	6E-05 (J)			
3/31/2017			<0.001		<0.001
5/12/2017			<0.001	<0.001	<0.001
6/16/2017			<0.001	<0.001	<0.001
7/13/2017	9E-05 (J)	6E-05 (J)	<0.001	<0.001	<0.001
8/8/2017				<0.001	
10/26/2017	0.0001 (J)	7E-05 (J)	<0.001	<0.001	<0.001
11/15/2017					<0.001
3/1/2018	<0.001				
3/2/2018		<0.001	<0.001	<0.001	<0.001
7/12/2018	<0.001	<0.001			
7/13/2018			<0.001	0.00015 (J)	<0.001
11/8/2018	<0.001	<0.001	<0.001	<0.001	<0.001
8/28/2019	6.9E-05 (J)	7E-05 (J)	<0.001	<0.001	<0.001
10/16/2019				<0.001	<0.001
10/17/2019			<0.001		
10/18/2019	<0.001	<0.001			
3/4/2020		6.8E-05 (J)			
3/9/2020	7.1E-05 (J)		<0.001	<0.001	<0.001

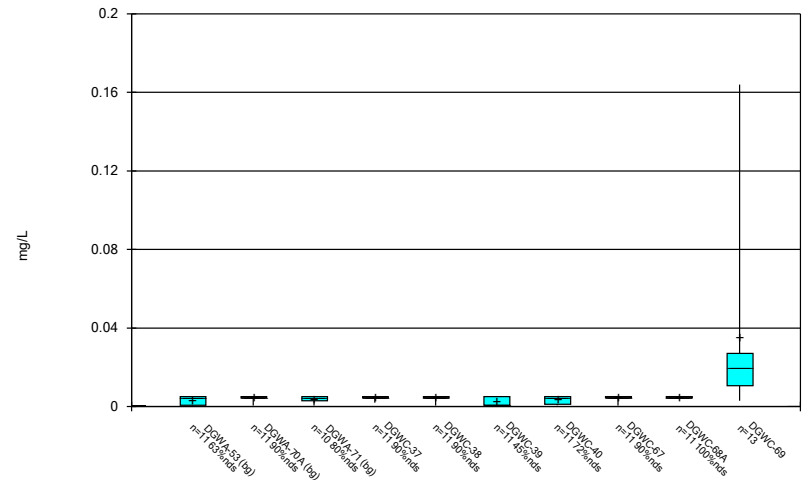
FIGURE B.

Box & Whiskers Plot



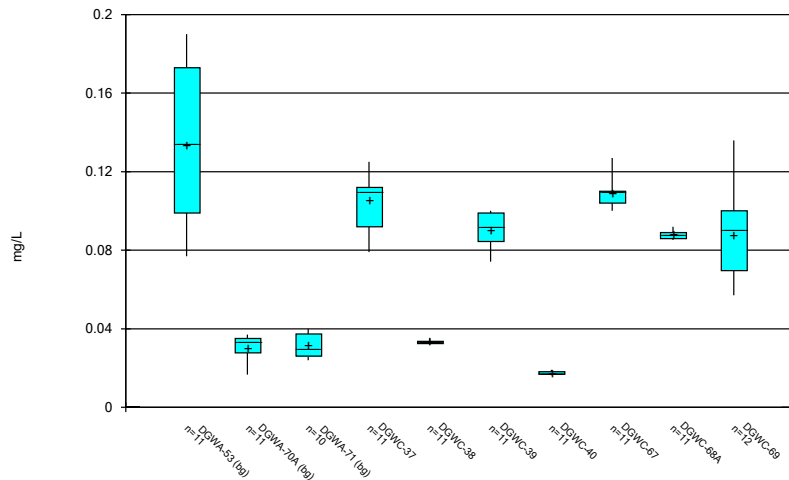
Constituent: Antimony Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



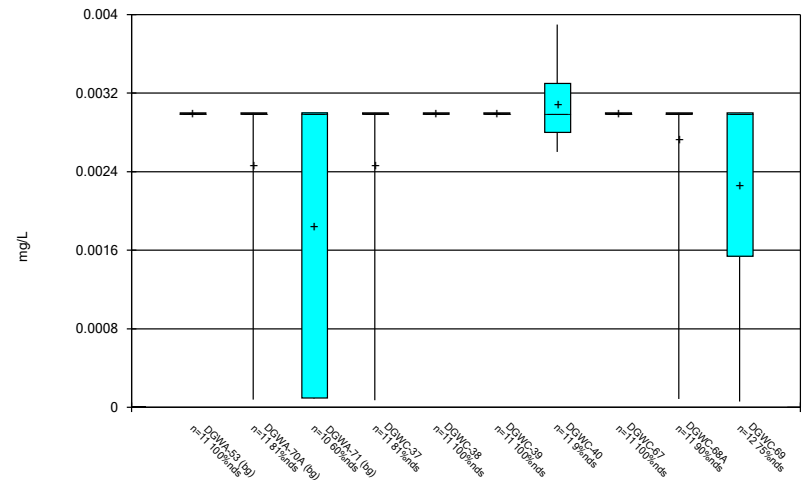
Constituent: Arsenic Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



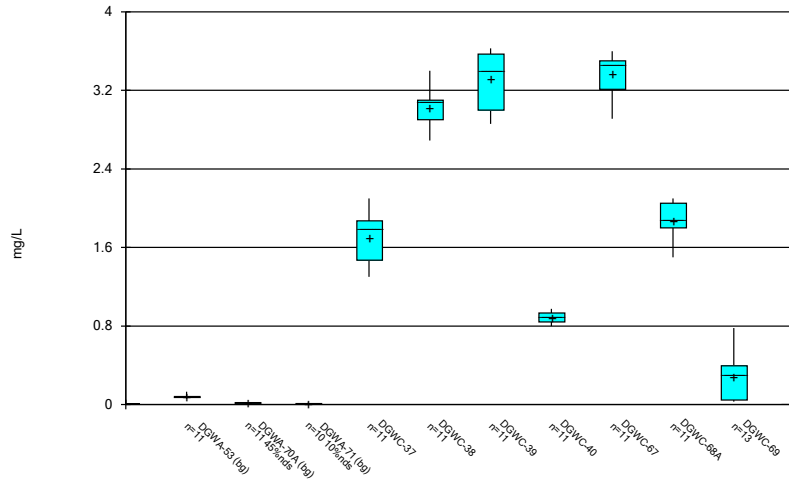
Constituent: Barium Analysis Run 4/20/2020 3:26 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



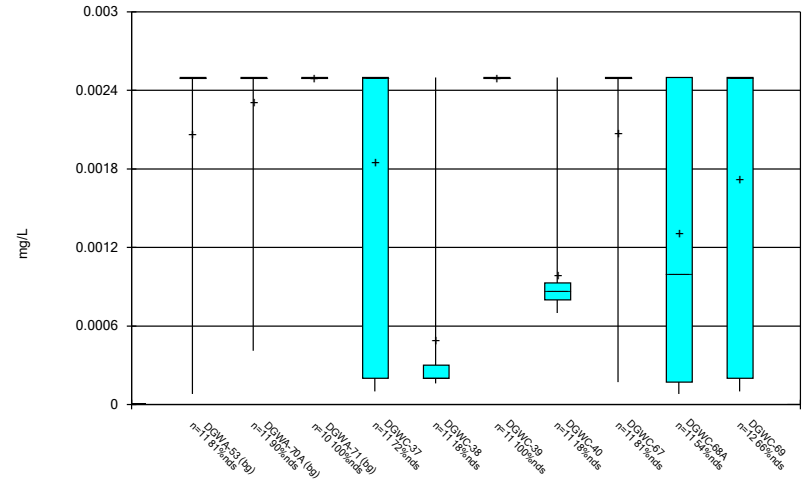
Constituent: Beryllium Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



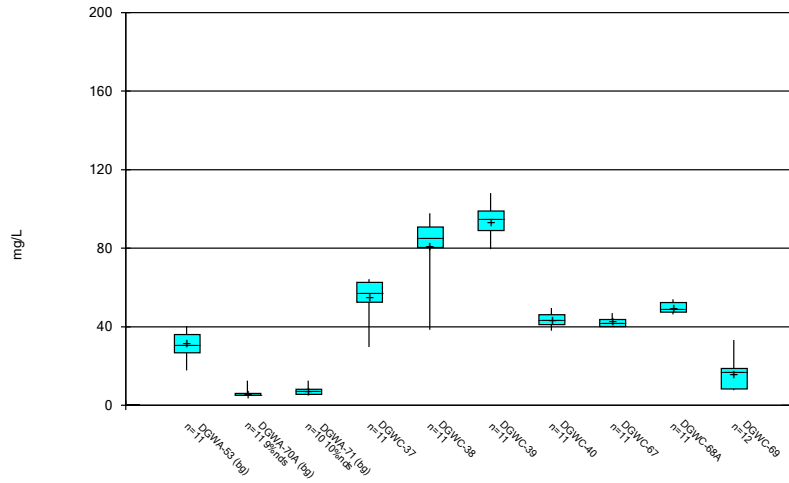
Constituent: Boron Analysis Run 4/20/2020 3:27 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



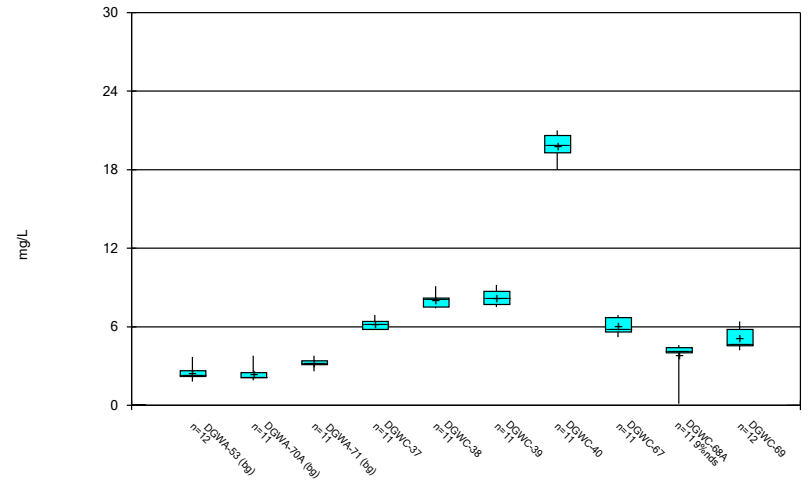
Constituent: Cadmium Analysis Run 4/20/2020 3:27 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



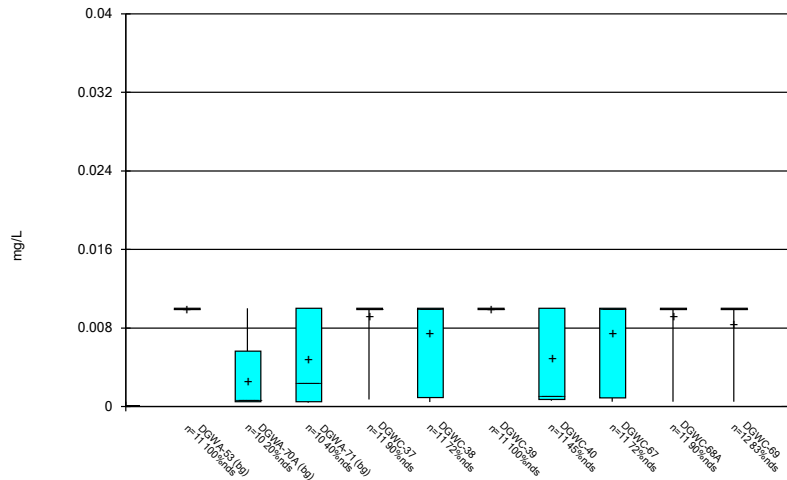
Constituent: Calcium Analysis Run 4/20/2020 3:27 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



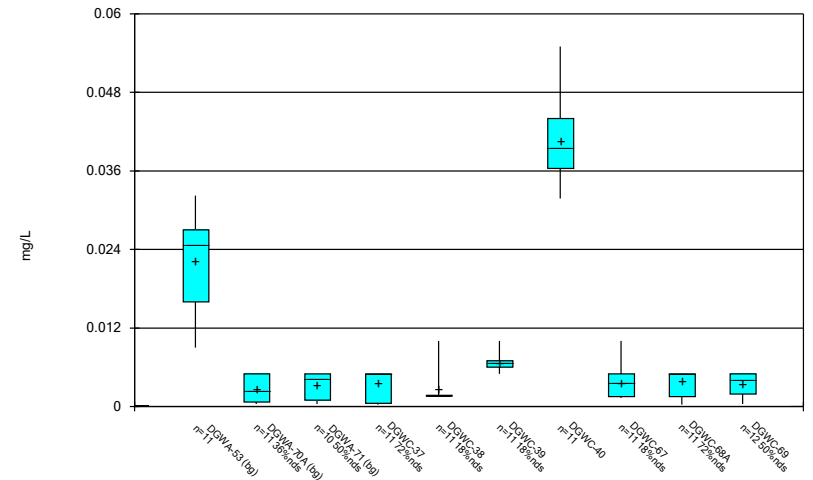
Constituent: Chloride Analysis Run 4/20/2020 3:27 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



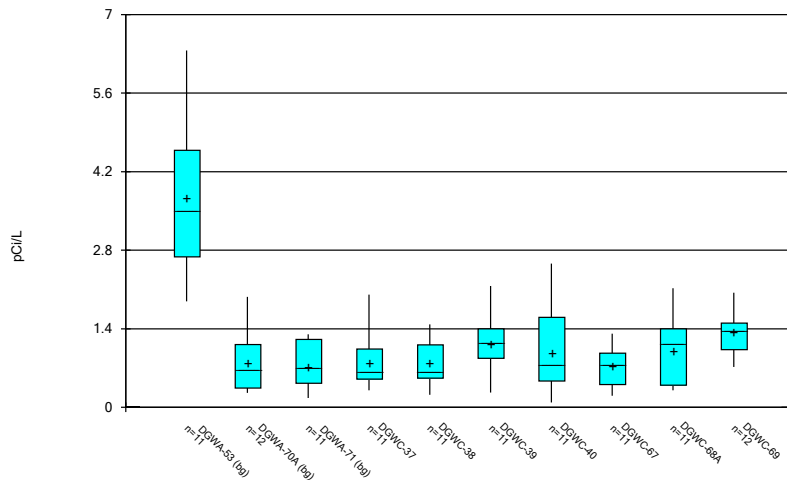
Constituent: Chromium Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



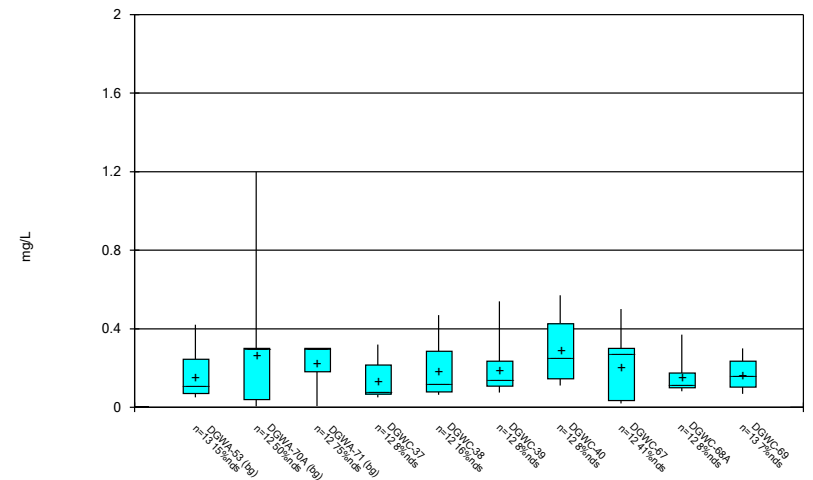
Constituent: Cobalt Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



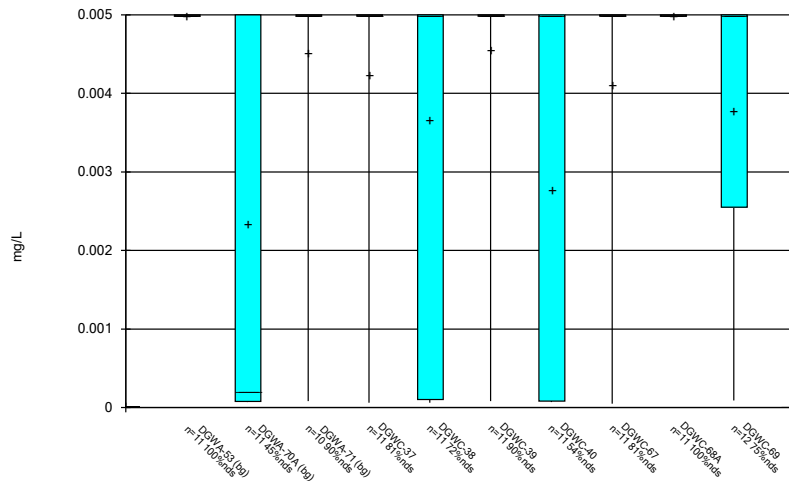
Constituent: Combined Radium 226 + 228 Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



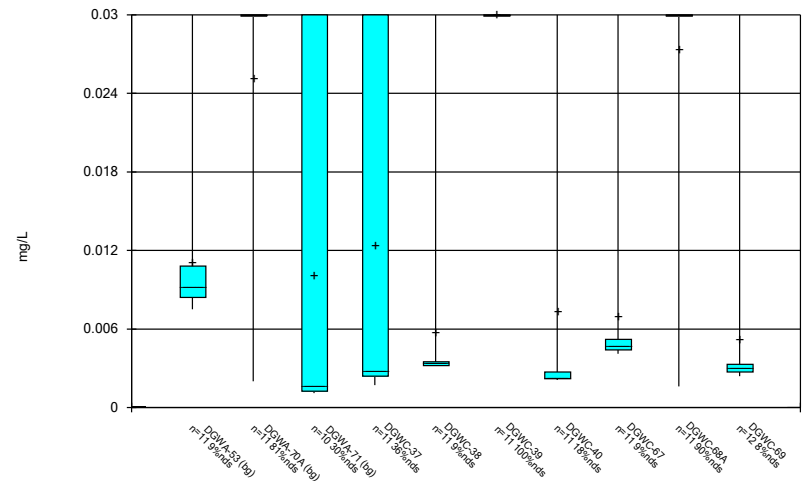
Constituent: Fluoride Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



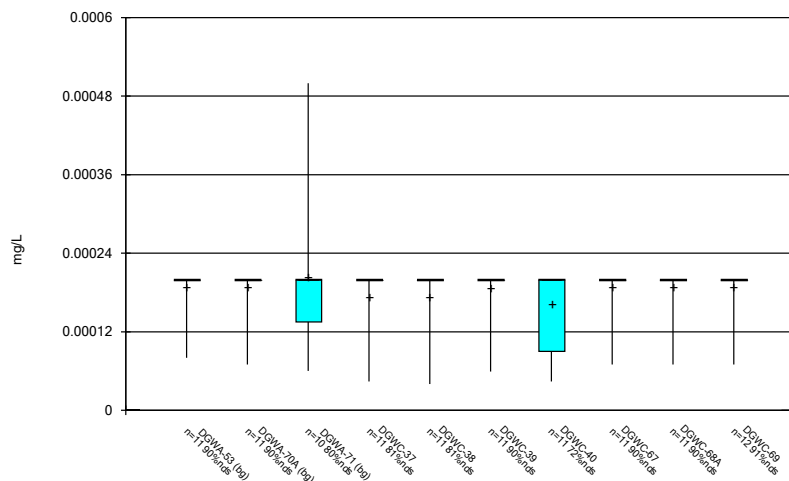
Constituent: Lead Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



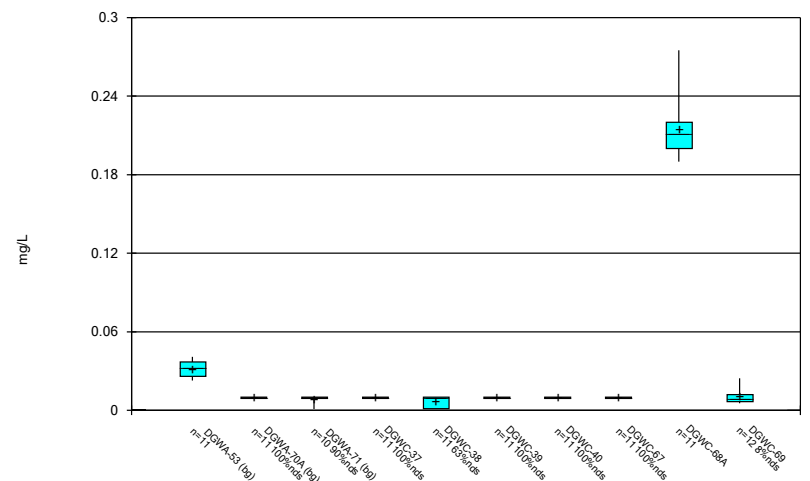
Constituent: Lithium Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



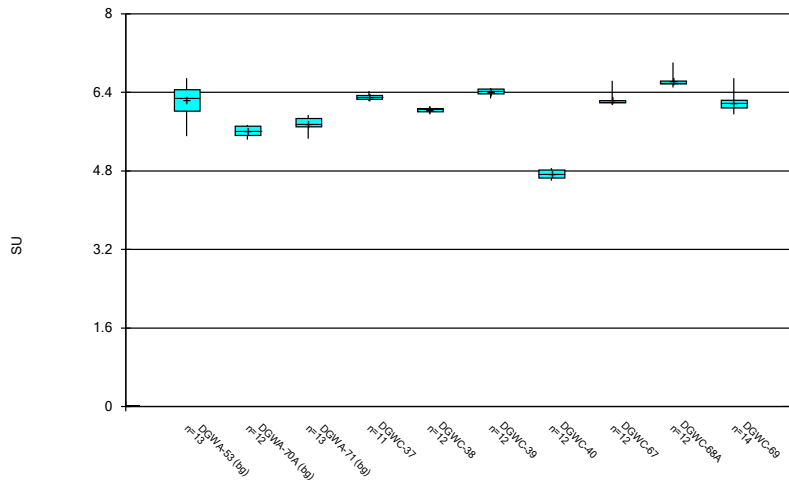
Constituent: Mercury Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



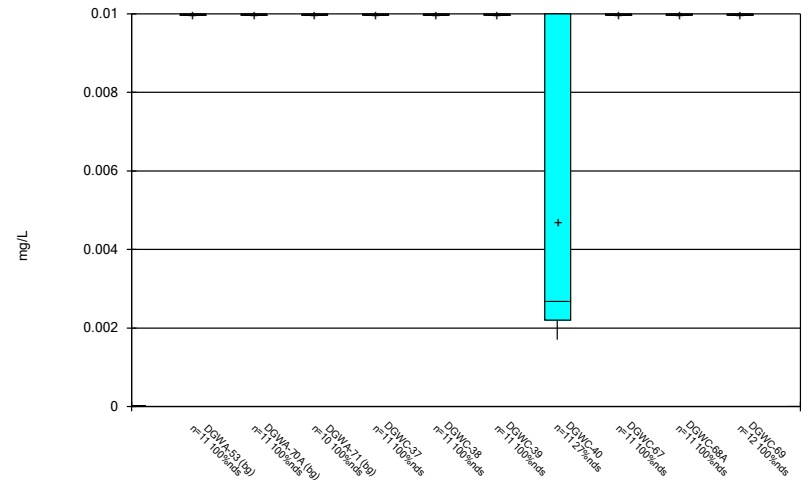
Constituent: Molybdenum Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



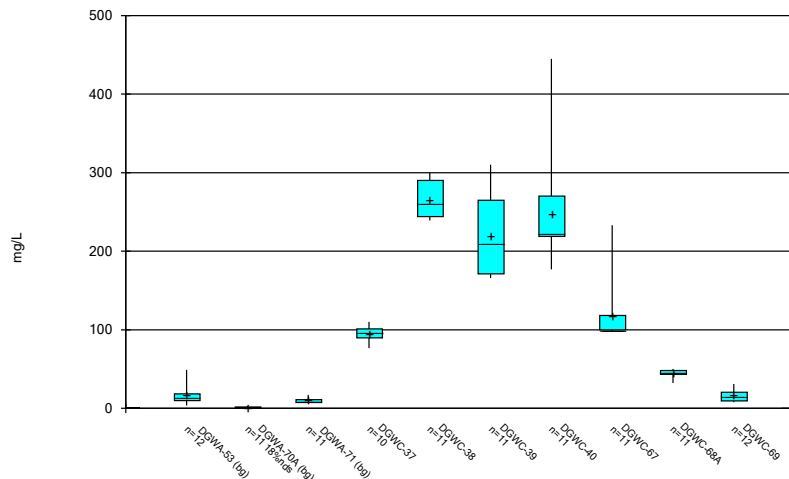
Constituent: pH Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



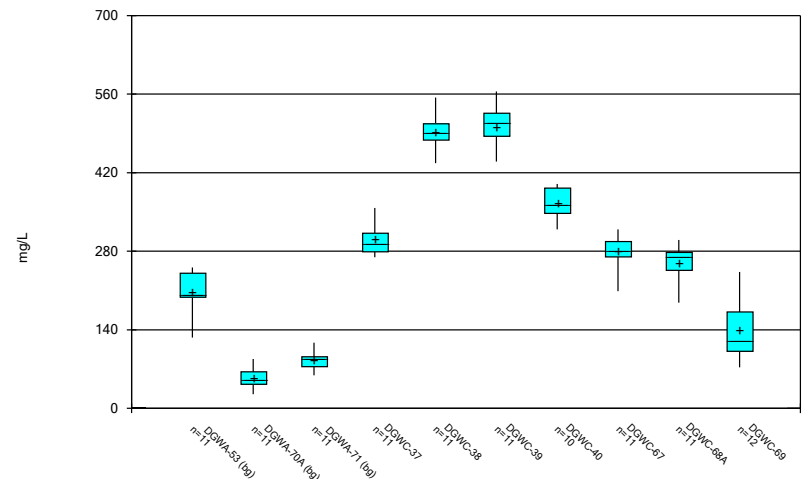
Constituent: Selenium Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



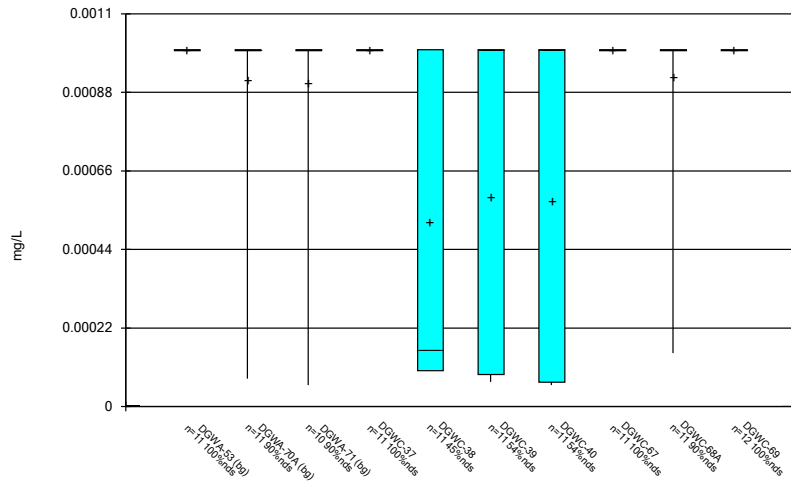
Constituent: Sulfate Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



Constituent: TDS Analysis Run 4/20/2020 3:27 PM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Box & Whiskers Plot



Constituent: Thallium Analysis Run 4/20/2020 3:27 PM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

FIGURE C.

Outlier Summary

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 10:38 AM

	DGWA-70A Chromium (mg/L)	DGWC-37 Sulfate (mg/L)	DGWA-53 TDS (mg/L)	DGWC-40 TDS (mg/L)
9/2/2016			583 (o)	
7/13/2017		200 (o)		
10/24/2017			671 (o)	
10/15/2019	0.034 (O)			

FIGURE D.

Appendix III Interwell Prediction Limits - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:14 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg	N Bg	Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	3/9/2020	3	Yes	32	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	3/9/2020	2.9	Yes	32	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	3/4/2020	0.86	Yes	32	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	3/9/2020	3.6	Yes	32	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40.3	n/a	3/9/2020	64.2	Yes	32	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40.3	n/a	3/9/2020	91.9	Yes	32	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40.3	n/a	3/9/2020	100	Yes	32	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40.3	n/a	3/4/2020	49.6	Yes	32	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40.3	n/a	3/9/2020	46.9	Yes	32	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40.3	n/a	3/9/2020	54	Yes	32	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	3.99	n/a	3/9/2020	6	Yes	34	1.633	0.182	0	None	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-38	3.99	n/a	3/9/2020	8.1	Yes	34	1.633	0.182	0	None	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-39	3.99	n/a	3/9/2020	7.5	Yes	34	1.633	0.182	0	None	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-40	3.99	n/a	3/4/2020	20.6	Yes	34	1.633	0.182	0	None	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-67	3.99	n/a	3/9/2020	6.7	Yes	34	1.633	0.182	0	None	None	0.001075	Param Inter 1 of 2
Chloride (mg/L)	DGWC-69	3.99	n/a	3/9/2020	5.7	Yes	34	1.633	0.182	0	None	None	0.001075	Param Inter 1 of 2
pH (SU)	DGWC-40	6.69	5.44	3/4/2020	4.64	Yes	38	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
Sulfate (mg/L)	DGWC-37	31.97	n/a	3/9/2020	90.3	Yes	34	2.668	1.493	5.882	None	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-38	31.97	n/a	3/9/2020	244	Yes	34	2.668	1.493	5.882	None	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-39	31.97	n/a	3/9/2020	171	Yes	34	2.668	1.493	5.882	None	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-40	31.97	n/a	3/4/2020	177	Yes	34	2.668	1.493	5.882	None	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-67	31.97	n/a	3/9/2020	100	Yes	34	2.668	1.493	5.882	None	None	0.001075	Param Inter 1 of 2
Sulfate (mg/L)	DGWC-68A	31.97	n/a	3/9/2020	37.4	Yes	34	2.668	1.493	5.882	None	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-37	291	n/a	3/9/2020	357	Yes	33	4.67	0.9751	0	None	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-38	291	n/a	3/9/2020	554	Yes	33	4.67	0.9751	0	None	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-39	291	n/a	3/9/2020	508	Yes	33	4.67	0.9751	0	None	None	0.001075	Param Inter 1 of 2
TDS (mg/L)	DGWC-40	291	n/a	3/4/2020	400	Yes	33	4.67	0.9751	0	None	None	0.001075	Param Inter 1 of 2

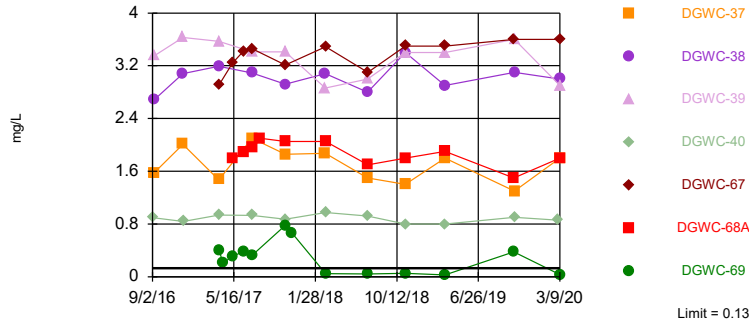
Appendix III Interwell Prediction Limits - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:14 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg	N	Bg	Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	DGWC-37	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-38	0.13	n/a	3/9/2020	3	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-39	0.13	n/a	3/9/2020	2.9	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-40	0.13	n/a	3/4/2020	0.86	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-67	0.13	n/a	3/9/2020	3.6	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-68A	0.13	n/a	3/9/2020	1.8	Yes	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Boron (mg/L)	DGWC-69	0.13	n/a	3/9/2020	0.035	No	32	n/a	n/a	n/a	18.75	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-37	40.3	n/a	3/9/2020	64.2	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-38	40.3	n/a	3/9/2020	91.9	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-39	40.3	n/a	3/9/2020	100	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-40	40.3	n/a	3/4/2020	49.6	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-67	40.3	n/a	3/9/2020	46.9	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-68A	40.3	n/a	3/9/2020	54	Yes	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Calcium (mg/L)	DGWC-69	40.3	n/a	3/9/2020	8.6	No	32	n/a	n/a	n/a	6.25	n/a	n/a	0.001722	NP Inter (normality) 1 of 2
Chloride (mg/L)	DGWC-37	3.99	n/a	3/9/2020	6	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-38	3.99	n/a	3/9/2020	8.1	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-39	3.99	n/a	3/9/2020	7.5	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-40	3.99	n/a	3/4/2020	20.6	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-67	3.99	n/a	3/9/2020	6.7	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-68A	3.99	n/a	3/9/2020	3.6	No	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Chloride (mg/L)	DGWC-69	3.99	n/a	3/9/2020	5.7	Yes	34	1.633	0.182	0	0	None	0.001075	Param Inter 1 of 2	
Fluoride (mg/L)	DGWC-37	1.2	n/a	3/9/2020	0.054	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-38	1.2	n/a	3/9/2020	0.064	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-39	1.2	n/a	3/9/2020	0.075	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-40	1.2	n/a	3/4/2020	0.11	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-67	1.2	n/a	3/9/2020	0.3ND	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-68A	1.2	n/a	3/9/2020	0.082	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
Fluoride (mg/L)	DGWC-69	1.2	n/a	3/9/2020	0.068	No	37	n/a	n/a	n/a	45.95	n/a	n/a	0.001314	NP Inter (normality) 1 of 2
pH (SU)	DGWC-37	6.69	5.44	3/9/2020	6.34	No	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-38	6.69	5.44	3/9/2020	6.12	No	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-39	6.69	5.44	3/9/2020	6.37	No	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-40	6.69	5.44	3/4/2020	4.64	Yes	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-67	6.69	5.44	3/9/2020	6.23	No	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-68A	6.69	5.44	3/9/2020	6.6	No	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
pH (SU)	DGWC-69	6.69	5.44	3/9/2020	6.12	No	38	n/a	n/a	n/a	0	n/a	n/a	0.002501	NP Inter (normality) 1 of 2
Sulfate (mg/L)	DGWC-37	31.97	n/a	3/9/2020	90.3	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-38	31.97	n/a	3/9/2020	244	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-39	31.97	n/a	3/9/2020	171	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-40	31.97	n/a	3/4/2020	177	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-67	31.97	n/a	3/9/2020	100	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-68A	31.97	n/a	3/9/2020	37.4	Yes	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
Sulfate (mg/L)	DGWC-69	31.97	n/a	3/9/2020	7.6	No	34	2.668	1.493	5.882	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-37	291	n/a	3/9/2020	357	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-38	291	n/a	3/9/2020	554	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-39	291	n/a	3/9/2020	508	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-40	291	n/a	3/4/2020	400	Yes	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-67	291	n/a	3/9/2020	209	No	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-68A	291	n/a	3/9/2020	188	No	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	
TDS (mg/L)	DGWC-69	291	n/a	3/9/2020	115	No	33	4.67	0.9751	0	0	None	0.001075	Param Inter 1 of 2	

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A

Prediction Limit
Interwell Non-parametric

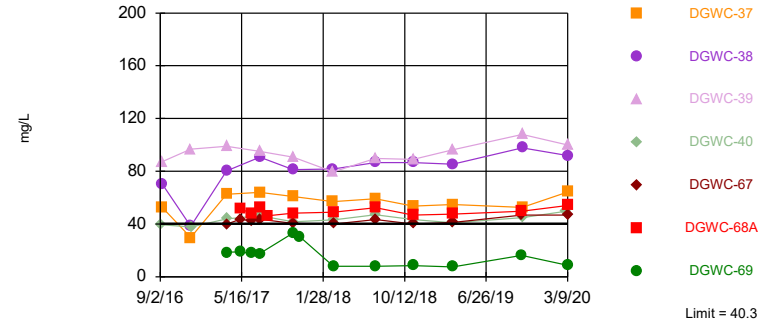


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 18.75% NDs. Annual per-constituent alpha = 0.02384. Individual comparison alpha = 0.001722 (1 of 2). Comparing 7 points to limit.

Constituent: Boron Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A

Prediction Limit
Interwell Non-parametric

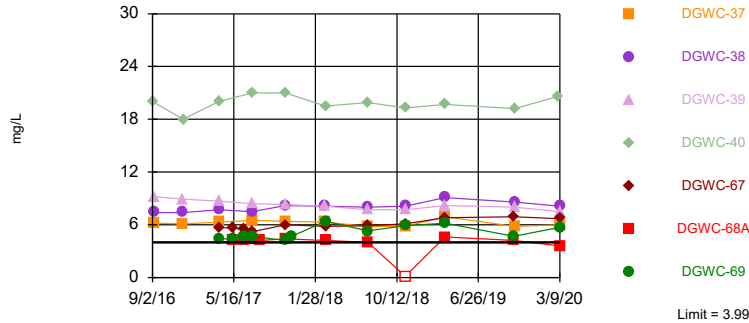


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 6.25% NDs. Annual per-constituent alpha = 0.02384. Individual comparison alpha = 0.001722 (1 of 2). Comparing 7 points to limit.

Constituent: Calcium Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-69

Prediction Limit
Interwell Parametric

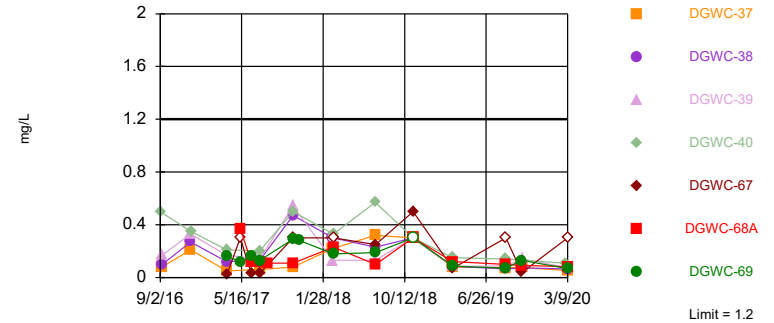


Background Data Summary (based on square root transformation): Mean=1.633, Std. Dev.=0.182, n=34. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9183, critical = 0.908. Kappa = 2.001 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Chloride Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Within Limit

Prediction Limit
Interwell Non-parametric

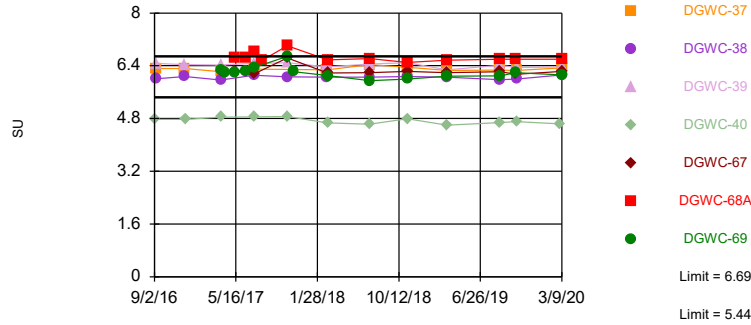


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 37 background values. 45.95% NDs. Annual per-constituent alpha = 0.01823. Individual comparison alpha = 0.001314 (1 of 2). Comparing 7 points to limit.

Constituent: Fluoride Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limits: DGWC-40

Prediction Limit
Interwell Non-parametric

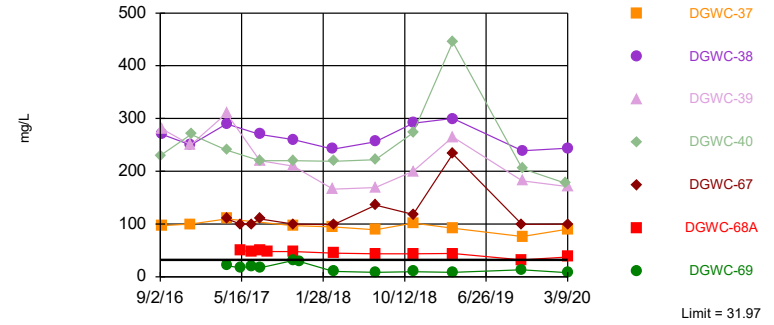


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 38 background values. Annual per-constituent alpha = 0.03472. Individual comparison alpha = 0.002501 (1 of 2). Comparing 7 points to limit.

Constituent: pH Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40, DGWC-67, DGWC-68A

Prediction Limit
Interwell Parametric

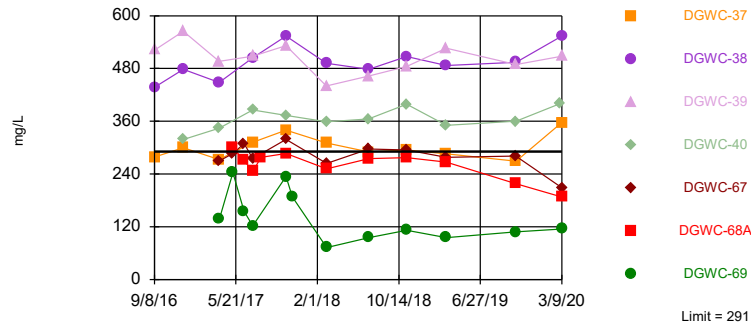


Background Data Summary (based on square root transformation): Mean=2.668, Std. Dev.=1.493, n=34, 5.882% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9388, critical = 0.908. Kappa = 2.001 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Exceeds Limit: DGWC-37, DGWC-38, DGWC-39, DGWC-40

Prediction Limit
Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=4.67, Std. Dev.=0.9751, n=33. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9181, critical = 0.906. Kappa = 2.007 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

Constituent: TDS Analysis Run 4/17/2020 11:13 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-70A (bg)	DGWA-53 (bg)	DGWC-69	DGWC-67
9/2/2016	0.895								
9/8/2016		3.35	2.69	1.58					
12/7/2016		3.63	3.08	2.01					
12/8/2016	0.841								
3/28/2017					0.0097 (J)	0.0067 (J)	0.0612		
3/30/2017	0.937	3.57	3.19	1.47					
3/31/2017								0.407	2.91
4/12/2017								0.207	
5/11/2017							0.0805		
5/12/2017					0.0082 (J)			0.311	3.24
5/15/2017						0.0073 (J)			
6/15/2017						<0.04	0.0725		
6/16/2017					0.0085 (J)			0.381	3.42
7/11/2017					0.0077 (J)	<0.04			
7/12/2017							0.0735		
7/13/2017	0.933	3.41	3.09	2.1				0.323	3.46
8/8/2017						<0.04			
10/24/2017					0.0083 (J)	0.0082 (J)	0.077		
10/26/2017	0.873	3.41	2.92	1.86				0.779	3.21
11/15/2017								0.667	
2/27/2018					0.0069 (J)	0.0062 (J)			
3/1/2018		2.86	3.08	1.87					
3/2/2018	0.974							0.0478	3.49
3/8/2018							0.13 (J)		
7/12/2018	0.92	3	2.8	1.5			0.076		
7/13/2018								0.043	3.1
11/6/2018					<0.04 (J)	<0.04 (J)			
11/7/2018							0.073		
11/8/2018	0.8	3.4	3.4	1.4				0.054	3.5
3/12/2019					0.0068 (J)	0.0073 (J)			
3/13/2019	0.8	3.4	2.9	1.8			0.08	0.028 (J)	3.5
10/15/2019					0.0054 (J)	<0.04			
10/16/2019							0.059	0.38	
10/17/2019									3.6
10/18/2019	0.9	3.6	3.1	1.3					
3/2/2020					0.01 (J)	0.0055 (J)			
3/4/2020	0.86								
3/9/2020		2.9	3	1.8			0.08 (J)	0.035 (J)	3.6

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
4/12/2017	
5/11/2017	
5/12/2017	1.8
5/15/2017	
6/15/2017	
6/16/2017	1.88
7/11/2017	
7/12/2017	
7/13/2017	1.97
8/8/2017	2.1
10/24/2017	
10/26/2017	2.05
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	2.05
3/8/2018	
7/12/2018	
7/13/2018	1.7
11/6/2018	
11/7/2018	
11/8/2018	1.8
3/12/2019	
3/13/2019	1.9
10/15/2019	
10/16/2019	1.5
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	1.8

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-70A (bg)	DGWA-53 (bg)	DGWC-69	DGWC-67
9/2/2016	39.6								
9/8/2016		87.2	70.3	52.5					
12/7/2016		96.7	38.4	29.7					
12/8/2016	37.9								
3/28/2017					8.31	5.14	30.8		
3/30/2017	43.9	98.9	80.3	62.6					
3/31/2017								18.6 (J)	39.9
5/11/2017							35.8		
5/12/2017					8.04			18.9 (J)	43.6
5/15/2017						6.5			
6/15/2017						5.38	36		
6/16/2017					7.66			17.7	42.5
7/11/2017					7.71	5.96			
7/12/2017							40.3		
7/13/2017	46.2	95	90.8	64.1				17.6	43.7
8/8/2017						5.2			
10/24/2017					6.86	4.93	30.3		
10/26/2017	41.8	90.6	81.3	60.8				33.3	40.4
11/15/2017								30.6	
2/27/2018					<25	<25			
3/1/2018		79.6	81.8	57					
3/2/2018	43.2							8.09	40.1
3/8/2018							39.8		
7/12/2018	47.1	89.8	86.7	59.1			34.7		
7/13/2018								7.9	43.3
11/6/2018					5.7	5.5			
11/7/2018							28.6		
11/8/2018	43.5	89	86.6	53.6				8.5	40.1
3/12/2019					5.5	5.1			
3/13/2019	41	96.3	85.3	54.8			26.7	7.6	41.2
10/15/2019					5.1	5.1			
10/16/2019							17.7	16.2	
10/17/2019									46.9
10/18/2019	44.9	108	97.8	52.5					
3/2/2020					5.8	5.3			
3/4/2020	49.6								
3/9/2020		100	91.9	64.2			23.7	8.6	46.9

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	51.7
5/15/2017	
6/15/2017	
6/16/2017	47.9
7/11/2017	
7/12/2017	
7/13/2017	52.3
8/8/2017	46.3
10/24/2017	
10/26/2017	48.2
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	48.9
3/8/2018	
7/12/2018	
7/13/2018	52.4
11/6/2018	
11/7/2018	
11/8/2018	46.8
3/12/2019	
3/13/2019	47.5
10/15/2019	
10/16/2019	49.7
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	54

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-38	DGWC-39	DGWC-37	DGWA-70A (bg)	DGWA-53 (bg)	DGWA-71 (bg)	DGWC-69	DGWC-67
9/2/2016	20								
9/8/2016		7.4	9.2	6.2					
12/7/2016		7.4	8.9	6.1					
12/8/2016	18								
3/28/2017					3.8	3.7	3.6		
3/30/2017	20	7.7	8.7	6.3					
3/31/2017								4.4	5.7
5/11/2017						2.3			
5/12/2017							3.8	4.4	5.6
5/15/2017					2.2				
6/15/2017					2	2.6			
6/16/2017							3.4	4.7	5.5
7/11/2017					2.1		3.1		
7/12/2017						2.3			
7/13/2017	21	7.5	8.4	6.5				4.7	5.2
8/8/2017					2.2				
10/24/2017					2.4	2.7	3.2		
10/26/2017	21	8.2	8.3	6.4				4.2	6
11/15/2017						2.2	3.1	4.7	
2/27/2018					2.5		3.2		
3/1/2018		8.1	8.1	6.3					
3/2/2018	19.5							6.4	5.8
3/8/2018						2.4			
7/12/2018	19.9	8	7.7	5.8		2.2			
7/13/2018								5.3	5.9
11/6/2018					2.3		2.6		
11/7/2018						2.3			
11/8/2018	19.3	8.1	7.7	5.8				5.9	6.1
3/12/2019					2.5		3.3		
3/13/2019	19.7	9.1	8.2	6.9		3.6		6.2	6.8
10/15/2019					2.2		3.3		
10/16/2019						2		4.7	
10/17/2019									6.9
10/18/2019	19.2	8.6	8	5.8					
3/2/2020					1.9		3		
3/4/2020	20.6								
3/9/2020		8.1	7.5	6		1.8		5.7	6.7

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	4.2
5/15/2017	
6/15/2017	
6/16/2017	4.2
7/11/2017	
7/12/2017	
7/13/2017	4.4
8/8/2017	4.2
10/24/2017	
10/26/2017	4.4
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	4.2
3/8/2018	
7/12/2018	
7/13/2018	4
11/6/2018	
11/7/2018	
11/8/2018	<0.25
3/12/2019	
3/13/2019	4.6
10/15/2019	
10/16/2019	4.2
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	3.6

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-37	DGWC-38	DGWA-70A (bg)	DGWA-71 (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69
9/2/2016	0.5								
9/8/2016		0.17 (J)	0.08 (J)	0.1 (J)					
12/7/2016		0.33	0.21 (J)	0.27 (J)					
12/8/2016	0.35								
3/28/2017					1.2	0.06 (J)	0.12 (J)		
3/30/2017	0.21 (J)	0.17 (J)	0.05 (J)	0.12 (J)					
3/31/2017								0.02 (J)	0.16 (J)
5/11/2017							0.07 (J)		
5/12/2017						<0.3		<0.3	0.12 (J)
5/15/2017					0.005 (J)				
6/15/2017					0.02 (J)		0.19 (J)		
6/16/2017						0.008 (J)		0.03 (J)	0.16 (J)
7/11/2017					0.06 (J)	0.007 (J)			
7/12/2017							0.1 (J)		
7/13/2017	0.2 (J)	0.14 (J)	0.06 (J)	0.13 (J)				0.03 (J)	0.13 (J)
8/8/2017					0.04 (J)				
10/24/2017					<0.3	<0.3	0.06 (J)		
10/26/2017	0.5	0.54	0.08 (J)	0.47				<0.3	0.29 (J)
11/15/2017						<0.3	0.05 (J)		0.28 (J)
2/27/2018					<0.3	<0.3			
3/1/2018		0.13	0.22	<0.3					
3/2/2018	0.33							<0.3	0.18
3/8/2018							<0.3		
7/12/2018	0.57	0.13 (J)	0.32	0.23 (J)			0.071 (J)		
7/13/2018								0.25 (J)	0.19 (J)
11/6/2018					<0.3	<0.3			
11/7/2018							<0.3		
11/8/2018	<0.3 (J)	<0.3 (J)	<0.3	<0.3				0.5	<0.3 (J)
3/12/2019					0.039 (J)	<0.3			
3/13/2019	0.15 (J)	0.085 (J)	0.08 (J)	0.084 (J)			0.13 (J)	0.07 (J)	0.086 (J)
8/27/2019					<0.3	<0.3			
8/28/2019	0.14	0.086 (J)	0.074 (J)	0.066 (J)			0.42	<0.3	0.07 (J)
10/15/2019					<0.3	<0.3			
10/16/2019							0.11 (J)		0.13 (J)
10/17/2019								0.038 (J)	
10/18/2019	0.13 (J)	0.14 (J)	0.075 (J)	0.073 (J)					
3/2/2020					<0.3	<0.3			
3/4/2020	0.11 (J)								
3/9/2020		0.075 (J)	0.054 (J)	0.064 (J)			0.1 (J)	<0.3	0.068 (J)

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	0.37
5/15/2017	
6/15/2017	
6/16/2017	0.12 (J)
7/11/2017	
7/12/2017	
7/13/2017	0.12 (J)
8/8/2017	0.11 (J)
10/24/2017	
10/26/2017	0.11 (J)
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	0.23
3/8/2018	
7/12/2018	
7/13/2018	0.099 (J)
11/6/2018	
11/7/2018	
11/8/2018	<0.3 (J)
3/12/2019	
3/13/2019	0.12 (J)
8/27/2019	
8/28/2019	0.1
10/15/2019	
10/16/2019	0.093 (J)
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	0.082 (J)

Prediction Limit

Constituent: pH (SU) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-53 (bg)	DGWC-69	DGWC-67	DGWC-68A
9/2/2016	4.77								
9/8/2016		6.47	6.01	6.32					
12/7/2016		6.43	6.07	6.32					
12/8/2016	4.77								
3/28/2017					5.94	6.29			
3/30/2017	4.84	6.42	5.97	6.22					
3/31/2017							6.26	6.25	
4/12/2017							6.19		
5/11/2017						6.6			
5/12/2017					5.46		6.2	6.23	6.63
5/15/2017									
6/15/2017						6.41			
6/16/2017					5.81		6.22	6.22	6.63
7/11/2017					5.74				
7/12/2017						5.91			
7/13/2017	4.85	6.47	6.11	6.3			6.35	6.15	6.84
8/8/2017									6.57
10/24/2017					5.86	5.51			
10/26/2017	4.86	6.49	6.06				6.69	6.64	7.01
11/15/2017					5.77	6.5	6.22		
2/27/2018					5.66				
3/1/2018		6.37	6.05	6.28					
3/2/2018	4.67						6.1	6.18	6.58
3/8/2018						6.18			
7/10/2018					5.63				
7/12/2018	4.63	6.45	6.05	6.43		6.33			
7/13/2018							5.95	6.19	6.62
11/6/2018					5.79				
11/7/2018						6.22			
11/8/2018	4.79	6.49	6.07	6.36			6	6.23	6.5
3/12/2019					5.74				
3/13/2019	4.6	6.28	6.05	6.26		6	6.08	6.19	6.57
8/27/2019					5.87				
8/28/2019	4.68	6.41	5.98	6.27		6.04	6.09	6.22	6.6
10/15/2019					5.88				
10/16/2019						6.69	6.19		6.6
10/17/2019								6.14	
10/18/2019	4.71	6.35	6	6.26					
3/2/2020					5.77				
3/4/2020	4.64								
3/9/2020		6.37	6.12	6.34		6.41 (D)	6.12	6.23	6.6

Prediction Limit

Constituent: pH (SU) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWA-70A (bg)

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
4/12/2017	
5/11/2017	
5/12/2017	
5/15/2017	5.72
6/15/2017	5.74
6/16/2017	
7/11/2017	5.62
7/12/2017	
7/13/2017	
8/8/2017	5.6
10/24/2017	5.71
10/26/2017	
11/15/2017	
2/27/2018	5.5
3/1/2018	
3/2/2018	
3/8/2018	
7/10/2018	5.44
7/12/2018	
7/13/2018	
11/6/2018	5.71
11/7/2018	
11/8/2018	
3/12/2019	5.52
3/13/2019	
8/27/2019	5.53
8/28/2019	
10/15/2019	5.61
10/16/2019	
10/17/2019	
10/18/2019	
3/2/2020	5.54
3/4/2020	
3/9/2020	

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-40	DGWC-39	DGWC-38	DGWC-37	DGWA-71 (bg)	DGWA-70A (bg)	DGWA-53 (bg)	DGWC-67	DGWC-69
9/2/2016	230								
9/8/2016		280	270	97					
12/7/2016		250	250	100					
12/8/2016	270								
3/28/2017					17	2.7	49		
3/30/2017	240	310	290	110					
3/31/2017								110	21
5/11/2017							21		
5/12/2017					17			100	17
5/15/2017						1			
6/15/2017						0.86 (J)	16		
6/16/2017					11			100	20
7/11/2017					11	1.4			
7/12/2017							10		
7/13/2017	220	220	270	200 (o)				110	17
8/8/2017						1.5			
10/24/2017					9.6	1.4	15		
10/26/2017	220	210	260	97				100	31
11/15/2017					7.8		3.8		29
2/27/2018					7.4	0.54 (J)			
3/1/2018		166	242	94.6					
3/2/2018	219							98.5	10.1
3/8/2018							9.7		
7/12/2018	222	169	256	89.2			8		
7/13/2018								136	8.6
11/6/2018					7.3	<1 (J)			
11/7/2018							12.8		
11/8/2018	273	200	291	102				118	9.7
3/12/2019					7	0.35 (J)			
3/13/2019	445	265	300	92.2			23.7	233	8.4
10/15/2019					7.4	0.16 (J)			
10/16/2019							15.1		13.3
10/17/2019								99.4	
10/18/2019	205	182	239	76.4					
3/2/2020					8.5	<1			
3/4/2020	177								
3/9/2020		171	244	90.3			9.5	100	7.6

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	50
5/15/2017	
6/15/2017	
6/16/2017	47
7/11/2017	
7/12/2017	
7/13/2017	49
8/8/2017	48
10/24/2017	
10/26/2017	48
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	44.7
3/8/2018	
7/12/2018	
7/13/2018	43.3
11/6/2018	
11/7/2018	
11/8/2018	43.5
3/12/2019	
3/13/2019	44.1
10/15/2019	
10/16/2019	32.1
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	37.4

Prediction Limit

Constituent: TDS (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1

Plant McDonough Client: Southern Company Data: McDonough AP

	DGWC-38	DGWC-39	DGWC-37	DGWC-40	DGWA-53 (bg)	DGWA-70A (bg)	DGWA-71 (bg)	DGWC-69	DGWC-67
9/2/2016				583 (o)					
9/8/2016	437	522	279						
12/7/2016	478	565	300						
12/8/2016				319					
3/28/2017					202	39	90		
3/30/2017	448	496	273	344					
3/31/2017								138	270
5/11/2017					241				
5/12/2017							92	243	287
5/15/2017						88			
6/15/2017					251	65			
6/16/2017							100	155	309
7/11/2017						25	59		
7/12/2017					218				
7/13/2017	504	508	312	386				122	275
8/8/2017						53			
10/24/2017					671 (o)	49	117		
10/26/2017	554	532	340	373				234	319
11/15/2017					241		90	188	
2/27/2018						43	79		
3/1/2018	492	440	311						
3/2/2018				359				73	264
3/8/2018					213				
7/12/2018	478	463	290	365	198				
7/13/2018								95	297
11/6/2018						65	85		
11/7/2018					200				
11/8/2018	507	485	295	399				112	295
3/12/2019						43	74		
3/13/2019	487	526	286	351	201			95	278
10/15/2019						70	89		
10/16/2019					126			108	
10/17/2019									281
10/18/2019	494	489	269	360					
3/2/2020						52	67		
3/4/2020				400					
3/9/2020	554	508	357		171			115	209

Prediction Limit

Constituent: TDS (mg/L) Analysis Run 4/17/2020 11:14 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

DGWC-68A

9/2/2016	
9/8/2016	
12/7/2016	
12/8/2016	
3/28/2017	
3/30/2017	
3/31/2017	
5/11/2017	
5/12/2017	300
5/15/2017	
6/15/2017	
6/16/2017	271
7/11/2017	
7/12/2017	
7/13/2017	246
8/8/2017	278
10/24/2017	
10/26/2017	287
11/15/2017	
2/27/2018	
3/1/2018	
3/2/2018	252
3/8/2018	
7/12/2018	
7/13/2018	275
11/6/2018	
11/7/2018	
11/8/2018	277
3/12/2019	
3/13/2019	267
10/15/2019	
10/16/2019	218
10/17/2019	
10/18/2019	
3/2/2020	
3/4/2020	
3/9/2020	188

FIGURE E.

Trend Tests Summary Table - PL Exceedances - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:19 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	DGWC-67	0.1273	37	34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-38	6.169	35	34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.4855	-44	-34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4451	35	34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3895	-35	-34	Yes	11	18.18	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.658	-38	-34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-4.353	-40	-34	Yes	11	0	n/a	n/a	0.01	NP

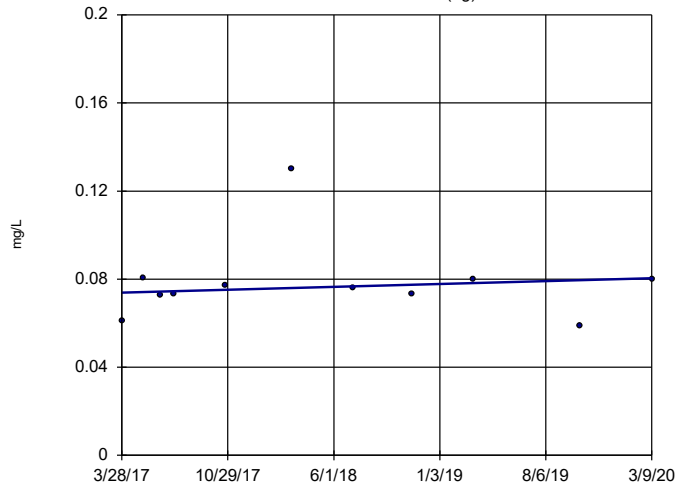
Trend Tests Summary Table - PL Exceedances - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/17/2020, 11:19 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	DGWA-53 (bg)	0.002168	6	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-70A (bg)	0	-4	-34	No	11	45.45	n/a	n/a	0.01	NP
Boron (mg/L)	DGWA-71 (bg)	-0.0009787	-11	-30	No	10	10	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-37	-0.06777	-16	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-38	0.006986	4	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-39	-0.06023	-13	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-40	-0.01449	-12	-34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-67	0.1273	37	34	Yes	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	DGWC-68A	-0.08548	-13	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-53 (bg)	-4.822	-29	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-70A (bg)	-0.06282	-10	-34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWA-71 (bg)	-1.211	-27	-30	No	10	10	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-37	0.03763	2	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-38	6.169	35	34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-39	1.881	11	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-40	1.695	23	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-67	0.8732	15	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	DGWC-68A	0.6397	9	34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-53 (bg)	-0.2044	-28	-38	No	12	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-70A (bg)	0	-3	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWA-71 (bg)	-0.2047	-22	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-37	-0.1019	-9	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-38	0.3525	33	34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-39	-0.4855	-44	-34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-40	-0.1061	-7	-34	No	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-67	0.4451	35	34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	DGWC-69	0.5928	31	38	No	12	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-53 (bg)	0.0155	1	43	No	13	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-70A (bg)	-0.05316	-23	-38	No	12	0	n/a	n/a	0.01	NP
pH (SU)	DGWA-71 (bg)	0.01074	6	43	No	13	0	n/a	n/a	0.01	NP
pH (SU)	DGWC-40	-0.04813	-21	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-53 (bg)	-2.447	-20	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-70A (bg)	-0.3895	-35	-34	Yes	11	18.18	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWA-71 (bg)	-2.658	-38	-34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-37	-3.483	-22	-30	No	10	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-38	-5.637	-8	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-39	-26.03	-25	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-40	-7.997	-14	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-67	0	2	34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	DGWC-68A	-4.353	-40	-34	Yes	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-53 (bg)	-23.86	-32	-34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-70A (bg)	1.273	3	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWA-71 (bg)	-5.967	-20	-34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-37	2.789	1	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-38	18.81	25	34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-39	-8.386	-10	-34	No	11	0	n/a	n/a	0.01	NP
TDS (mg/L)	DGWC-40	14.33	17	30	No	10	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

DGWA-53 (bg)



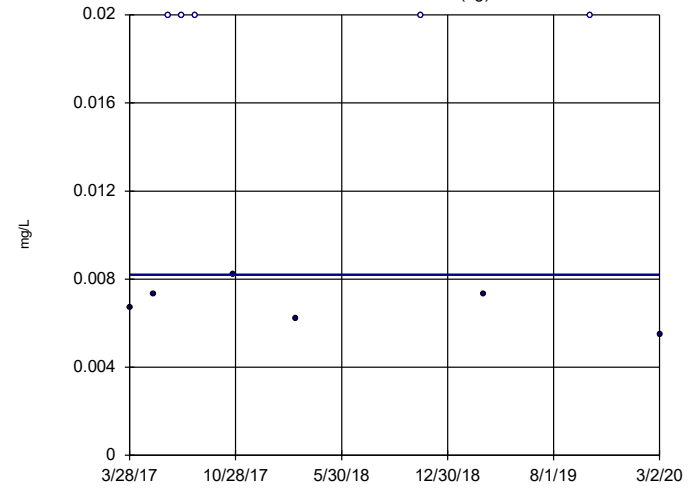
n = 11
 Slope = 0.002168
 units per year.
 Mann-Kendall
 statistic = 6
 critical = 34
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Hollow symbols indicate censored values.

Sen's Slope Estimator

DGWA-70A (bg)

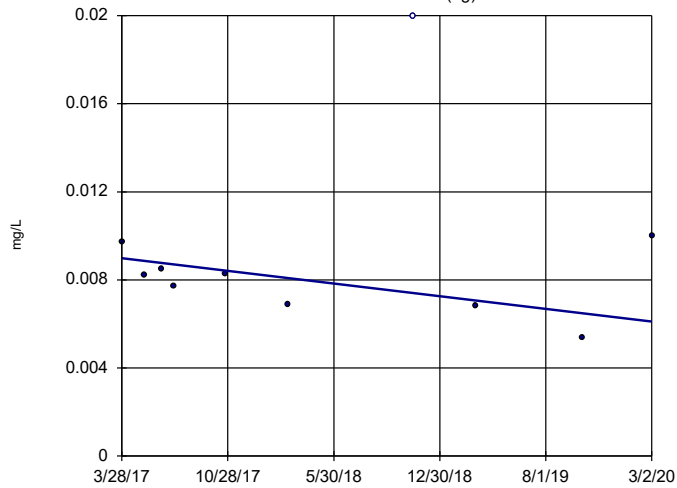


n = 11
 Slope = 0
 units per year.
 Mann-Kendall
 statistic = -4
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWA-71 (bg)

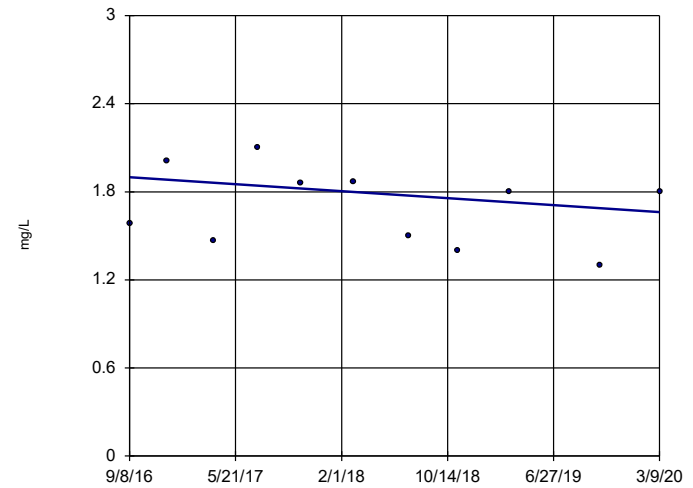


n = 10
 Slope = -0.0009787
 units per year.
 Mann-Kendall
 statistic = -11
 critical = -30
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

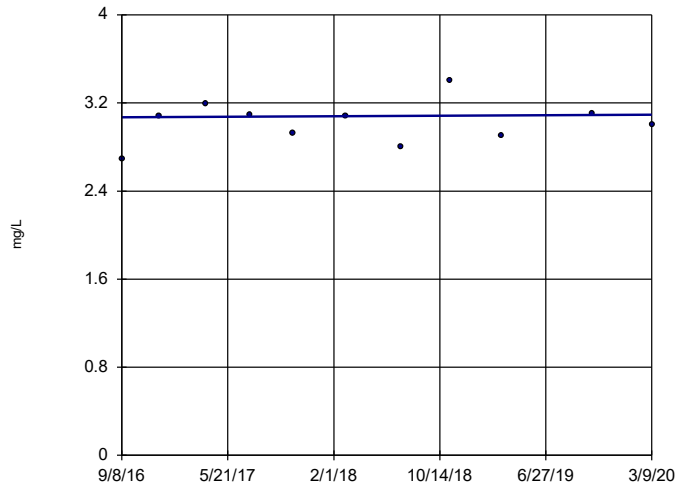
DGWC-37



n = 11
 Slope = -0.06777
 units per year.
 Mann-Kendall
 statistic = -16
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 (α = 0.005 per
 tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

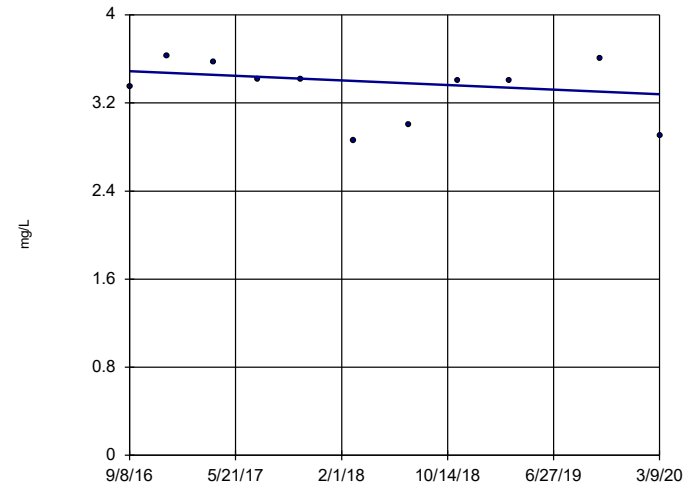
Sen's Slope Estimator
DGWC-38



n = 11
Slope = 0.006986 units per year.
Mann-Kendall statistic = 4
critical = 34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

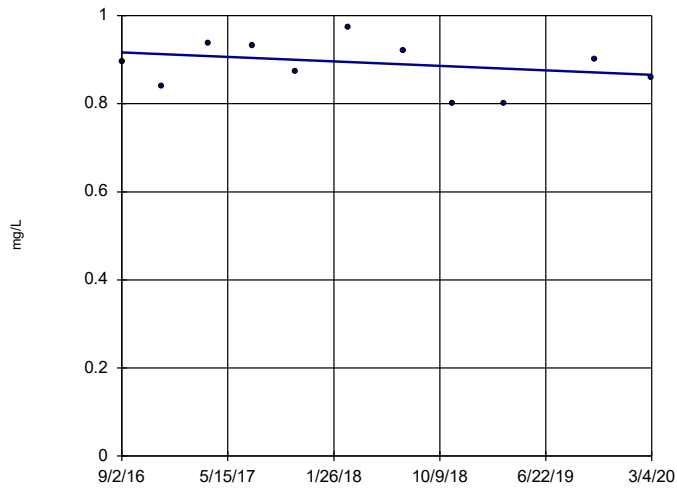
Sen's Slope Estimator
DGWC-39



n = 11
Slope = -0.06023 units per year.
Mann-Kendall statistic = -13
critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

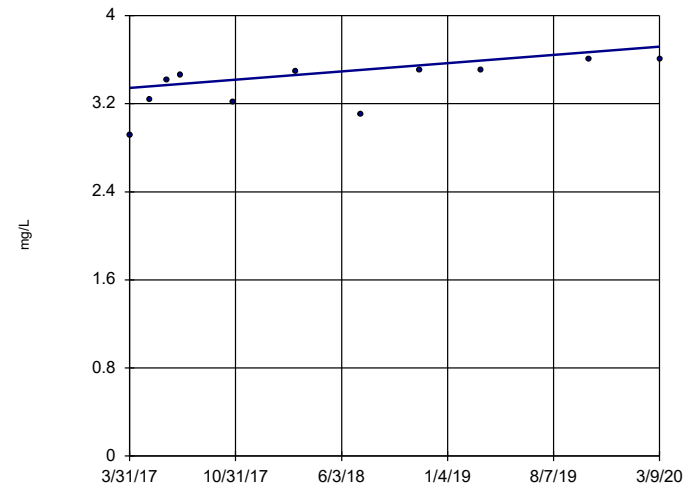
Sen's Slope Estimator
DGWC-40



n = 11
Slope = -0.01449 units per year.
Mann-Kendall statistic = -12
critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

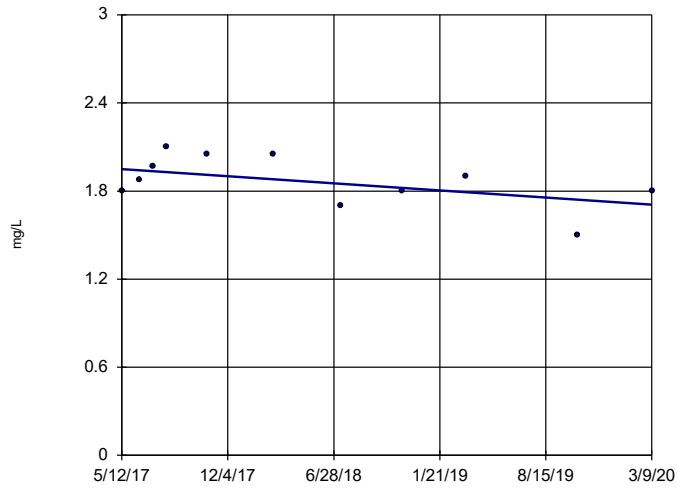
Sen's Slope Estimator
DGWC-67



n = 11
Slope = 0.1273 units per year.
Mann-Kendall statistic = 37
critical = 34
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

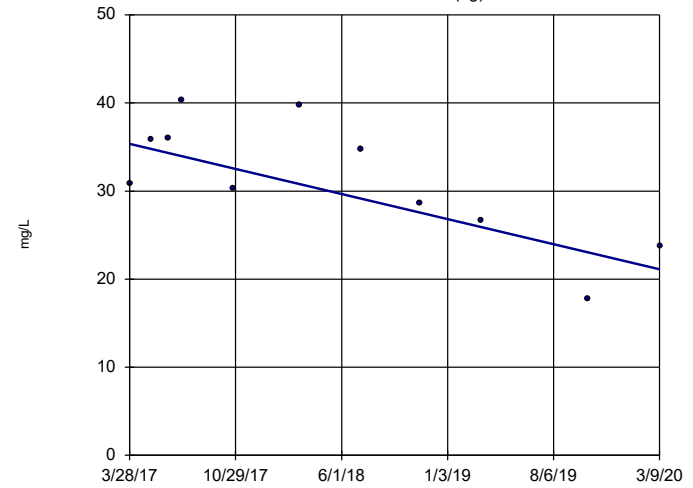
Sen's Slope Estimator
DGWC-68A



n = 11
Slope = -0.08548 units per year.
Mann-Kendall statistic = -13 critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

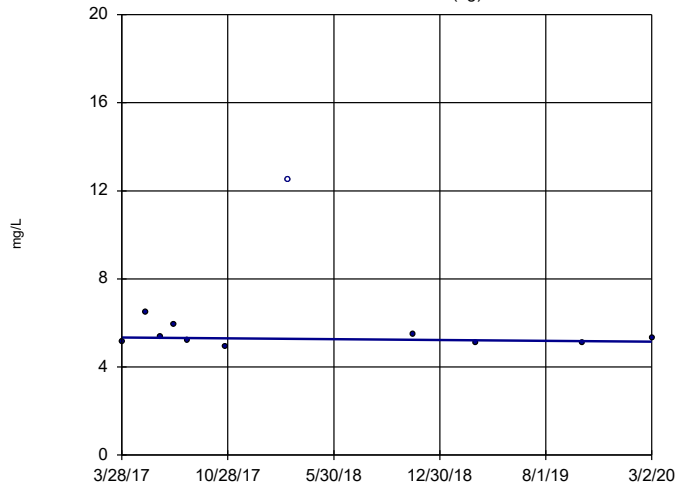
Sen's Slope Estimator
DGWA-53 (bg)



n = 11
Slope = -4.822 units per year.
Mann-Kendall statistic = -29 critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

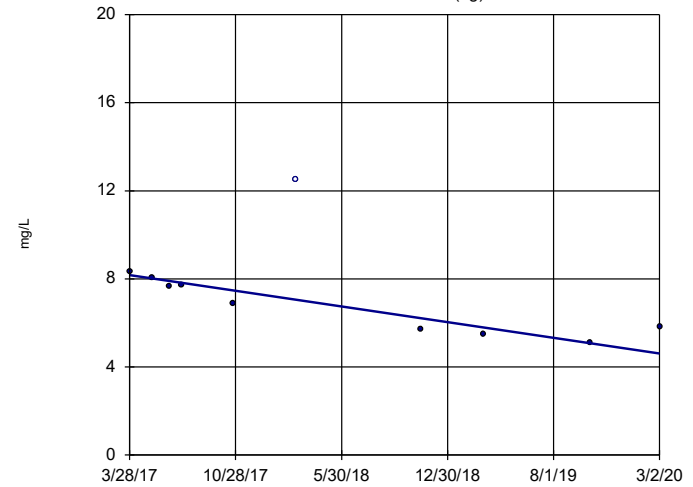
Sen's Slope Estimator
DGWA-70A (bg)



n = 11
Slope = -0.06282 units per year.
Mann-Kendall statistic = -10 critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

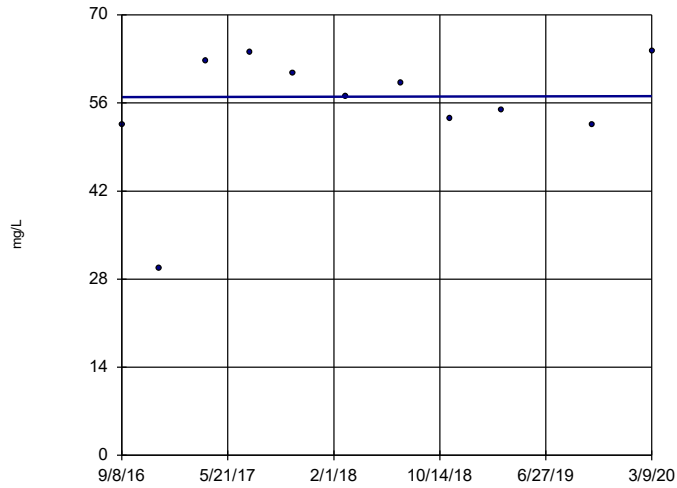
Sen's Slope Estimator
DGWA-71 (bg)



n = 10
Slope = -1.211 units per year.
Mann-Kendall statistic = -27 critical = -30
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

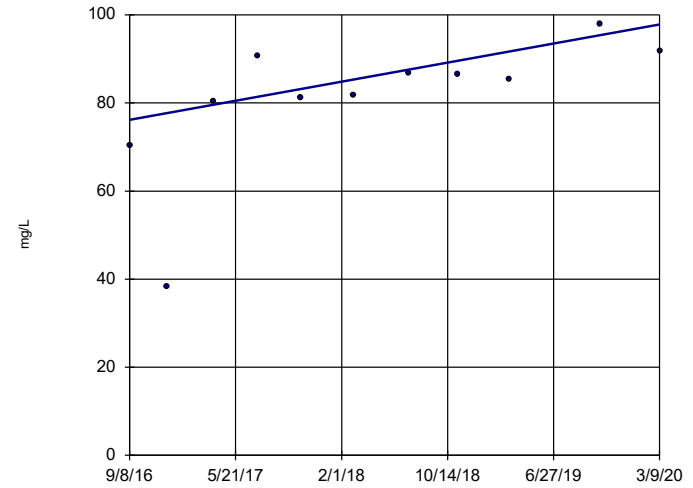
Sen's Slope Estimator
DGWC-37



n = 11
Slope = 0.03763 units per year.
Mann-Kendall statistic = 2
critical = 34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

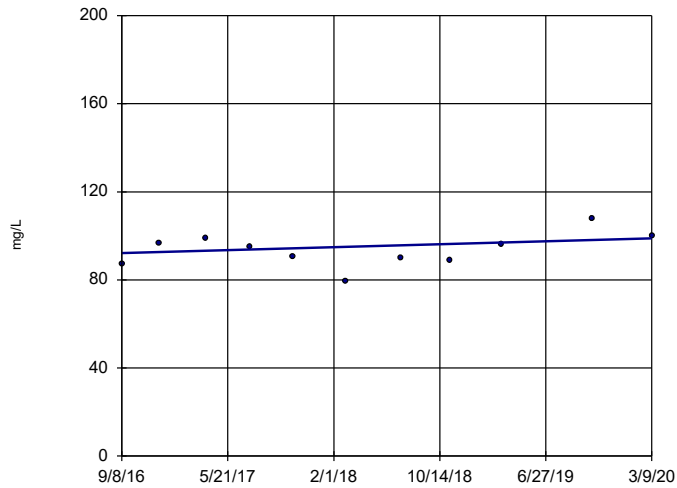
Sen's Slope Estimator
DGWC-38



n = 11
Slope = 6.169 units per year.
Mann-Kendall statistic = 35
critical = 34
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

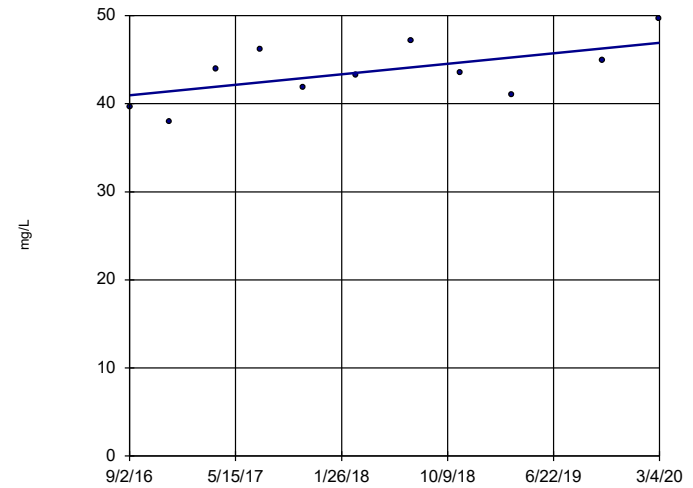
Sen's Slope Estimator
DGWC-39



n = 11
Slope = 1.881 units per year.
Mann-Kendall statistic = 11
critical = 34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

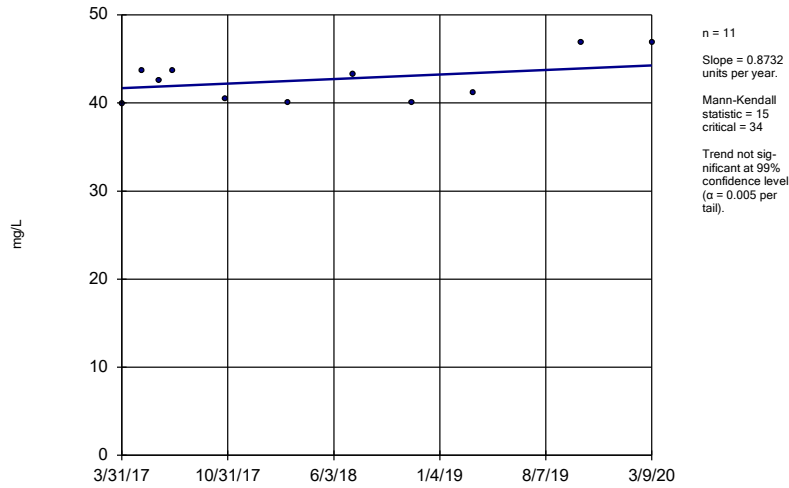
Sen's Slope Estimator
DGWC-40



n = 11
Slope = 1.695 units per year.
Mann-Kendall statistic = 23
critical = 34
Trend not significant at 99% confidence level (α = 0.005 per tail).

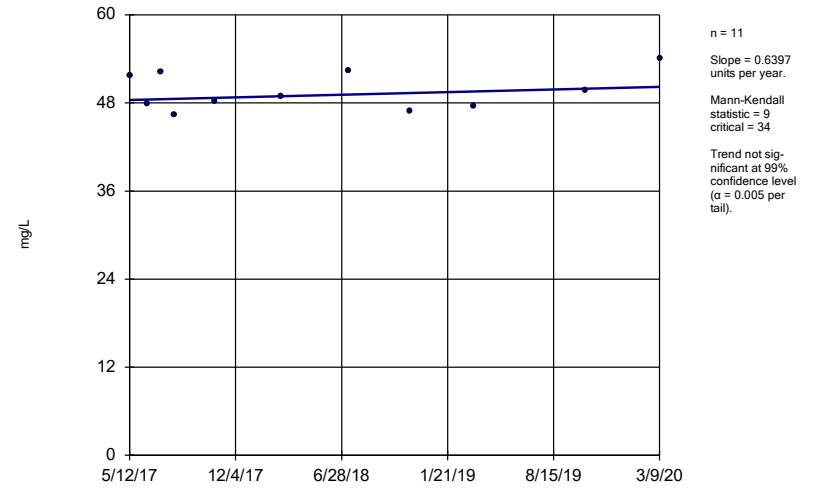
Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-67



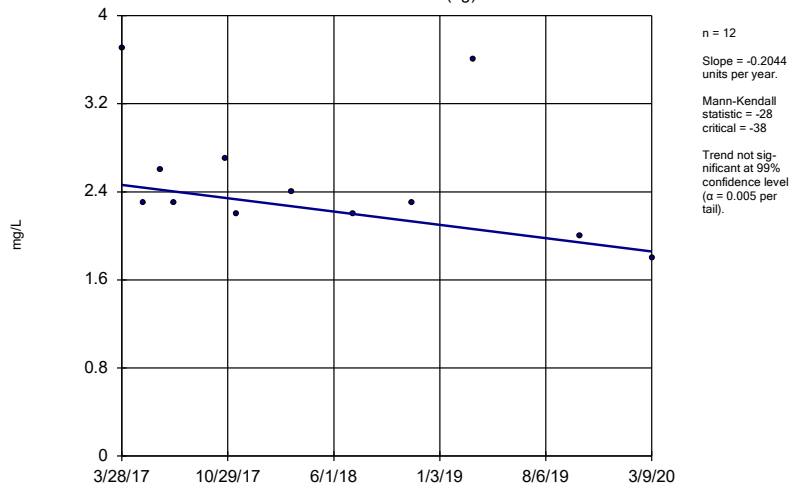
Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-68A



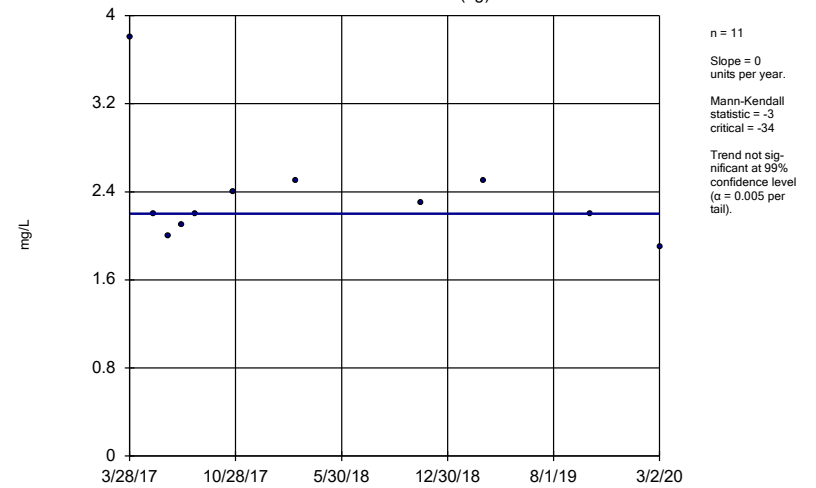
Constituent: Calcium Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWA-53 (bg)



Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

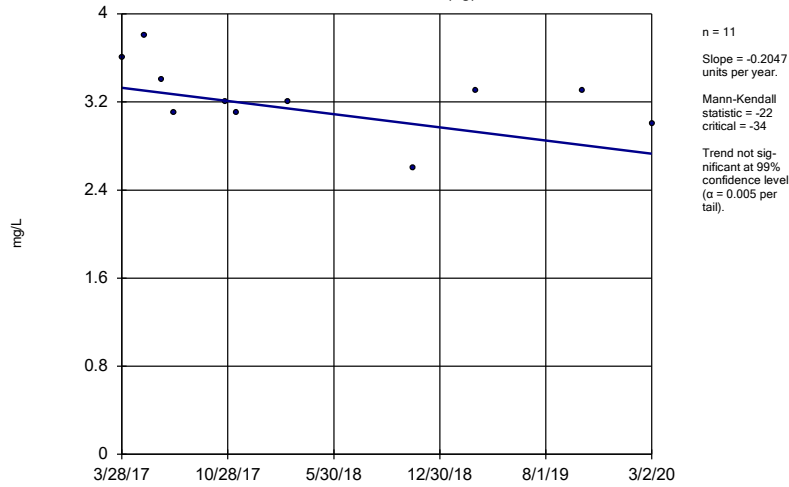
Sen's Slope Estimator
DGWA-70A (bg)



Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

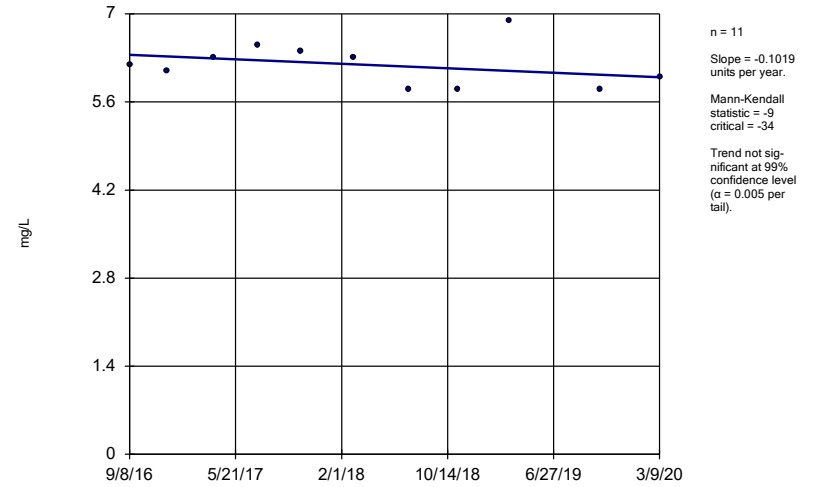
DGWA-71 (bg)



Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

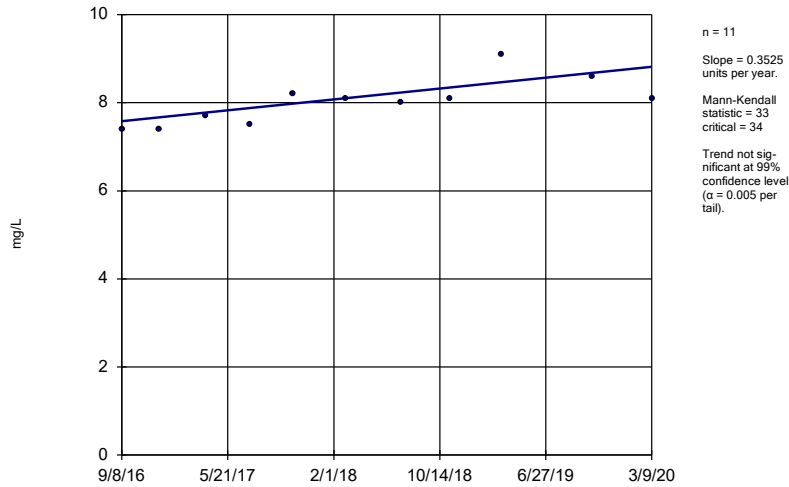
DGWC-37



Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

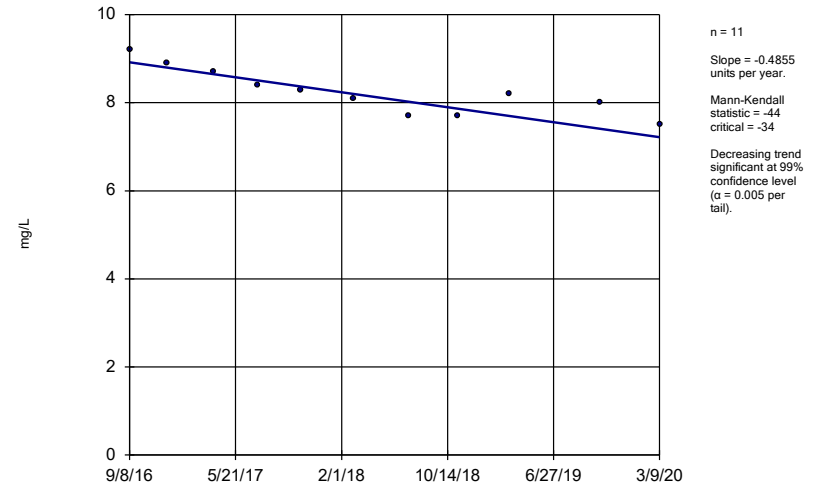
DGWC-38



Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

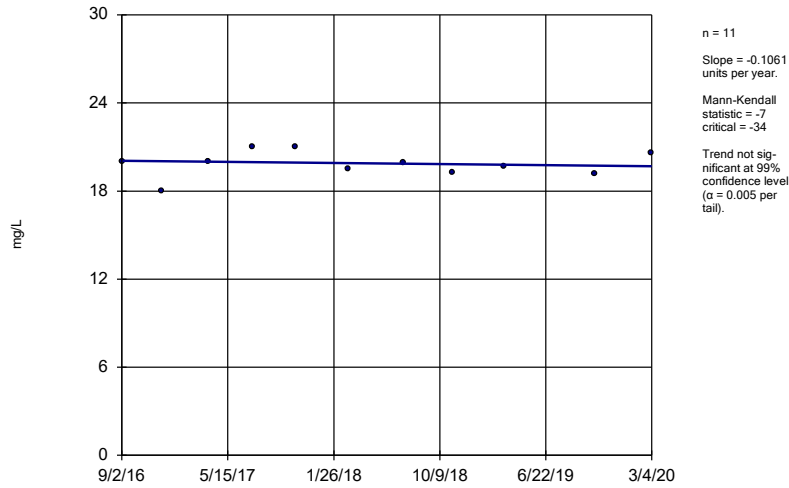
Sen's Slope Estimator

DGWC-39



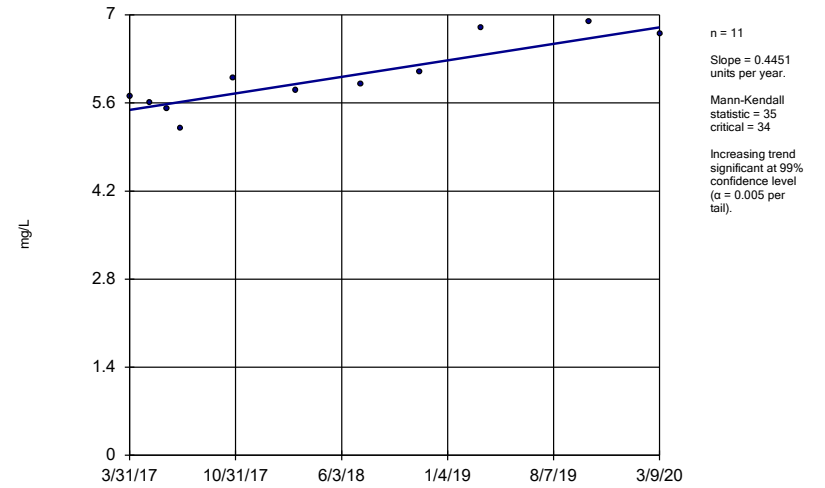
Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-40



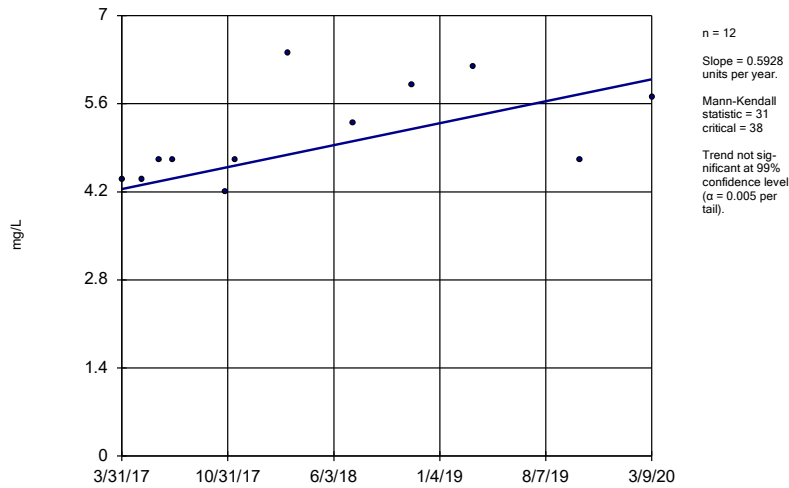
Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-67



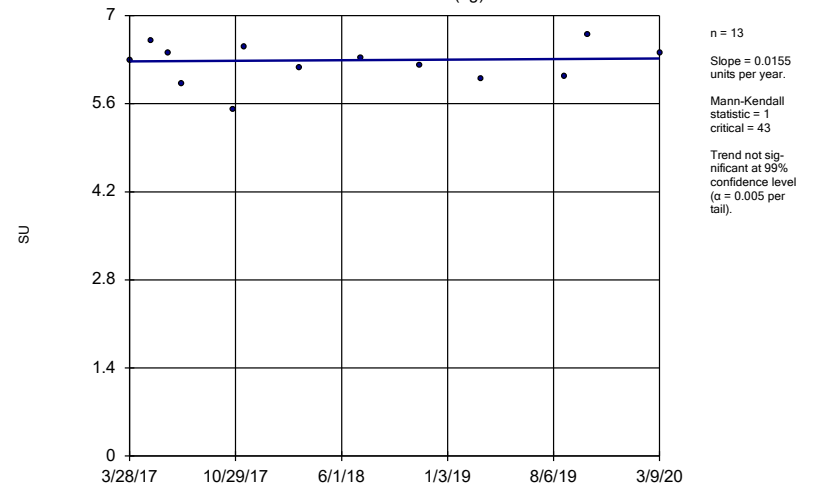
Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-69



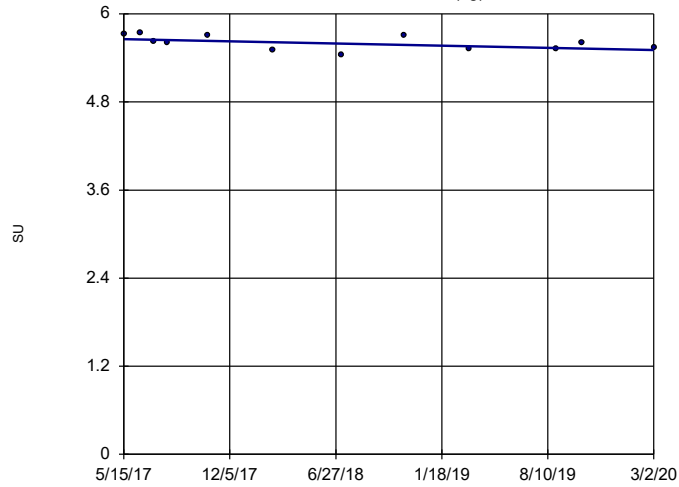
Constituent: Chloride Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWA-53 (bg)



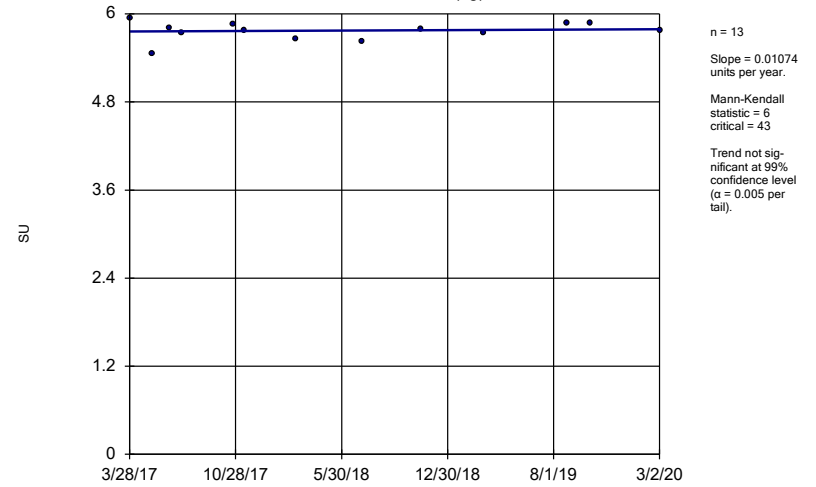
Constituent: pH Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWA-70A (bg)



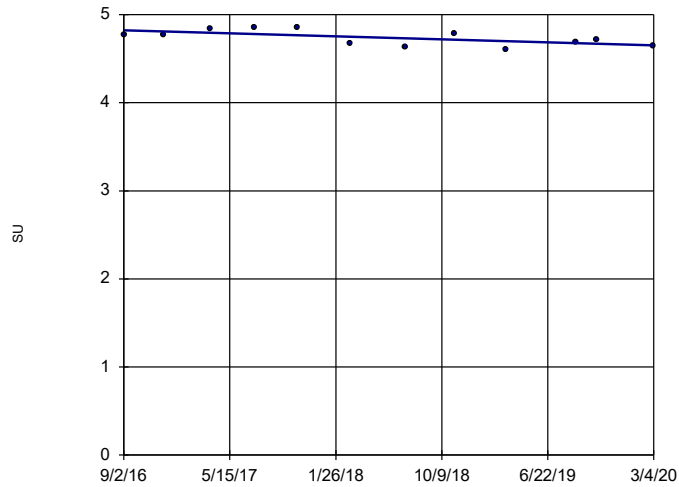
Constituent: pH Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWA-71 (bg)



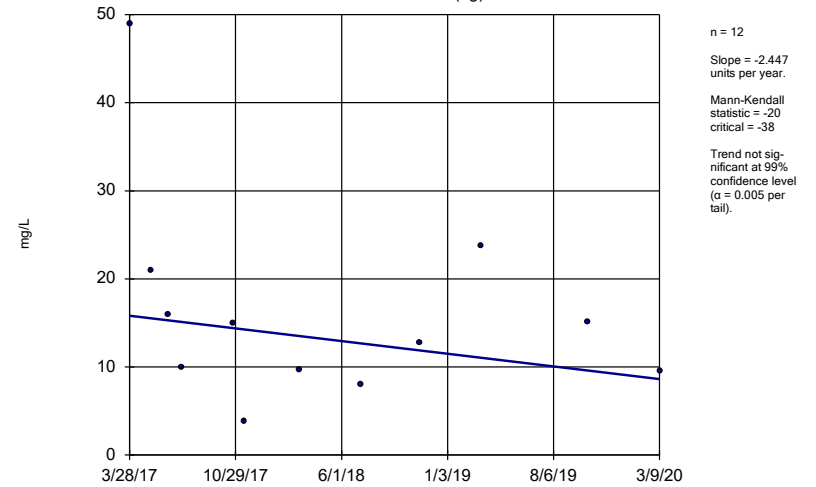
Constituent: pH Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-40



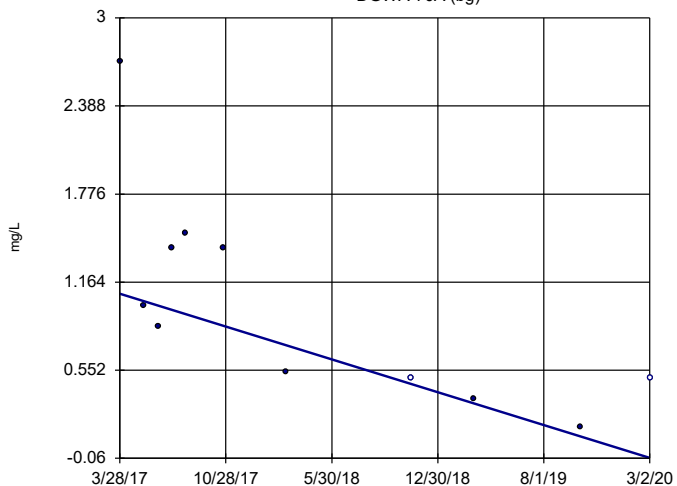
Constituent: pH Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWA-53 (bg)



Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

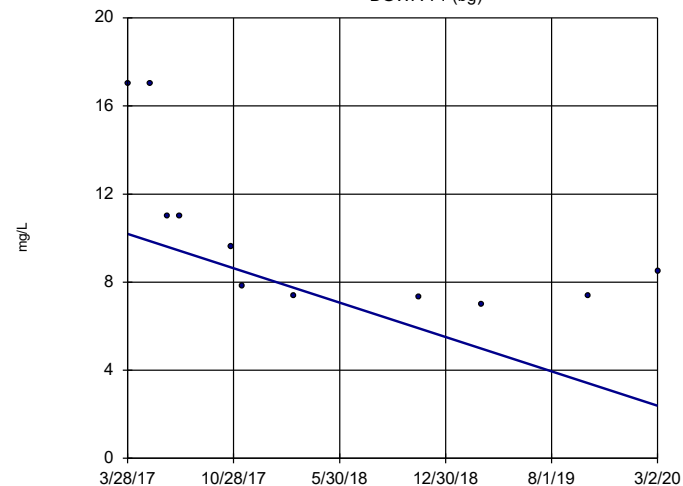
Sen's Slope Estimator
 DGWA-70A (bg)



n = 11
 Slope = -0.3895
 units per year.
 Mann-Kendall
 statistic = -35
 critical = -34
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

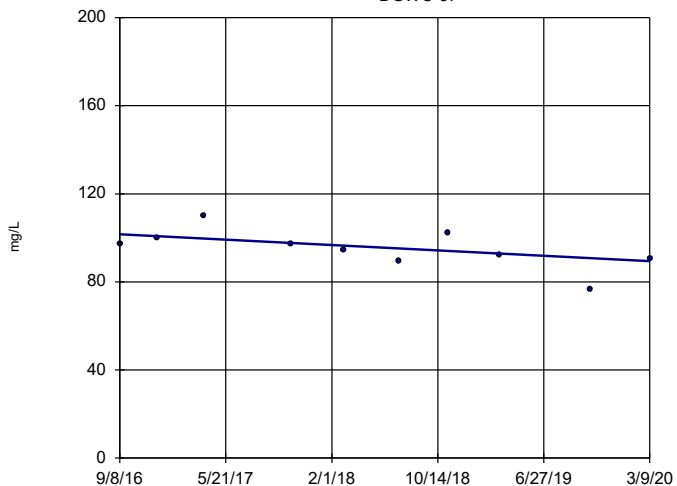
Sen's Slope Estimator
 DGWA-71 (bg)



n = 11
 Slope = -2.658
 units per year.
 Mann-Kendall
 statistic = -38
 critical = -34
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

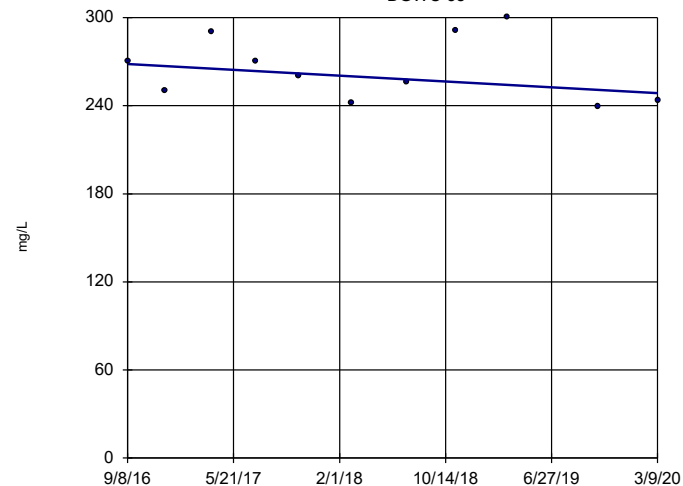
Sen's Slope Estimator
 DGWC-37



n = 10
 Slope = -3.483
 units per year.
 Mann-Kendall
 statistic = -22
 critical = -30
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

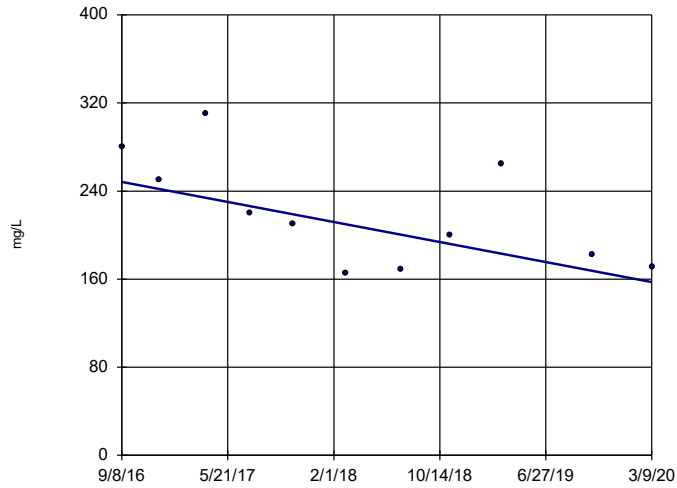
Sen's Slope Estimator
 DGWC-38



n = 11
 Slope = -5.637
 units per year.
 Mann-Kendall
 statistic = -8
 critical = -34
 Trend not sig-
 nificant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

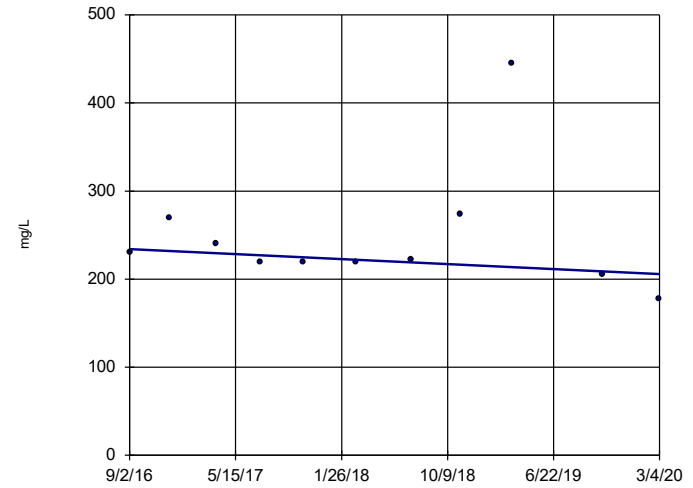
Sen's Slope Estimator
DGWC-39



n = 11
Slope = -26.03 units per year.
Mann-Kendall statistic = -25
critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

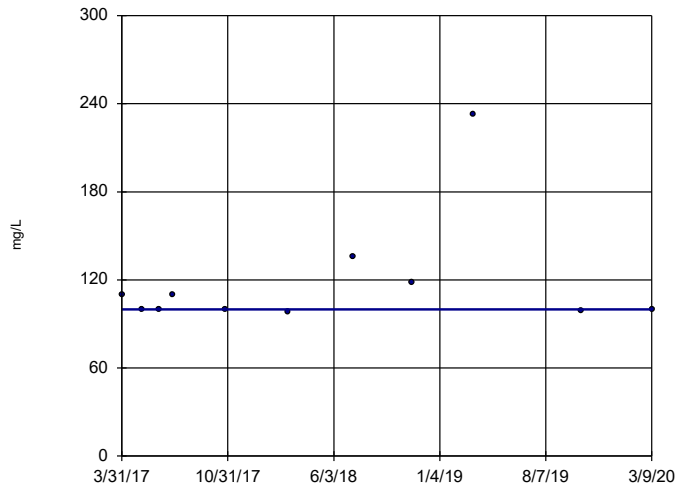
Sen's Slope Estimator
DGWC-40



n = 11
Slope = -7.997 units per year.
Mann-Kendall statistic = -14
critical = -34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

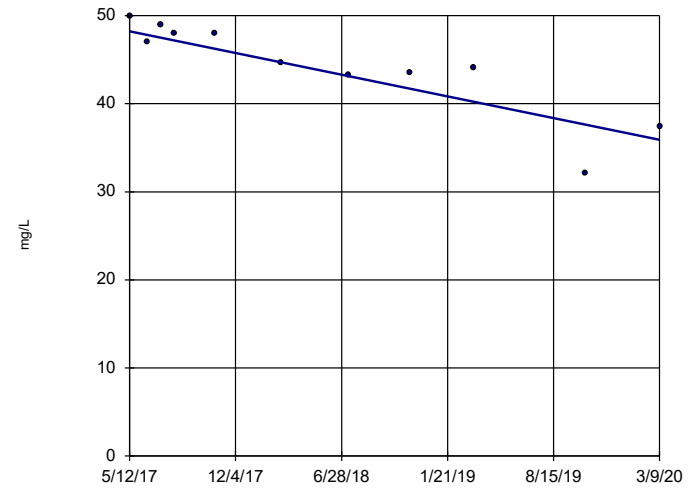
Sen's Slope Estimator
DGWC-67



n = 11
Slope = 0 units per year.
Mann-Kendall statistic = 2
critical = 34
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator
DGWC-68A

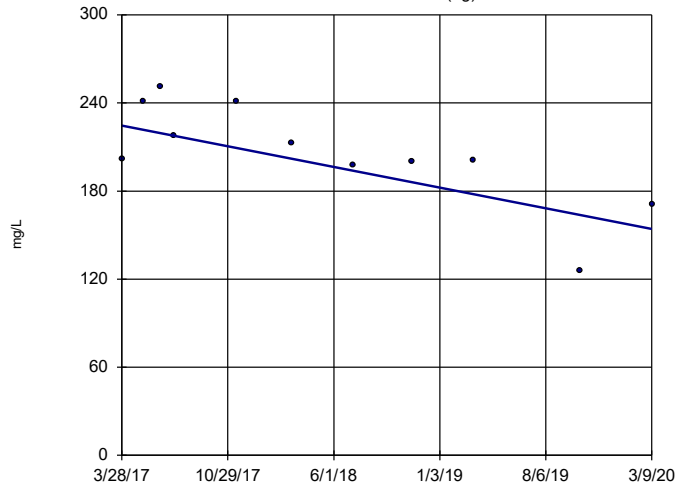


n = 11
Slope = -4.353 units per year.
Mann-Kendall statistic = -40
critical = -34
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 4/17/2020 11:18 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWA-53 (bg)

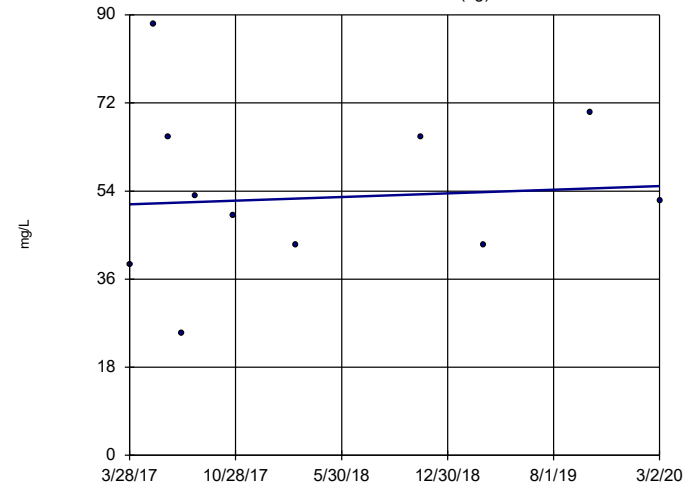


n = 11
 Slope = -23.86 units per year.
 Mann-Kendall statistic = -32
 critical = -34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWA-70A (bg)

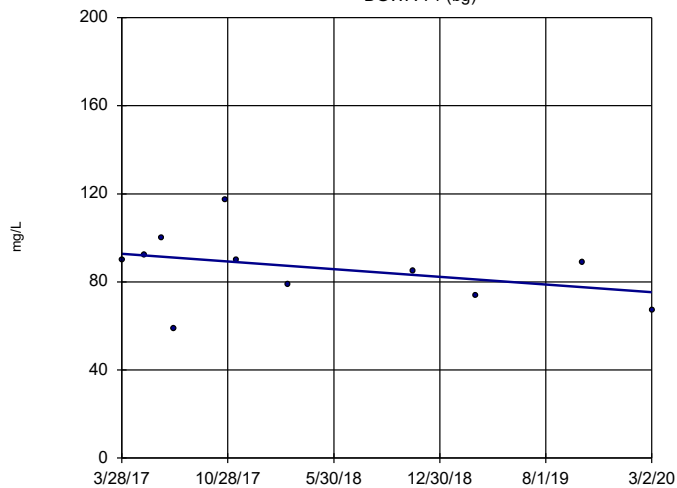


n = 11
 Slope = 1.273 units per year.
 Mann-Kendall statistic = 3
 critical = 34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWA-71 (bg)

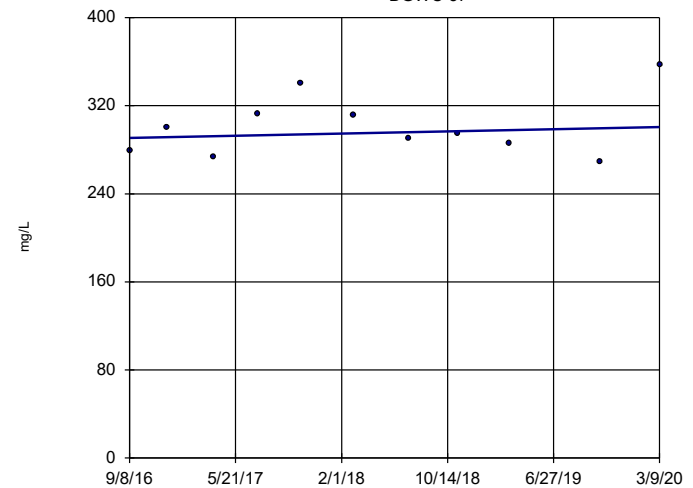


n = 11
 Slope = -5.967 units per year.
 Mann-Kendall statistic = -20
 critical = -34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-37

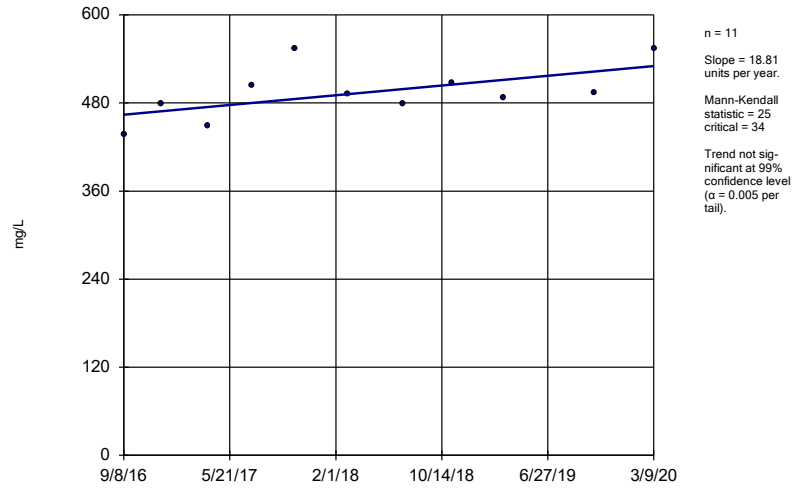


n = 11
 Slope = 2.789 units per year.
 Mann-Kendall statistic = 1
 critical = 34
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

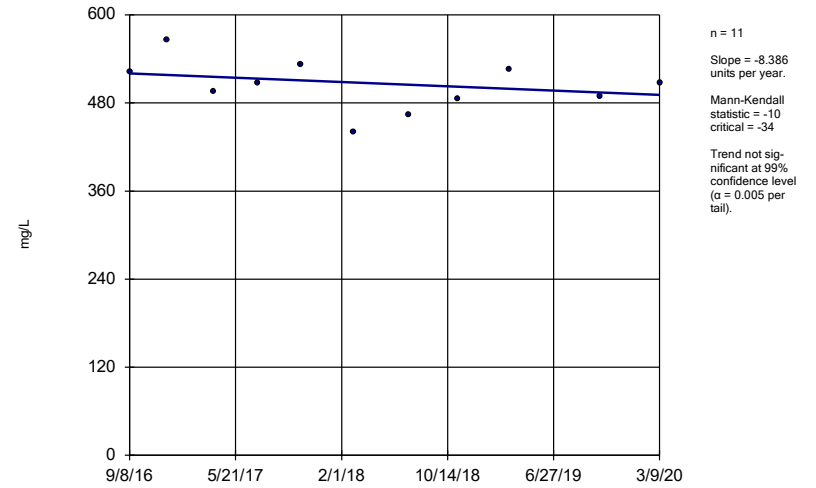
DGWC-38



Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

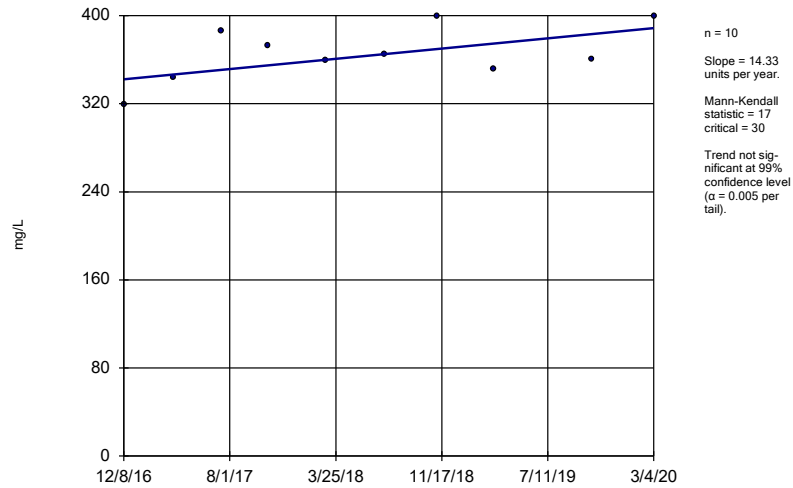
DGWC-39



Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Sen's Slope Estimator

DGWC-40



Constituent: TDS Analysis Run 4/17/2020 11:18 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

FIGURE F.

Tolerance Limit Summary Table

Plant McDonough Client: Southern Company Data: McDonough AP Printed 4/23/2020, 2:45 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	32	n/a	n/a	87.5	n/a	n/a	0.1937	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	32	n/a	n/a	78.13	n/a	n/a	0.1937	NP Inter(NDs)
Barium (mg/L)	n/a	0.19	n/a	n/a	n/a	n/a	32	n/a	n/a	0	n/a	n/a	0.1937	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	32	n/a	n/a	81.25	n/a	n/a	0.1937	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	n/a	32	n/a	n/a	90.63	n/a	n/a	0.1937	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	31	n/a	n/a	54.84	n/a	n/a	0.2039	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0322	n/a	n/a	n/a	n/a	32	n/a	n/a	28.13	n/a	n/a	0.1937	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	6.04	n/a	n/a	n/a	n/a	34	1.175	0.5892	0	None	sqrt(x)	0.05	Inter
Fluoride (mg/L)	n/a	1.2	n/a	n/a	n/a	n/a	37	n/a	n/a	45.95	n/a	n/a	0.1499	NP Inter(normality)
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	32	n/a	n/a	78.13	n/a	n/a	0.1937	NP Inter(NDs)
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	n/a	32	n/a	n/a	40.63	n/a	n/a	0.1937	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	n/a	32	n/a	n/a	87.5	n/a	n/a	0.1937	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.0409	n/a	n/a	n/a	n/a	32	n/a	n/a	62.5	n/a	n/a	0.1937	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	32	n/a	n/a	100	n/a	n/a	0.1937	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	n/a	32	n/a	n/a	93.75	n/a	n/a	0.1937	NP Inter(NDs)

FIGURE G.

PLANT MCDONOUGH ASH POND 1 GWPS TABLE - FEDERAL				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	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		0.19	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		0.01	0.1
Cobalt, Total (mg/L)		0.006	0.0322	0.0322
Combined Radium, Total (pCi/L)	5		6.04	6.04
Fluoride, Total (mg/L)	4		1.2	4
Lead, Total (mg/L)		0.015	0.005	0.015
Lithium, Total (mg/L)		0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)		0.1	0.0409	0.1
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**Highlighted cells indicated Background is higher than MCLs or CCR-Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

FIGURE H.

PLANT MCDONOUGH ASH POND 1 GWPS TABLE - STATE				
Constituent Name	MCL	CCR-Rule Specified	Background Limit	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		0.19	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		0.01	0.1
Cobalt, Total (mg/L)		0.006	0.0322	0.0322
Combined Radium, Total (pCi/L)	5		6.04	6.04
Fluoride, Total (mg/L)	4		1.2	4
Lead, Total (mg/L)		0.015	0.005	0.005
Lithium, Total (mg/L)		0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0005	0.002
Molybdenum, Total (mg/L)		0.1	0.0409	0.0409
Selenium, Total (mg/L)	0.05		0.01	0.05
Thallium, Total (mg/L)	0.002		0.001	0.002

**Highlighted cells indicated Background is higher than MCLs or CCR-Rule*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

FIGURE I.

Federal Confidence Intervals - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:42 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)	DGWC-40	0.04578	0.03557	0.0322	Yes 11	0.04067	0.006128	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.1	Yes 11	0.2149	0.02313	0	None	ln(x)	0.01	Param.

Federal Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:42 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No	10	0.00245	0.001004	70	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-68A	0.003	0.003	0.006	No	10	0.00278	0.0006957	90	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.003	0.006	No	11	0.002791	0.0006935	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.005	0.01	No	11	0.004718	0.0009347	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.005	0.01	No	11	0.004591	0.001357	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No	11	0.002674	0.002234	45.45	None	No	0.006	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No	11	0.00385	0.001973	72.73	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.005	0.01	No	11	0.004584	0.001381	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04377	0.009083	0.01	No	13	0.0354	0.0477	0	None	ln(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1174	0.09333	2	No	11	0.1054	0.01444	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03392	0.03248	2	No	11	0.0332	0.0008649	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09798	0.08257	2	No	11	0.09027	0.009248	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01798	0.01671	2	No	11	0.01735	0.0007568	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.111	0.102	2	No	11	0.109	0.007099	0	None	No	0.006	NP (normality)
Barium (mg/L)	DGWC-68A	0.08999	0.08641	2	No	11	0.0882	0.002148	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1055	0.06992	2	No	12	0.08773	0.0227	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No	11	0.002469	0.001182	81.82	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003388	0.002794	0.004	No	11	0.003091	0.0003562	9.091	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-68A	0.003	0.003	0.004	No	11	0.002735	0.0008792	90.91	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.00007	0.004	No	12	0.002267	0.001326	75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-37	0.0025	0.0001	0.005	No	11	0.001855	0.001106	72.73	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No	11	0.0004882	0.0007093	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No	11	0.0009864	0.00051	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00021	0.005	No	11	0.00208	0.0009345	81.82	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No	11	0.001306	0.001168	54.55	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No	12	0.001722	0.001149	66.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-37	0.01	0.01	0.1	No	11	0.009155	0.002804	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No	11	0.007442	0.004383	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No	11	0.004954	0.004833	45.45	None	No	0.006	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No	11	0.007462	0.004348	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.01	0.1	No	11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No	12	0.008474	0.003567	83.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0003	0.0322	No	11	0.003736	0.002165	72.73	None	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0015	0.0322	No	11	0.002664	0.00264	18.18	None	No	0.006	NP (normality)
Cobalt (mg/L)	DGWC-39	0.006831	0.006124	0.0322	No	11	0.006727	0.001251	18.18	Kaplan-Meier	sqrt(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04578	0.03557	0.0322	Yes	11	0.04067	0.006128	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.004021	0.001268	0.0322	No	11	0.003718	0.002673	18.18	Kaplan-Meier	No	0.01	Param.
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.0322	No	11	0.003845	0.001998	72.73	Kaplan-Meier	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0009	0.0322	No	12	0.003417	0.001802	50	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.14	0.4228	6.04	No	11	0.7947	0.491	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.106	0.4799	6.04	No	11	0.793	0.3757	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.554	0.7169	6.04	No	11	1.136	0.5024	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.603	0.3583	6.04	No	11	0.9808	0.747	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9917	0.4638	6.04	No	11	0.7277	0.3167	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.518	0.453	6.04	No	11	0.9857	0.6393	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.661	1.015	6.04	No	12	1.338	0.4115	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.162	0.06192	4	No	12	0.1211	0.0857	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-38	0.218	0.07029	4	No	12	0.1589	0.1171	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-39	0.2344	0.09725	4	No	12	0.1788	0.1315	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-40	0.393	0.1495	4	No	12	0.2783	0.1663	8.333	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.1586	0.01638	4	No	12	0.1407	0.1335	41.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-68A	0.23	0.093	4	No	12	0.142	0.08141	8.333	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.2065	0.1033	4	No	13	0.1549	0.06941	7.692	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.015	No	11	0.004224	0.001753	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.015	No	11	0.003658	0.002299	72.73	None	No	0.006	NP (NDs)

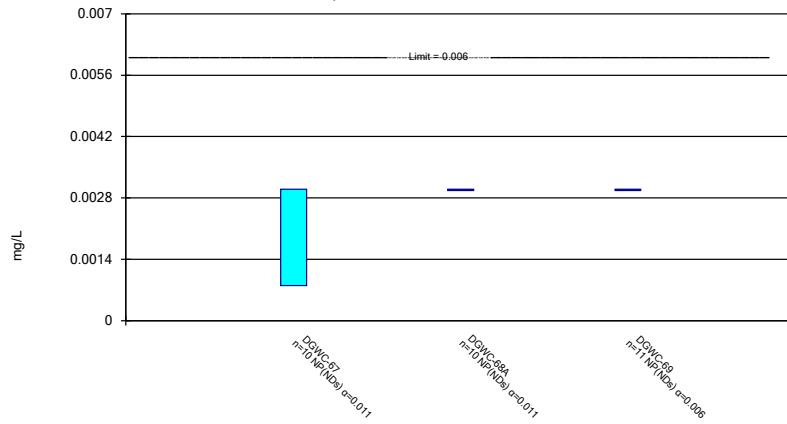
Federal Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:42 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lead (mg/L)	DGWC-39	0.005	0.005	0.015	No 11	0.004553	0.001483	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.015	No 11	0.002776	0.002555	54.55	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-67	0.005	0.00009	0.015	No 11	0.004103	0.001995	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.015	No 12	0.003773	0.002219	75	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.04	No 11	0.01243	0.01394	36.36	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0032	0.04	No 11	0.005764	0.008039	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-40	0.03	0.0022	0.04	No 11	0.007336	0.01121	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.04	No 11	0.007	0.007637	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.03	0.04	No 11	0.02742	0.008563	90.91	None	No	0.006	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.04	No 12	0.0052	0.007817	8.333	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0002	0.00006	0.002	No 11	0.0001731	0.00005998	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0002	0.00007	0.002	No 11	0.0001736	0.00005904	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0002	0.0002	0.002	No 11	0.0001872	0.00004251	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0002	0.000045	0.002	No 11	0.0001617	0.00006659	72.73	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0002	0.00007	0.002	No 12	0.0001892	0.00003753	91.67	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.0011	0.1	No 11	0.006764	0.00449	63.64	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.1	Yes 11	0.2149	0.02313	0	None	In(x)	0.01	Param.
Molybdenum (mg/L)	DGWC-69	0.01496	0.006455	0.1	No 12	0.01104	0.006485	8.333	None	x^(1/3)	0.01	Param.
Selenium (mg/L)	DGWC-40	0.01	0.0019	0.05	No 11	0.004709	0.00351	27.27	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 11	0.0005182	0.0004617	45.45	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 11	0.0005845	0.0004774	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-40	0.001	0.00006	0.002	No 11	0.0005753	0.000488	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.001	0.002	No 11	0.0009227	0.0002563	90.91	None	No	0.006	NP (NDs)

Non-Parametric Confidence Interval

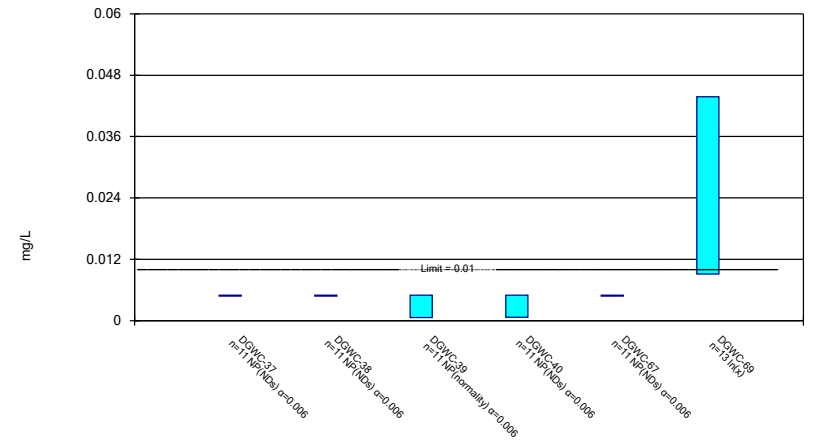
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

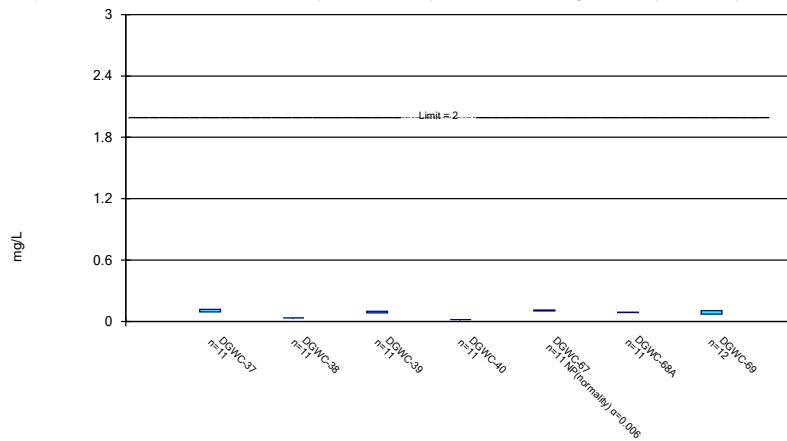
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

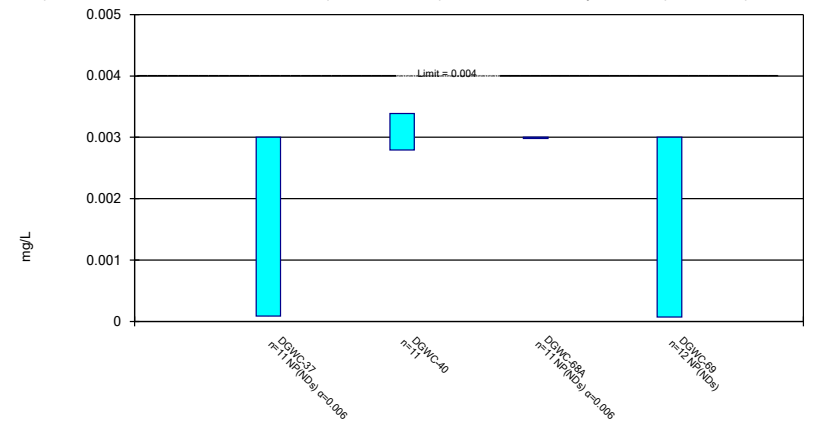
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

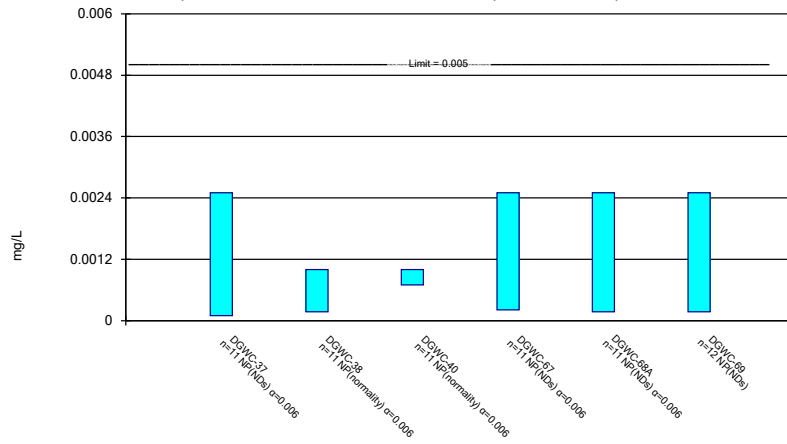
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

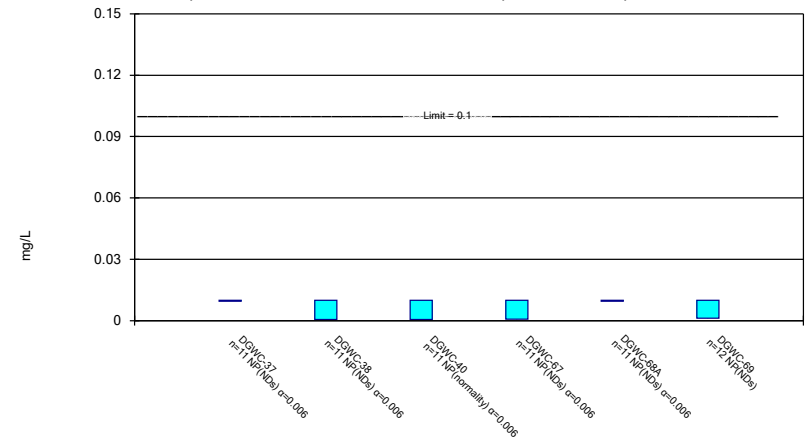
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Cadmium Analysis Run 5/29/2020 10:39 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

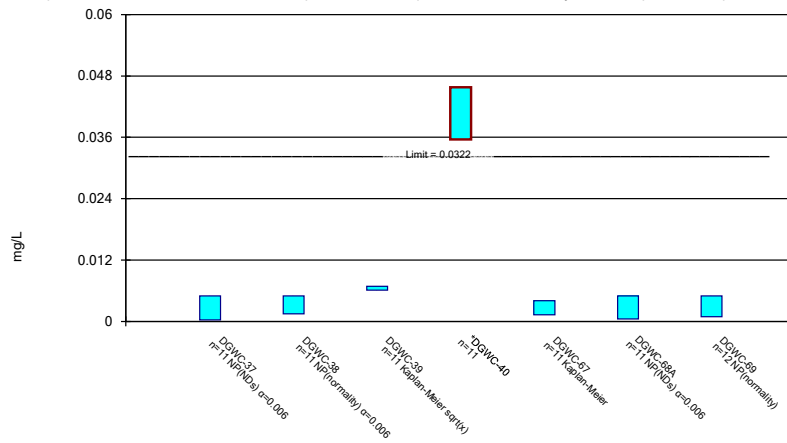
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 5/29/2020 10:39 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

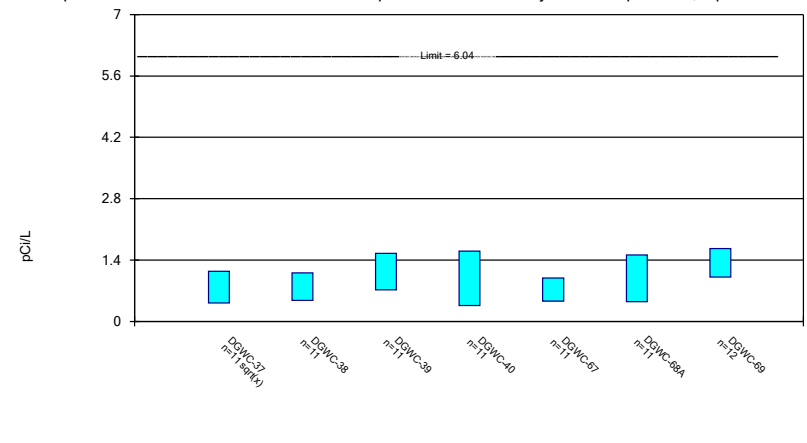
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 5/29/2020 10:39 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric Confidence Interval

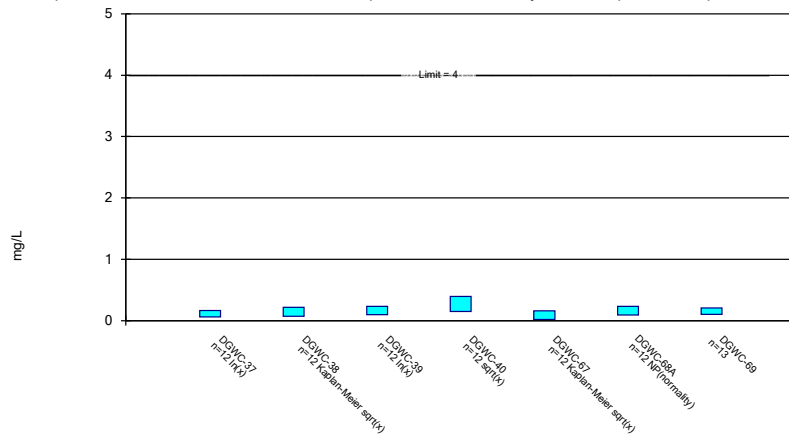
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 5/29/2020 10:39 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

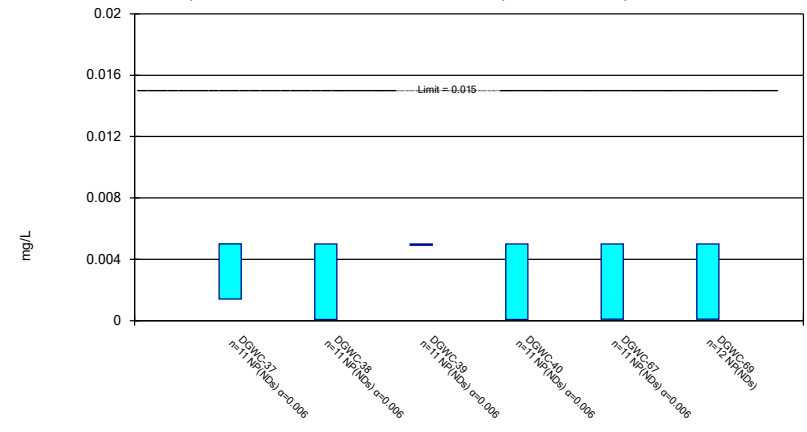
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

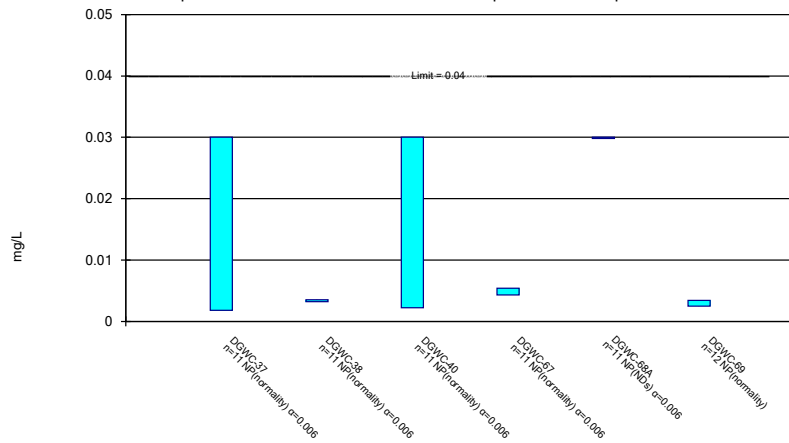
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

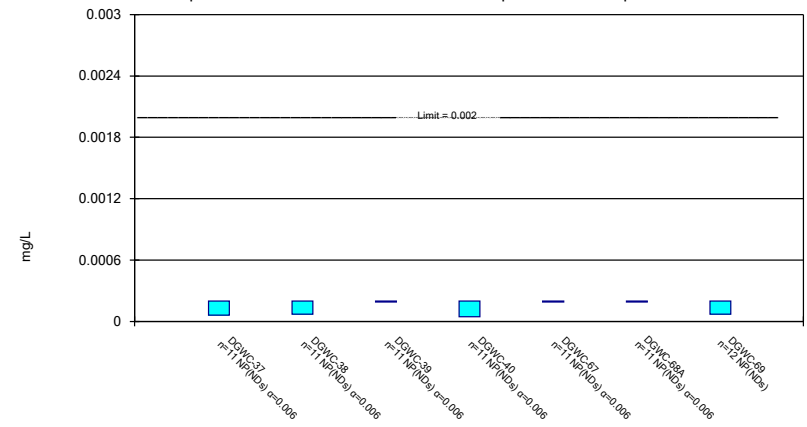
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lithium Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

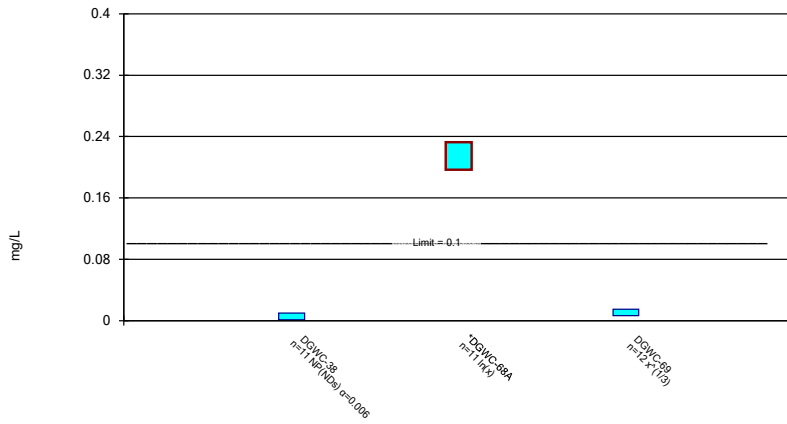
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Mercury Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

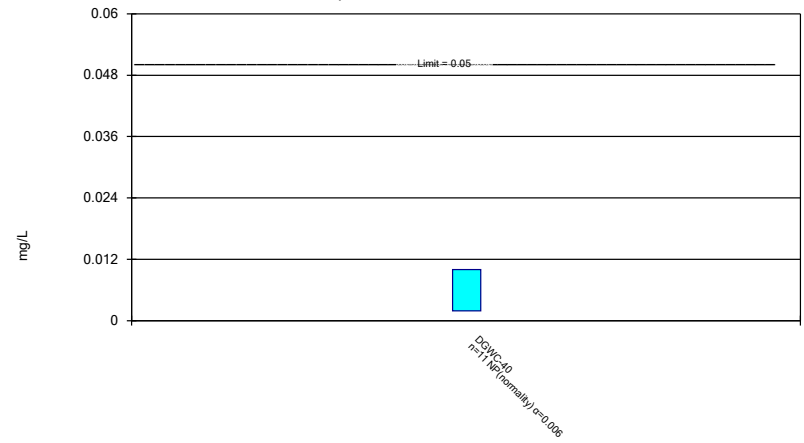
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

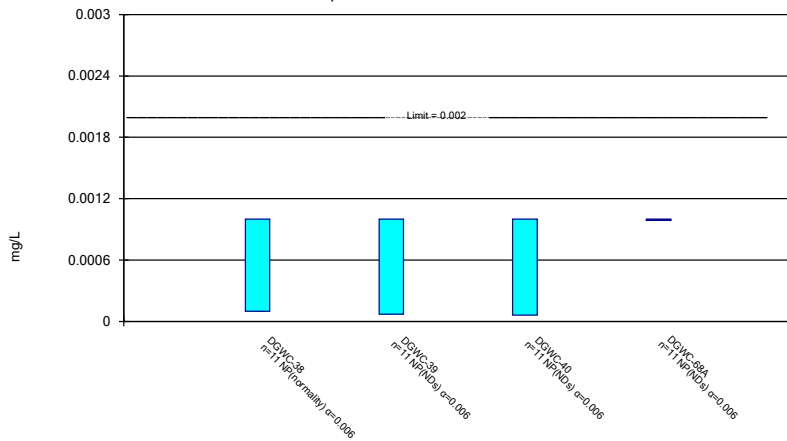
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 5/29/2020 10:39 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

FIGURE J.

State Confidence Intervals - Significant Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:48 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (mg/L)	DGWC-40	0.04578	0.03557	0.0322	Yes 11	0.04067	0.006128	0	None	No	0.01	Param.
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.0409	Yes 11	0.2149	0.02313	0	None	ln(x)	0.01	Param.

State Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:48 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	DGWC-67	0.003	0.0008	0.006	No	10	0.00245	0.001004	70	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-68A	0.003	0.003	0.006	No	10	0.00278	0.0006957	90	None	No	0.011	NP (NDs)
Antimony (mg/L)	DGWC-69	0.003	0.003	0.006	No	11	0.002791	0.0006935	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-37	0.005	0.005	0.01	No	11	0.004718	0.0009347	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-38	0.005	0.005	0.01	No	11	0.004591	0.001357	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-39	0.005	0.00057	0.01	No	11	0.002674	0.002234	45.45	None	No	0.006	NP (normality)
Arsenic (mg/L)	DGWC-40	0.005	0.00065	0.01	No	11	0.00385	0.001973	72.73	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-67	0.005	0.005	0.01	No	11	0.004584	0.001381	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	DGWC-69	0.04377	0.009083	0.01	No	13	0.0354	0.0477	0	None	ln(x)	0.01	Param.
Barium (mg/L)	DGWC-37	0.1174	0.09333	2	No	11	0.1054	0.01444	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-38	0.03392	0.03248	2	No	11	0.0332	0.0008649	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-39	0.09798	0.08257	2	No	11	0.09027	0.009248	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-40	0.01798	0.01671	2	No	11	0.01735	0.0007568	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-67	0.111	0.102	2	No	11	0.109	0.007099	0	None	No	0.006	NP (normality)
Barium (mg/L)	DGWC-68A	0.08999	0.08641	2	No	11	0.0882	0.002148	0	None	No	0.01	Param.
Barium (mg/L)	DGWC-69	0.1055	0.06992	2	No	12	0.08773	0.0227	0	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-37	0.003	0.000086	0.004	No	11	0.002469	0.001182	81.82	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-40	0.003388	0.002794	0.004	No	11	0.003091	0.0003562	9.091	None	No	0.01	Param.
Beryllium (mg/L)	DGWC-68A	0.003	0.003	0.004	No	11	0.002735	0.0008792	90.91	None	No	0.006	NP (NDs)
Beryllium (mg/L)	DGWC-69	0.003	0.00007	0.004	No	12	0.002267	0.001326	75	None	No	0.01	NP (NDs)
Cadmium (mg/L)	DGWC-37	0.0025	0.0001	0.005	No	11	0.001855	0.001106	72.73	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-38	0.001	0.00017	0.005	No	11	0.0004882	0.0007093	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-40	0.001	0.0007	0.005	No	11	0.0009864	0.00051	18.18	None	No	0.006	NP (normality)
Cadmium (mg/L)	DGWC-67	0.0025	0.00021	0.005	No	11	0.00208	0.0009345	81.82	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-68A	0.0025	0.00017	0.005	No	11	0.001306	0.001168	54.55	None	No	0.006	NP (NDs)
Cadmium (mg/L)	DGWC-69	0.0025	0.00017	0.005	No	12	0.001722	0.001149	66.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	DGWC-37	0.01	0.01	0.1	No	11	0.009155	0.002804	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-38	0.01	0.0005	0.1	No	11	0.007442	0.004383	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-40	0.01	0.00061	0.1	No	11	0.004954	0.004833	45.45	None	No	0.006	NP (normality)
Chromium (mg/L)	DGWC-67	0.01	0.0007	0.1	No	11	0.007462	0.004348	72.73	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-68A	0.01	0.01	0.1	No	11	0.009136	0.002864	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	DGWC-69	0.01	0.0012	0.1	No	12	0.008474	0.003567	83.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	DGWC-37	0.005	0.0003	0.0322	No	11	0.003736	0.002165	72.73	None	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-38	0.005	0.0015	0.0322	No	11	0.002664	0.00264	18.18	None	No	0.006	NP (normality)
Cobalt (mg/L)	DGWC-39	0.006831	0.006124	0.0322	No	11	0.006727	0.001251	18.18	Kaplan-Meier	sqrt(x)	0.01	Param.
Cobalt (mg/L)	DGWC-40	0.04578	0.03557	0.0322	Yes	11	0.04067	0.006128	0	None	No	0.01	Param.
Cobalt (mg/L)	DGWC-67	0.004021	0.001268	0.0322	No	11	0.003718	0.002673	18.18	Kaplan-Meier	No	0.01	Param.
Cobalt (mg/L)	DGWC-68A	0.005	0.0005	0.0322	No	11	0.003845	0.001998	72.73	Kaplan-Meier	No	0.006	NP (NDs)
Cobalt (mg/L)	DGWC-69	0.005	0.0009	0.0322	No	12	0.003417	0.001802	50	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	DGWC-37	1.14	0.4228	6.04	No	11	0.7947	0.491	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-38	1.106	0.4799	6.04	No	11	0.793	0.3757	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-39	1.554	0.7169	6.04	No	11	1.136	0.5024	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-40	1.603	0.3583	6.04	No	11	0.9808	0.747	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-67	0.9917	0.4638	6.04	No	11	0.7277	0.3167	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-68A	1.518	0.453	6.04	No	11	0.9857	0.6393	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	DGWC-69	1.661	1.015	6.04	No	12	1.338	0.4115	0	None	No	0.01	Param.
Fluoride (mg/L)	DGWC-37	0.162	0.06192	4	No	12	0.1211	0.0857	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-38	0.218	0.07029	4	No	12	0.1589	0.1171	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-39	0.2344	0.09725	4	No	12	0.1788	0.1315	8.333	None	ln(x)	0.01	Param.
Fluoride (mg/L)	DGWC-40	0.393	0.1495	4	No	12	0.2783	0.1663	8.333	None	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-67	0.1586	0.01638	4	No	12	0.1407	0.1335	41.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	DGWC-68A	0.23	0.093	4	No	12	0.142	0.08141	8.333	None	No	0.01	NP (normality)
Fluoride (mg/L)	DGWC-69	0.2065	0.1033	4	No	13	0.1549	0.06941	7.692	None	No	0.01	Param.
Lead (mg/L)	DGWC-37	0.005	0.0014	0.005	No	11	0.004224	0.001753	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-38	0.005	0.000074	0.005	No	11	0.003658	0.002299	72.73	None	No	0.006	NP (NDs)

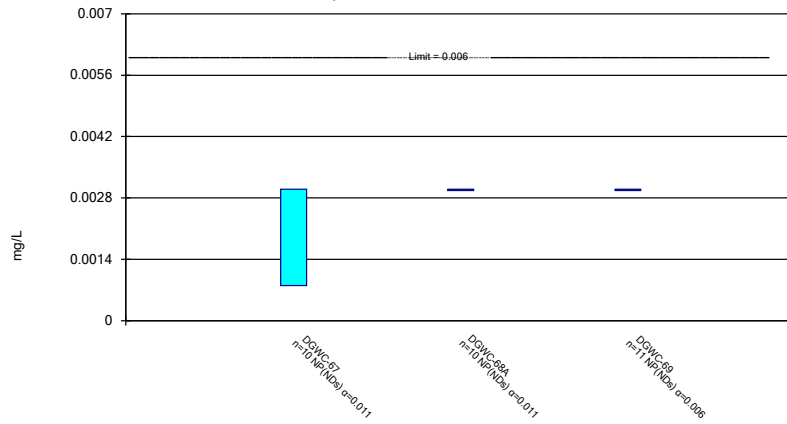
State Confidence Intervals - All Results

Plant McDonough Client: Southern Company Data: McDonough AP Printed 5/29/2020, 10:48 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lead (mg/L)	DGWC-39	0.005	0.005	0.005	No 11	0.004553	0.001483	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-40	0.005	0.00007	0.005	No 11	0.002776	0.002555	54.55	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-67	0.005	0.00009	0.005	No 11	0.004103	0.001995	81.82	None	No	0.006	NP (NDs)
Lead (mg/L)	DGWC-69	0.005	0.00009	0.005	No 12	0.003773	0.002219	75	None	No	0.01	NP (NDs)
Lithium (mg/L)	DGWC-37	0.03	0.0018	0.03	No 11	0.01243	0.01394	36.36	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-38	0.0035	0.0032	0.03	No 11	0.005764	0.008039	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-40	0.03	0.0022	0.03	No 11	0.007336	0.01121	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-67	0.0054	0.0043	0.03	No 11	0.007	0.007637	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	DGWC-68A	0.03	0.03	0.03	No 11	0.02742	0.008563	90.91	None	No	0.006	NP (NDs)
Lithium (mg/L)	DGWC-69	0.0034	0.0025	0.03	No 12	0.0052	0.007817	8.333	None	No	0.01	NP (normality)
Mercury (mg/L)	DGWC-37	0.0002	0.00006	0.002	No 11	0.0001731	0.00005998	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-38	0.0002	0.00007	0.002	No 11	0.0001736	0.00005904	81.82	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-39	0.0002	0.0002	0.002	No 11	0.0001872	0.00004251	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-40	0.0002	0.000045	0.002	No 11	0.0001617	0.00006659	72.73	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-67	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-68A	0.0002	0.0002	0.002	No 11	0.0001882	0.0000392	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	DGWC-69	0.0002	0.00007	0.002	No 12	0.0001892	0.00003753	91.67	None	No	0.01	NP (NDs)
Molybdenum (mg/L)	DGWC-38	0.01	0.0011	0.0409	No 11	0.006764	0.00449	63.64	None	No	0.006	NP (NDs)
Molybdenum (mg/L)	DGWC-68A	0.2326	0.1966	0.0409	Yes 11	0.2149	0.02313	0	None	In(x)	0.01	Param.
Molybdenum (mg/L)	DGWC-69	0.01496	0.006455	0.0409	No 12	0.01104	0.006485	8.333	None	x^(1/3)	0.01	Param.
Selenium (mg/L)	DGWC-40	0.01	0.0019	0.05	No 11	0.004709	0.00351	27.27	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-38	0.001	0.0001	0.002	No 11	0.0005182	0.0004617	45.45	None	No	0.006	NP (normality)
Thallium (mg/L)	DGWC-39	0.001	0.000071	0.002	No 11	0.0005845	0.0004774	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-40	0.001	0.00006	0.002	No 11	0.0005753	0.000488	54.55	None	No	0.006	NP (NDs)
Thallium (mg/L)	DGWC-68A	0.001	0.001	0.002	No 11	0.0009227	0.0002563	90.91	None	No	0.006	NP (NDs)

Non-Parametric Confidence Interval

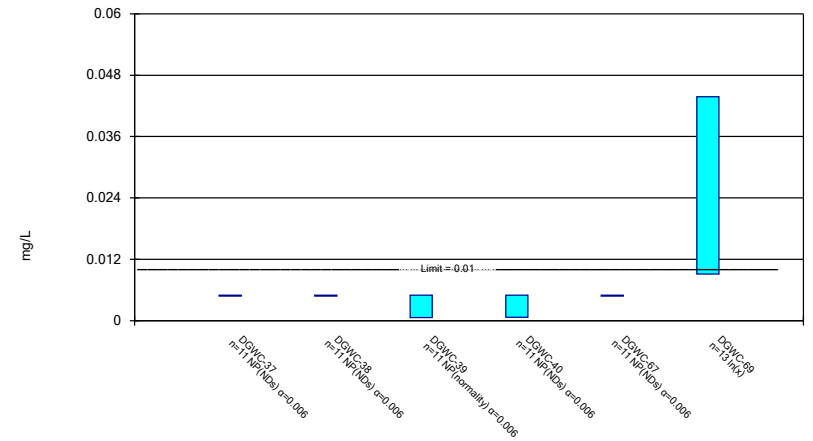
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

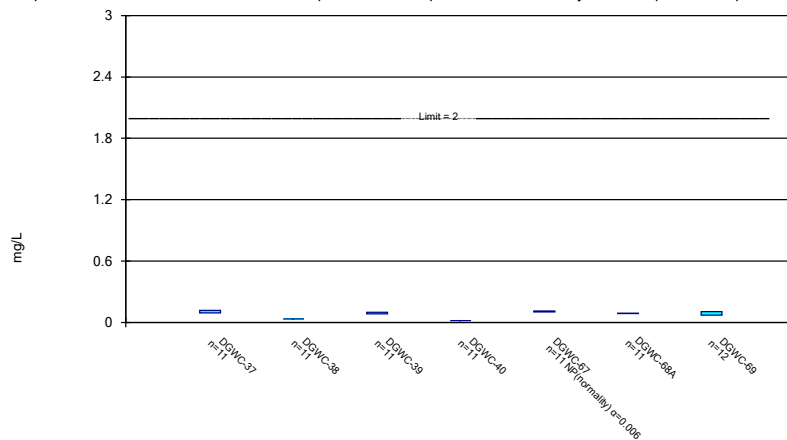
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

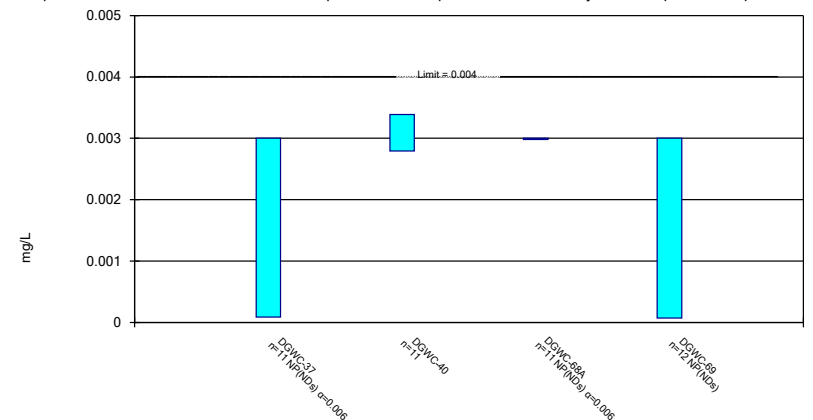
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

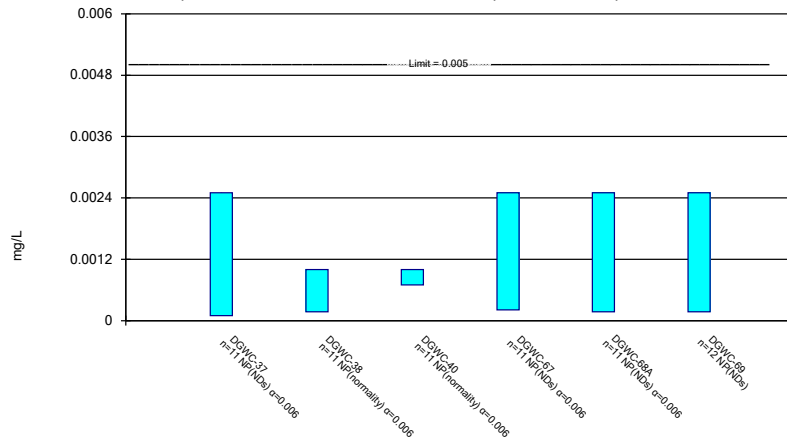
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

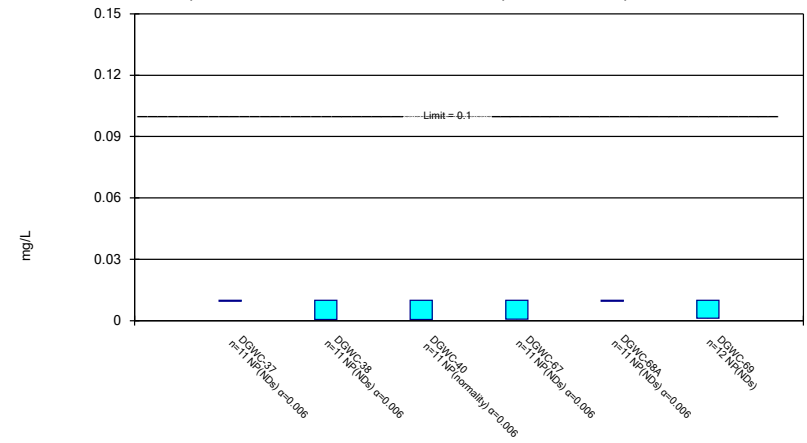
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Cadmium Analysis Run 5/29/2020 10:46 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

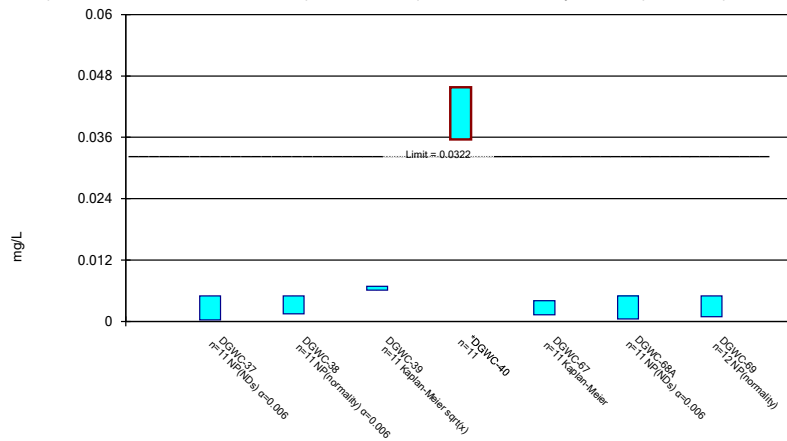
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 5/29/2020 10:46 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

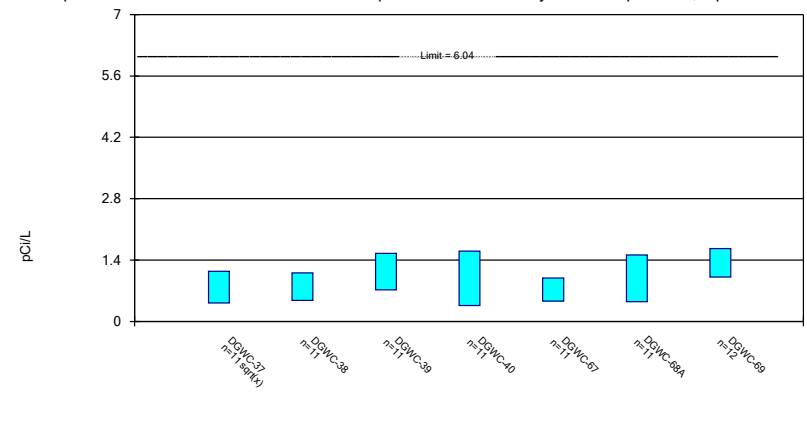
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 5/29/2020 10:46 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric Confidence Interval

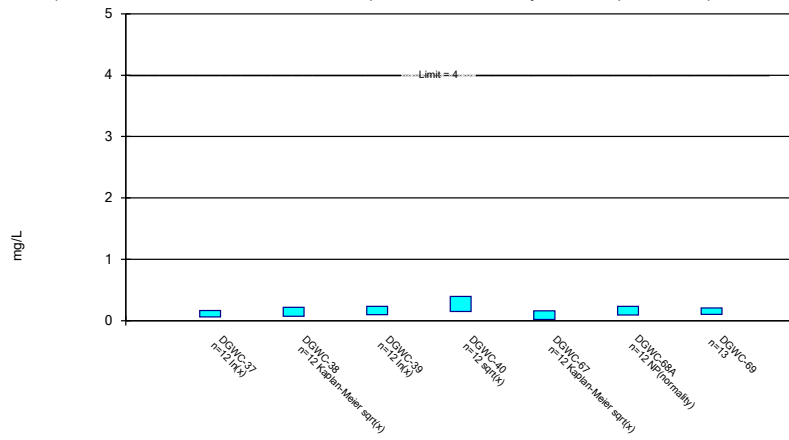
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 5/29/2020 10:46 AM View: AP - 1
Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

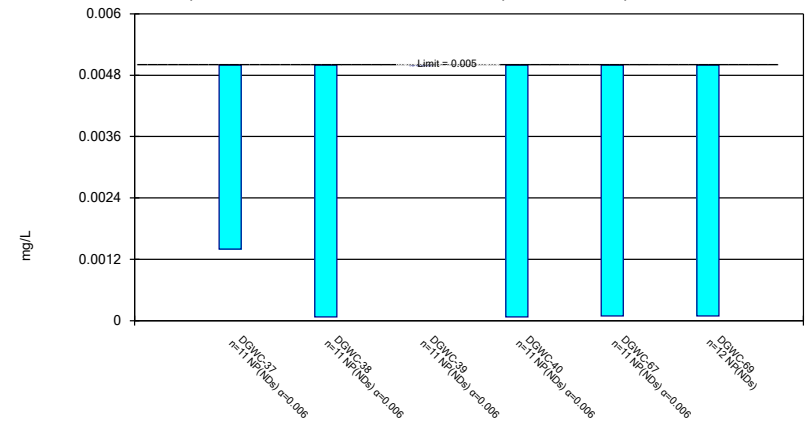
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

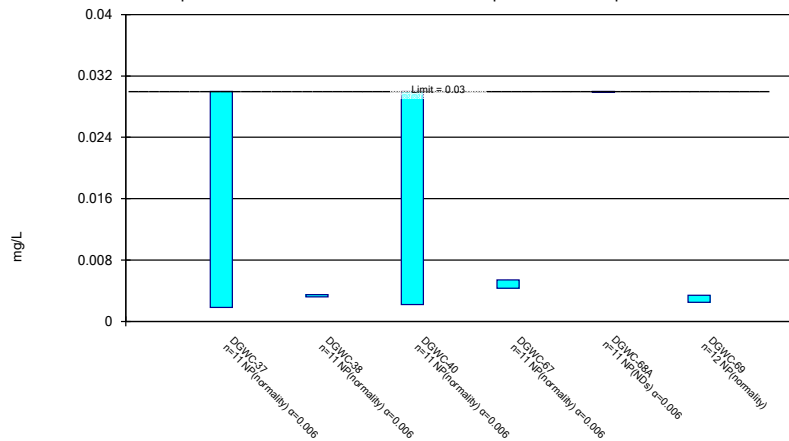
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

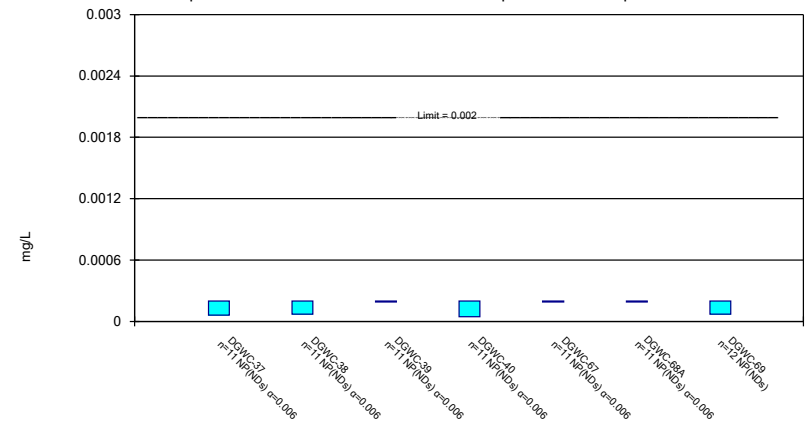
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lithium Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

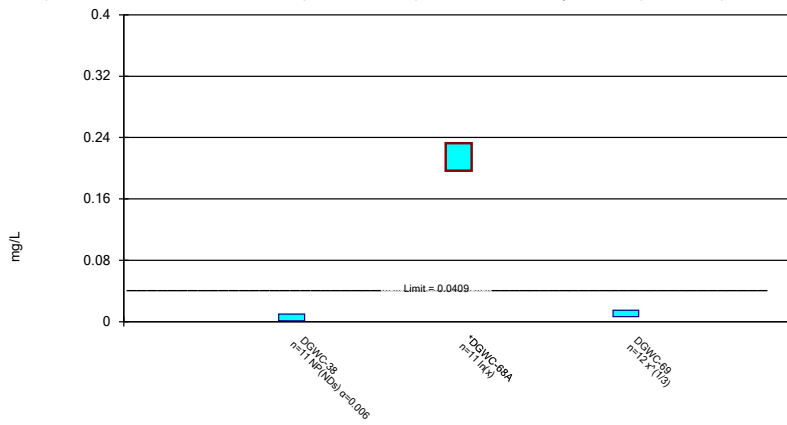
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Mercury Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Parametric and Non-Parametric (NP) Confidence Interval

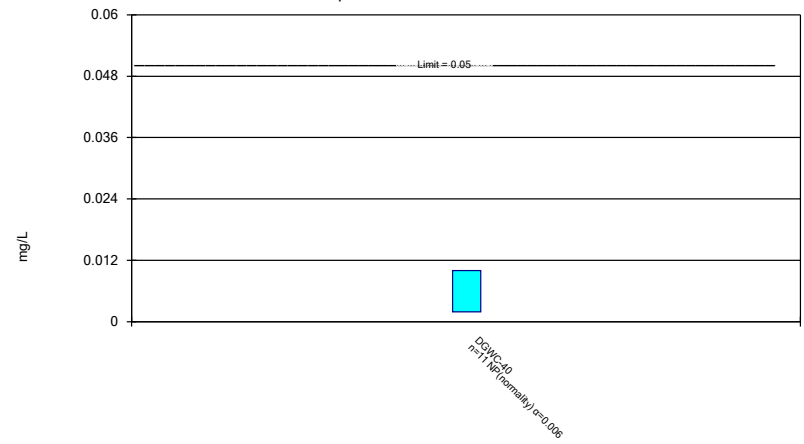
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

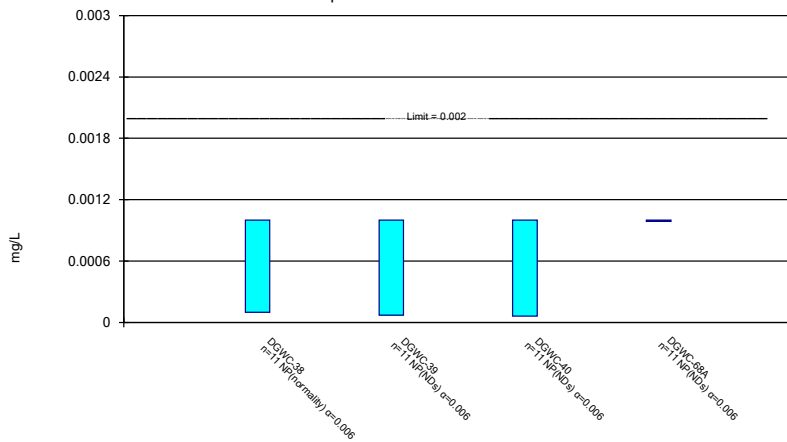
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 5/29/2020 10:46 AM View: AP - 1
 Plant McDonough Client: Southern Company Data: McDonough AP



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