Prepared for

#### **Gulf Power Company**

One Energy Place Pensacola, Florida 32520

# 2018 ANNUAL GROUNDWATER MONITORING REPORT GULF POWER COMPANY, PLANT SMITH ASH POND

Prepared by



engineers | scientists | innovators

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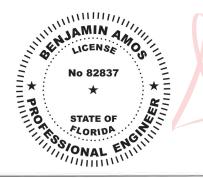
Project Number TXR0945

January 31, 2019



#### **CERTIFICATION STATEMENT**

This 2018 Annual Groundwater Monitoring Report, Gulf Power Company – Plant Smith – Ash Pond has been prepared in accordance with the requirements of the United States Environmental Protection Agency coal combustion residuals rule (40 Code of Federal Regulations [CFR] Part 257, Subpart D) under the supervision of a State of Florida licensed Professional Engineer and Professional Geologist with Geosyntec Consultants, Inc.



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#### **EXECUTIVE SUMMARY**

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residuals (CCR) rule (40 Code of Federal Regulations [CFR] Part 257, Subpart D) (CCR Rule), this 2018 Annual Groundwater Monitoring Report documents the CCR-groundwater monitoring activities completed in 2018 at Gulf Power Company's (Gulf Power's) Plant Lansing Smith (Site) Ash Pond. The 165-acre Ash Pond ceased receipt of CCR waste in March 2015 and Gulf Power is preparing to close the CCR unit in accordance with a State-approved closure plan.

Gulf Power previously installed a CCR-groundwater monitoring system around the Ash Pond to monitor groundwater within the uppermost aquifer in the vicinity of this CCR unit. Monitoring wells in the CCR-groundwater monitoring network are listed below:

- background wells: MW-02, MW-03, and MW-12;
- downgradient wells: MW-06, MW-07, MW-08, MW-09, MW-10, MW-11, MW-13, and MW-14; and
- piezometers: MW-01, MW-04, and MW-05.

As reported previously (Southern Company, 2018), statistical evaluation of CCR-groundwater monitoring data collected through October 2017 identified statistically significant increases (SSIs) of certain Appendix III groundwater monitoring constituents above background. In accordance with the CCR Rule, Gulf Power initiated an assessment monitoring program for the Ash Pond in March 2018. During the assessment monitoring scan event, samples from monitoring wells in the certified CCR-groundwater monitoring network were collected and analyzed for Appendix III and Appendix IV constituents. The first semi-annual assessment monitoring event was conducted in June 2018 and the second semi-annual assessment monitoring event was conducted in November 2018. Samples collected during the semi-annual assessment monitoring events were analyzed for all Appendix III constituents and those Appendix IV constituents detected in the March 2018 assessment monitoring scan event.

Analytical data from the first semi-annual assessment monitoring event were analyzed in accordance with the *Statistical Analysis Plan* (GSC, 2017) and requirements of the CCR Rule. Statistical analysis of the CCR-groundwater monitoring data identified statistically significant levels (SSLs) of Appendix IV constituents above applicable groundwater protection standards (GWPSs). The following SSLs were identified at the Ash Pond:

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- radium 226 and 228 combined (total radium) in MW-06, MW-07, MW-08, MW-09, MW-10, MW-11, MW-13 and MW-14;
- arsenic in MW-11; and
- lithium in MW-13.

In accordance with the CCR Rule, Gulf Power conducted an alternate source demonstration (ASD) which documents that the total radium SSLs are from a source other than the Ash Pond. In addition, Gulf Power initiated an assessment of corrective measures for the Ash Pond in January 2019 for arsenic and lithium.

The Ash Pond will remain in assessment monitoring. The 2019 assessment monitoring scan event is planned for March 2019 and semi-annual assessment monitoring events are planned for May and November 2019.



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#### 1.0 INTRODUCTION

On behalf of Gulf Power Company (Gulf Power), Geosyntec Consultants, Inc. (Geosyntec) has prepared this 2018 Annual Groundwater Monitoring Report for Gulf Power's Plant Lansing Smith (Site) coal combustion residuals (CCR) unit, the Ash Pond.

The Site is located at 4300 Highway 2300, Bay County, Florida, and is situated on approximately 1,560 acres. A Site location map is provided in **Figure 1**. Site topography is relatively flat. The Site is bordered by undeveloped land to the north and east, Alligator Bayou to the west, and North Bay to the south. The Ash Pond is located on the southern portion of the Site near North Bay. Semi-annual monitoring and reporting for the Ash Pond is being performed in accordance with the requirements of the United States Environmental Protection Agency (USEPA) CCR Rule (40 Code of Federal Regulations [CFR] Part 257, Subpart D).

In compliance with the CCR Rule, a CCR-groundwater detection monitoring program was implemented at the Site. The 2017 Annual Groundwater Monitoring and Corrective Action Report (Southern Company [SC], 2018) summarized the results of detection monitoring activities conducted through 2017. Statistical evaluation of CCR-groundwater monitoring data collected through October 2017 identified statistically significant increase (SSIs) of certain Appendix III groundwater monitoring constituents above background (SC, 2018). In accordance with the CCR Rule, Gulf Power initiated an assessment monitoring program for the Ash Pond in March 2018. The assessment monitoring scan event was conducted in March 2018, followed by semi-annual assessment monitoring events in June and November 2018.

The purpose of this report is to present a summary of CCR-groundwater monitoring activities conducted in 2018, associated analytical laboratory data, and available statistical analysis results. This report was prepared to meet the annual reporting requirements of the CCR Rule.

#### 1.1 Regional Geology & Hydrogeologic Setting

According to Pratt (1996), the principal aquifers beneath Bay County include the surficial aquifer system, the intermediate aquifer system, and the Floridan Aquifer System. The surficial aquifer system is the shallowest and is an unconfined system formed by recent terrace sands, the Citronelle Formation, and the upper portions of the

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Intracoastal Formation in hydraulic connection with these sediments. The general direction of flow is toward the south-southwest.

The intermediate aquifer system in Bay County is semi-confined and consists of the low permeability sediments of the Jackson Bluff and the Intracoastal Formations. Permeable portions of the Intracoastal Formation provide sufficient quantities of water for potable use. Overall, the intermediate aquifer system acts as a confining unit for the underlying Floridan Aquifer System.

CCR unit monitoring wells are screened in the uppermost, water-bearing zone in the undifferentiated quaternary alluvium of the surficial aquifer system. This surficial aquifer system at the Site is considered the uppermost aquifer for groundwater monitoring purposes. Site-specific lithology in the uppermost aquifer consists primarily of sand, silt, and clay mixtures. Groundwater in the surficial aquifer system at the Site is encountered in a laterally-extensive water-bearing unit of predominantly fine sand from approximately 5 to -20 feet (ft) elevation relative to the North American Vertical Datum of 1988 (NAVD88). CCR monitoring wells and piezometers were screened in the uppermost aquifer between approximately 2 and -21 ft NAVD88.

#### 1.2 Ash Pond CCR Unit and Groundwater Monitoring System Descriptions

The Ash Pond occupies approximately 165 acres. Fly ash, bottom ash, and other low-volume waste were sluiced to the Ash Pond until March 2015. The Ash Pond has ceased receipt of CCR waste but continues to receive non-CCR wastewater. Gulf Power is preparing to close the Ash Pond in accordance with a State-approved closure plan.

Pursuant to the CCR Rule, Gulf Power installed a CCR-groundwater monitoring system for the Ash Pond to monitor groundwater within the uppermost aquifer at the Site (SC, 2018). Upgradient (background) monitoring wells were installed to establish Site-wide background water quality. The downgradient monitoring well network was installed at the waste boundary of the Ash Pond. Monitoring wells in the CCR-groundwater monitoring network are as follows:

- background wells: MW-02, MW-03, and MW-12;
- downgradient wells: MW-06, MW-07, MW-08, MW-09, MW-10, MW-11, MW-13, and MW-14; and
- piezometers: MW-01, MW-04, and MW-05.

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Monitoring wells and piezometer details, including installation date, coordinates, elevations, screen interval, and designation, are summarized in **Table 1**. **Figure 2** depicts the CCR-groundwater monitoring network for the Ash Pond.

#### 2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with the CCR Rule, the following section describes CCR-groundwater monitoring-related activities performed during 2018 for the Ash Pond. Samples were collected from monitoring wells in the CCR-groundwater monitoring system shown on **Figure 2**. A summary of CCR-groundwater sampling events completed in 2018, including one assessment monitoring scan event and two semi-annual assessment monitoring events, is provided in **Table 2**. Analytical data associated with the assessment monitoring scan and semi-annual events are summarized in **Table 3**; laboratory analytical reports are included in **Appendix A**.

#### 2.1 Monitoring Well Installation and Maintenance

In accordance with the CCR Rule, CCR-monitoring wells and piezometers sampled and/or gauged in 2018 were installed in 2015 (SC, 2018).

#### 2.2 Assessment Monitoring Scan

An assessment monitoring scan event for the Ash Pond was conducted in March 2018. Samples were collected from each monitoring well in the CCR-groundwater monitoring network and analyzed for Appendix III and Appendix IV constituents. The following Appendix IV constituents were detected during the 2018 scan event: arsenic, barium, beryllium, chromium, cobalt, radium 226 and 228 combined (total radium), fluoride, lithium, molybdenum, and selenium.

#### 2.3 Assessment Monitoring Events

The first semi-annual assessment monitoring event for the Ash Pond was performed in June 2018. The second semi-annual assessment monitoring event for the Ash Pond was conducted in November 2018. Groundwater samples were collected from each CCR-groundwater monitoring well and analyzed for all Appendix III constituents and those Appendix IV constituents detected in the March 2018 scan event.

#### 3.0 SAMPLE METHODOLOGY & ANALYSES

The following section describes the methods used to conduct CCR-groundwater monitoring at the Ash Pond.

#### 3.1 Groundwater Elevation Measurement

Prior to each 2018 CCR-sampling event, groundwater elevations were recorded from the CCR-monitoring well and piezometer network at the Site. Groundwater elevations recorded during the assessment monitoring scan and the two semi-annual assessment monitoring events are summarized in **Table 4**. **Figure 3**, **Figure 4**, and **Figure 5** present Site-wide potentiometric surface elevation contour maps developed using groundwater elevation data collected in March, June, and November 2018, respectively. As shown on the potentiometric figures, regional groundwater generally flows south across the Site and in the vicinity of the Ash Pond, radially away from the Ash Pond. The groundwater flow patterns observed during the 2018 assessment monitoring events are generally consistent with observations from 2017 (SC, 2018).

#### 3.2 **Groundwater Sampling**

Groundwater samples were collected in general accordance with Florida Department of Environmental Protection (FDEP) Standard Operation Procedure FS2200 (FDEP, 2017) and the CCR Rule. A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters (pH, conductivity, and dissolved oxygen) during well purging to evaluate stabilization prior to sampling. Turbidity was measured using a Hach 2100Q (or similar) portable turbidimeter. Following sample collection, samples were placed in ice-packed coolers and submitted to TestAmerica Laboratories, Inc. (TAL), in Pensacola, Florida following chain-of-custody protocol. Field sampling data sheets are provided in **Appendix A**.

#### 3.3 <u>Laboratory Analyses</u>

Groundwater samples collected for the assessment monitoring scan and the semi-annual assessment monitoring events at the Ash Pond included both Appendix III and Appendix IV constituents. Applicable analytical methods are provided in laboratory reports in **Appendix A**.

Laboratory analyses were performed by TAL. TAL is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintain a NELAP

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certification for all parameters analyzed for this project. In addition, TAL is certified to perform analyses by the State of Florida. Groundwater data and chain-of-custody records for the monitoring events are presented in **Appendix A**.

#### 3.4 Quality Assurance & Quality Control Summary

During each sampling event for the Ash Pond, quality assurance/quality control (QA/QC) samples including equipment blanks, field blanks, and duplicate samples were collected. Data from these QA/QC samples were evaluated during data validation.

Ash Pond groundwater quality data in this report were independently validated in accordance with USEPA guidance (USEPA, 2011) 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), post digestions spikes, laboratory and field duplicate RPDs, field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data using USEPA procedures as guidance (USEPA, 2017). Data validation reports are included in **Appendix A** for the assessment monitoring scan and first semi-annual assessment monitoring events. Data validation of data collected during the second 2018 semi-annual assessment monitoring event is ongoing and will be reported in 2020.

#### 4.0 STATISTICAL ANALYSIS

The following section describes the statistical methods and analyses performed to assess CCR-groundwater monitoring data collected in 2018 from the Ash Pond.

#### 4.1 Statistical Methods

Pursuant to the CCR Rule, statistical analysis of Appendix III and detected Appendix IV constituents was performed on CCR-groundwater monitoring data collected in 2018 from the CCR-groundwater monitoring network in accordance with the Site *Statistical Analysis Plan* (SAP) (Groundwater Stats Consulting [GSC], 2017). The SAP describes site-specific statistical methods that are used to evaluate CCR-groundwater data at the Ash Pond.

Statistical analysis of Ash Pond CCR-groundwater data was performed using the Sanitas<sup>TM</sup> v.9.6.05 groundwater statistical software. Sanitas<sup>TM</sup> is a decision support software package that incorporates statistical tests required of Subtitle C and D facilities by USEPA regulations and incorporates methods recommended in the *Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance* (USEPA, 2009).

#### 4.1.1 Assessment Monitoring Statistical Method

Groundwater protection standards (GWPSs) for Appendix IV constituents at the Ash Pond were established in accordance with the CCR Rule and the July 30, 2018 CCR Rule amendment (USEPA, 2018) and are presented in **Table 5**. Additional details are presented in the statistical analysis packages provided in **Appendix B**.

To identify statistically significant levels (SSLs) of Appendix IV constituents, confidence intervals were constructed for each detected Appendix IV constituent in each downgradient well and compared to the GWPSs. An SSL is identified only when the entire confidence interval is above the applicable GWPS. Other statistical tests including time-series plots and trend analyses were performed in accordance with the SAP.

#### 4.1.2 Appendix III Constituent Statistical Methods

Statistical analysis of Appendix III constituents was performed to evaluate if concentrations had returned to background values. Statistical tests used to evaluate the groundwater monitoring data at the Ash Pond consist of interwell prediction limits combined with a 1-of-2 resample strategy for the following Appendix III constituents:

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boron, calcium, chloride, fluoride, sulfate and TDS. Interwell prediction limits pool upgradient well data to establish a background prediction limit for an individual constituent. Intrawell prediction limits combined with a 1-of-2 resample strategy were used to evaluate pH at each well. Intrawell prediction limits use historical data from within a given well to compare compliance data within the same well, and the most recent sample from each downgradient well is compared to its respective prediction limit. The 1-of-2 resample strategy allows for collection of a verification sample when a statistically significant increase is identified. If the most recent sample exceeded its respective background prediction limit and a verification sample is not collected, a statistically significant increase (SSI) is identified.

#### 4.2 Statistical Analyses Results

Analytical data from the first semi-annual assessment monitoring event in June 2018 for the Ash Pond was analyzed in accordance with the SAP. Appendix III statistical analysis was performed to evaluate if constituents in the Ash Pond groundwater have returned to background levels. Appendix IV constituents were evaluated to assess if Ash Pond groundwater concentrations statistically exceeded the established GWPSs.

#### 4.2.1 Assessment Monitoring Statistical Results

A summary of the Sanitas<sup>TM</sup> outputs for the June 2018 assessment event is provided in **Appendix B**. Based on the statistical analysis of Appendix IV constituents the following SSLs were identified at the Ash Pond:

- total radium: MW-06, MW-07, MW-08, MW-09, MW-10, MW-11, MW-13 and MW-14;
- arsenic: MW-11; and
- lithium: MW-13.

In accordance with the CCR Rule, a notification identifying the SSLs for total radium, arsenic, and lithium was prepared for the Ash Pond and placed in the facility's Operating Record. Statistical analysis of data collected during the second semi-annual assessment monitoring event is ongoing and will be reported in 2020.



#### 4.2.2 Appendix III Constituent Statistical Results

Based on review of the Appendix III statistical analysis, concentrations of the previously noted constituents have not returned to background levels and assessment monitoring should continue at the Ash Pond. A summary of Sanitas<sup>TM</sup> output of Appendix III statistical analysis is presented in **Appendix B**.



#### 5.0 ALTERNATE SOURCE DEMONSTRATION

In accordance with the CCR Rule, Gulf Power prepared an alternate source demonstration (ASD) for total radium. The complete ASD report is provided in **Appendix C**. The key conclusions of the ASD, which were based on historical findings accepted by FDEP (FDEP, 1997a & b), are briefly summarized below:

- parent radionuclides, such as uranium and thorium, that decay into total radium (i.e., radium 226 and 228 combined) are naturally-occurring constituents in native sediments at the Site;
- interactions between saline groundwater and native sediments enriched in uranium and thorium (parent radionuclides to total radium) mobilizes total radium into groundwater; and
- results of extraction tests conducted on ash from the CCR unit demonstrated that the Ash Pond was not the source of the total radium SSLs in groundwater at the Site's CCR monitoring wells.



#### 6.0 CONCLUSIONS & FUTURE ACTIONS

In accordance with the CCR Rule, Gulf Power implemented assessment monitoring in March 2018 for the Ash Pond. SSLs of select Appendix IV constituents (i.e., total radium, arsenic, lithium) relative to GWPSs were identified at the Ash Pond during the first semi-annual assessment monitoring event in 2018. Statistical analysis of Appendix III constituents indicated that concentrations downgradient of the Ash Pond had not returned to background levels. In accordance with the CCR Rule, Gulf Power prepared an ASD for the total radium SSLs which documents that another source caused the SSLs. In addition, Gulf Power initiated an assessment of corrective measures in January 2019 for arsenic and lithium SSLs in groundwater at the Ash Pond.

The Ash Pond will remain in assessment monitoring in 2019. The 2019 CCR-groundwater assessment monitoring scan event is planned for March 2019 and semi-annual CCR-groundwater assessment monitoring events are planned for May and November 2019.

#### 7.0 REFERENCES

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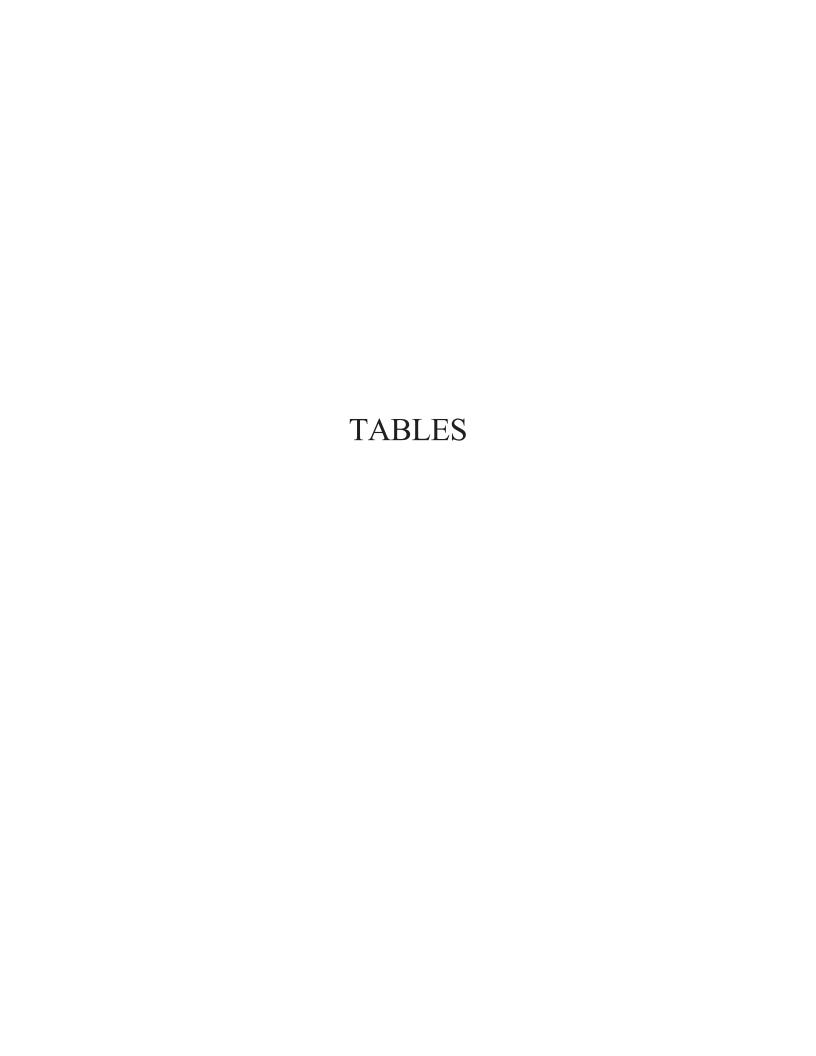


TABLE 1: MONITORING WELL NETWORK SUMMARY Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

11/11/2015       464368.78       1589789.76         11/10/2015       464419.66       1592286.78         11/10/2015       464322.49       1594277.21         11/7/2015       464027.17       1591388.6         11/4/2015       463987.97       1592784.03         11/17/2015       463858.8       1591389.13         11/17/2015       463856.65       1590479.94         11/17/2015       461649.15       1590479.94         11/17/2015       460663.62       1590695.95         11/21/2015       462157.18       1592298.86         11/11/2015       462676.94       1590589.33         11/11/2015       462676.94       1590589.33	Northing Easting Gr	Ground Top of Casing Elevation Elevation	Top of Casing Top of Screen Elevation Elevation	Bottom of Screen Elevation	Designation
11/10/2015       464419.66       1592286.78         11/10/2015       464322.49       1594277.21         11/1/2015       464027.17       1591388.6         11/4/2015       463987.97       1592784.03         11/1/2015       463858.8       1591389.13         11/3/2015       463856.65       1592774.97         11/17/2015       461649.15       1590479.94         11/17/2015       461649.15       1590695.95         11/20/2015       462157.18       1592298.86         11/11/2015       462157.18       1593298.86         11/11/2015       462676.94       1590589.33         11/11/2015       462676.94       1590589.33	1589789.76	10.75	1.15	-8.85	Piezometer
11/10/2015       464322.49       1594277.21         11/7/2015       464027.17       1591388.6         11/4/2015       463987.97       1592784.03         11/17/2015       463858.8       1591389.13         11/17/2015       463856.65       1590479.94         11/17/2015       460663.62       1590695.95         11/20/2015       462157.18       1592098.52         11/11/2015       462157.18       1593298.86         11/11/2015       462676.94       1590589.33	1592286.78	13.29	-2.71	-12.71	Background
11/7/2015       464027.17       1591388.6         11/4/2015       463987.97       1592784.03         11/17/2015       463858.8       1591389.13         11/3/2015       463856.65       1592774.97         11/17/2015       461649.15       1590479.94         11/17/2015       460663.62       1590695.95         11/20/2015       462157.18       1592098.52         11/11/2015       462157.18       1593298.86         11/11/2015       462676.94       1590589.33	1594277.21	14.06	-8.94	-18.94	Background
11/4/2015       463987.97       1592784.03         11/17/2015       463858.8       1591389.13         11/17/2015       461649.15       1590479.94         11/17/2015       461649.15       1590695.95         11/20/2015       461234.34       1592098.52         11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1591388.6	2 15.05	2.25	-7.75	Piezometer
11/17/2015       463858.8       1591389.13         11/3/2015       463856.65       1592774.97         11/17/2015       461649.15       1590479.94         11/17/2015       460663.62       1590695.95         11/20/2015       461234.34       1592098.52         11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1592784.03	14.13	-1.97	-11.97	Piezometer
11/3/2015       463856.65       1592774.97         11/17/2015       461649.15       1590479.94         11/17/2015       460663.62       1590695.95         11/20/2015       461234.34       1592098.52         11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1591389.13	1.18 23.82	-5.38	-15.38	Downgradient
11/17/2015       461649.15       1590479.94         11/17/2015       460663.62       1590695.95         11/20/2015       461234.34       1592098.52         11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1592774.97	72 21.42	-7.88	-17.88	Downgradient
11/17/2015       460663.62       1590695.95         11/20/2015       461234.34       1592098.52         11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1590479.94	.33 24.31	-8.39	-18.39	Downgradient
11/20/2015       461234.34       1592098.52         11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1590695.95	15.37	-6.73	-16.73	Downgradient
11/21/2015       462157.18       1593298.86         11/11/2015       462362       1589322.96         11/11/2015       462676.94       1590589.33	1592098.52	13.93	79.8-	-18.67	Downgradient
11/11/2015     462362     1589322.96       11/11/2015     462676.94     1590589.33	1593298.86	16.51	-6.49	-16.49	Downgradient
11/11/2015 462676.94 1590589.33	1589322.96	21 11.14	-10.56	-20.56	Background
Th CE10031 00 C00036	1590589.33	.53 26.54	-6.36	-16.36	Downgradient
$\exists$	460892.89 1590173.47 22	111 24.95	-5.69	-15.69	Downgradient

- 1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983.
- 2. Elevations are in feet relative to the North American Vertical Datum on 1988.

TABLE 2: SUMMARY OF 2018 GROUNDWATER SAMPLING EVENTS Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

Well Neme	2018 Assessment	2018 Assessment	2018 Assessment
Well Maille	Monitoring Scan	Monitoring Event 1	Monitoring Event 2
MW-02	3/21/2018	6/6/2018	11/19/2018
MW-03	3/20/2018	6/6/2018	11/19/2018
90-MM	3/21/2018	6/8/2018	11/19/2018
MW-07	3/21/2018	6/8/2018	11/19/2018
MW-08	3/22/2018	6/7/2018	11/19/2018
MW-09	3/23/2018	6/7/2018	11/20/2018
MW-10	3/22/2018	6/7/2018	11/20/2018
MW-11	3/21/2018	6/7/2018	11/20/2018
MW-12	3/20/2018	6/6/2018	11/19/2018
MW-13	3/22/2018	6/7/2018	11/19/2018
MW-14	3/22/2018	6/7/2018	11/19/2018

1. Assessment indicates a sampling event conducted during assessment monitoring, and includes groundwater samples analyzed for Appendix III and Appendix IV parameters.

TABLE 3: SUMMARY OF 2018 GROUNDWATER LABORATORY ANALYTICAL DATA Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

Thallium (mo/L)	ì		$0.0000085  \mathrm{U}$	$0.0000085  \mathrm{U}$	0.0000085 U	0.0000085 U	0.0000085 U	0.0000085 U	0.0000085 U	0.0000085 U	0.0000085 U	0.0000085 U	$0.0000085  \mathrm{U}$		1	-		-	-	-	-	-	-	-	1		1	;	1	1	1	-	-	-	1	-	1
TDS (mo/L)			150	12	510	5400	3400	8100	1700	0089	3600	11000	4800		160	46	460	0019	3200	0009	4000	5800	3400	8200	4200		88	22	490	5500	6500	7300	4400	0009	4100	8600	4900
Sulfate (mo/L)	ì		1.4 U	1.4 U	1.81	530	720	006	630	810	240	026	290		4.8 I	1.4 U	2.3 I	999	750	910	640	830	240	840	590		4.4 I	1.4 U	2.2 I	520	910	096	580	830	250	810	720
Selenium (mo/L)	( 8 )		0.00024 U	0.00069 I	0.00024 U	0.000037 I	0.00062 I	0.0003 I	0.00024 U	0.00024 U	0.00066 I	0.00024 U	0.00024 U		0.00024 U	0.0003 I	0.00024 U	0.00025 I	0.000281	0.00032 I	$0.00024  \mathrm{U}$	0.00024 U	0.0006 I	$0.00031  \mathrm{I}$	0.00041 I		0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U				
Hq (SU)	( )		89.9	4.92	6.05	5.3	6.26	4.61	6.4	5.31	6.28	88.9	28.9		6.47	4.96	6.04	5.25	6.31	4.73	6.52	5.35	6:39	98.9	88.9		60.9	4.95	6.11	5.26	6.15	3.26	6.52	5.18	6.35	66.9	98.9
Molybdenum	î		0.00085 U	0.00085 U	0.000085 U	0.000085 U	0.0058 I	0.00085 U	0.0014 I	0.0018 I	0.017	0.033	0.017		0.000085 U	0.000085 U	0.000085 U	0.000085 U	0.0067 I	0.00085 U	$0.0036  \mathrm{I}$	0.001 I	0.013 I	0.042	0.016		0.002 U	0.002 U	0.002 U	0.0028 I	0.0069 I	0.02	0.013 I				
Mercury Mercury	( )		0.00007 U	0.00007 U	O.00007 U	O.00007 U	U 200000.0	O.00007 U	0.00007 U	0.00007 U	O.00007 U	O.00007 U	0.00007 U		:	:	:	:	:	-	-	-	:	:	;		:	;	:	1	;	-	:	:	:	:	1
Lithium (mo/L)	ì		0.012	0.016	0.016	0.019	0.0023 I	0.011	0.0056	0.0065	0.012	0.25	0.0013 I		0.0051	0.011	0.011	0.014	0.0018 I	0.0076	0.00261	0.0054	0.00381	0.2	0.0011 U		0.0028 I	0.011	0.011	0.024	0.0047 I	0.015	0.0013 I	0.0048 I	0.011	0.26	0.0011 U
Lead I	4		0.00035 U	0.000035 U	0.00035 U	0.00035 U	0.00035 U	0.00035 U	0.00035 U	0.000035 U	0.000035 U	0.00035 U	0.000035 U			:	:		-	-		-	-	:	-		-	;	-	:	-		-	-	:	:	-
Fluoride (mo/L)	ì		$\dashv$	0.032 U 0	0.12 0	0.05 I 0	0.032 U 0	0.032 U 0	0.032 U 0	0.032 U 0	0.05 I 0	0.04 I 0	0.07 I		0.19	0.04 I	0.12	0.05 I	0.032 U	0.032 U	0.05 I	0.032 U	0.032 U	0.05 I	0.08 I		0.12	0.04 I	0.13	0.04 I	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.04 I	0.08 I
코 _	pCi/L)		1.32	1.82	1.81	24.5	19.3	32.4	12.8	19.7	26.5	14	4.78		1.32	1.19	2.32	26.9	21.6	37.5	13.9	18.5	23.6	14.9	4.88		0.763	2.18	2.37		53.5	33.6	13.2	19.8	28.6	11.6	5.59
Cobalt Como(L)	( 8 )	g Scan Even	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00046 I	0.0004 U	0.0004 U	ing Event 1	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	ing Event 2	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U				
Chromium (mg/L)		Assessment Monitoring Scan Event		0.0024 I	0.0011 U	0.0011 U	0.0013 I	0.0011 U	0.0011 U	0.0011 U	890.0	0.0024 I	0.0017 I	Assessment Monitoring Event	0.0029	0.0026	0.0011 U	0.0011 U	0.0012 I	0.0011 U	0.0011 U	J	0.0048	0.0011 U	0.0011 U	Assessment Monitoring Event	0.0019 I	0.0024 I	_		0.0016 I	0.0011 U	0.0011 U	0.0011 U	0.0036	0.0011 U	0.0011 U
Chloride C	, a	Assessmen	9.3 V	11 V	190	2900	1300	3200	2300	2700	1900	4100	2000	Assessm	13	11	190	2900	1400	3500	2200	2700	2000	4300	2200	Assessm	13	13			3300	3600	2200	2800	2400	4500	2400
Calcium (mo/L)	( 10		45	1.9	34	290	200	540	290	510	66	740	250		32	1.8	30	290	200	530	280	500	100	029	260		20	1.8	38	240	380	480	220	440	120	550	290
Cadmium (mo/L)	( 8		0.00034 U	$0.00034\mathrm{U}$	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U										-	-	1		:	:	-	:	1		-	-	:	-	
Boron (mø/L)	1		0.021 U	0.021 U	0.072	9.8	3 (	15 (	9.4	11	3.7	15 (	12		0.027 I	0.021 U	0.077	8.4	3	15	9.3	11	3.7	15	12		0.045 I	0.021 U	0.071	9.5	3.5	17	11	12	4.1	16	15
Beryllium (mø/L)	( )		0.00034 U	0.00034 U	0.00034 U	0.0014 I	0.00034 U	0.0014 I	0.00034 U	0.00039 I	0.0025	0.00034 U	0.00034 U		0.00034 U	0.00034 U	0.00034 U	0.0014 I	0.00034 U	0.00141	0.00034 U	0.00044 I	0.00092 I	0.00034 U	0.00034 U		0.00034 U	.	0.00034 U	0.00161	0.00034 U	0.00161	0.00034 U	0.0004 I	0.0011 I	0.00034 U	0.00034 U
Barium I	-		0.021	0.018	0.013	90.0	0.061	0.064	0.093	0.1	0.081	0.098	0.051		0.017	0.018	0.012	0.058	90.0	0.062	0.089	0.1	0.078	0.089	0.051		0.013	0.019	0.014		0.14	0.058	0.077	0.095	0.11	0.079	0.057
Arsenic (mg/L)	٦.		0.00046 U	0.00046 U	0.00046 U	0.00048 I	0.0014	0.00097 I	0.0022	0.0034	0.016	0.0014	0.0041		0.00046 U	0.00046 U	0.00046 U	1 6000°0	0.0022	0.002	0.003	0.0027	0.018	0.0016	0.0051		0.00046 U	0.00046 U	0.00046 U	0.00075 I	0.0018	0.0015	0.0037	0.0033	0.015	0.0016	0.0058
Antimony (mo/L)	( 8		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		-	-	-		:	-		-	;	:	;		-	1	-	:	;		:	;	;	:	
Sample Date			3/21/2018	3/20/2018	3/20/2018	3/21/2018	3/21/2018	3/22/2018	3/23/2018	3/22/2018	3/21/2018	3/22/2018	3/22/2018		6/6/2018	6/6/2018	6/6/2018	6/8/2018	6/8/2018	6/7/2018	6/7/2018	6/7/2018	6/7/2018	6/7/2018	6/7/2018		11/19/2018	11/19/2018	11/19/2018	11/19/2018	11/19/2018	11/19/2018	11/20/2018	11/20/2018	11/20/2018	11/19/2018	11/19/2018
Well			Background	Background	Background	Downgradient		Background	Background	Background	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient		Background	Background	Background		Downgradient	Downgradient	Downgradient 11/20/2018	Downgradient	Downgradient	Downgradient	Downgradient							
Monitoring	1		MW-02	MW-03	MW-12	MW-06	MW-07	MW-08	I 60-MM	MW-10 I	MW-11 I	MW-13 I	MW-14		MW-02	MW-03	MW-12	MW-06	MW-07	MW-08	I 60-MM	MW-10		MW-13	MW-14		MW-02	$\dashv$	MW-12		MW-07	MW-08	MW-09	MW-10	MW-11	MW-13	MW-14

1. mg/L indicates milligrams per liter, pCi/L indicates picocuries per liter, SU indicates standard units.

2. TDS indicates Total Dissolved Solids.

3. - indicates that the constituent was not detected in the assessment monitoring scan event and therefore not sampled in the assessment monitoring events.

4. "U" indicates analyzed but not detected. "I" indicates that the reported value is between laboratory method detection limit and laboratory practical quantitation limit.
5. "V" indicates that the analyte was detected at or above the method detection limit in both the sample and associated method blank and the value of 10 times the blank was equal to or greater than the analyte was detected at or above the method detection limit in both the sample and associated method blank and associated method session and the first assessment monitoring event. Data validation is ongoing for the second assessment monitoring event. Data validation is ongoing for the second assessment monitoring event. Data validation was performed on assessment monitoring scan event and the first assessment monitoring event. Data validation is ongoing for the second assessment monitoring event.

TABLE 4: SUMMARY OF 2018 GROUNDWATER ELEVATIONS Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

Monitoring Well	Northing	Easting	Top of Casing Elevation	Date	Depth to Water	Groundwater Elevation
MW-01	464368.78	1589789.76	10.75	3/20/2018	5.45	5.30
MW-02	464419.66	1592286.78	13.29	3/20/2018	5.20	8.09
MW-03	464322.49	1594277.21	14.06	3/20/2018	6.70	7.36
MW-04	464027.17	1591388.6	15.05	3/20/2018	7.31	7.74
MW-05	463987.97	1592784.03	14.13	3/20/2018	6.29	7.84
MW-06	463858.8	1591389.13	23.82	3/20/2018	12.94	10.88
MW-07	463856.65	1592774.97	21.42	3/20/2018	11.79	9.63
MW-08	461649.15	1590479.94	24.31	3/20/2018	17.37	6.94
MW-09	460663.62	1590695.95	15.37	3/20/2018	11.21	4.16
MW-10	461234.34	1592098.52	13.93	3/20/2018	6.84	7.09
MW-11	462157.18	1593298.86	16.51	3/20/2018	10.39	6.12
MW-12	462362	1589322.96	11.14	3/20/2018	9.41	1.73
MW-13	462676.94	1590589.33	26.54	3/20/2018	14.74	11.80
MW-14	460892.89	1590173.47	24.95	3/20/2018	22.38	2.57

- 1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983.
- 2. Elevations are in feet relative to the North American Vertical Datum of 1988.
- 3. Depth to water measurements are in feet.

Last Modified: January 22, 2019

TABLE 4: SUMMARY OF 2018 GROUNDWATER ELEVATIONS Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

Monitoring Well	Northing	Easting	Top of Casing Elevation	Date	Depth to Water	Groundwater Elevation
MW-01	464368.78	1589789.76	10.75	6/6/2018	4.94	5.81
MW-02	464419.66	1592286.78	13.29	6/6/2018	4.01	9.28
MW-03	464322.49	1594277.21	14.06	6/6/2018	5.49	8.57
MW-04	464027.17	1591388.6	15.05	6/6/2018	6.46	8.59
MW-05	463987.97	1592784.03	14.13	6/6/2018	5.35	8.78
MW-06	463858.8	1591389.13	23.82	6/6/2018	13.04	10.78
MW-07	463856.65	1592774.97	21.42	6/6/2018	11.39	10.03
MW-08	461649.15	1590479.94	24.31	6/6/2018	16.86	7.45
MW-09	460663.62	1590695.95	15.37	6/6/2018	10.8	4.57
MW-10	461234.34	1592098.52	13.93	6/6/2018	6.83	7.10
MW-11	462157.18	1593298.86	16.51	6/6/2018	8.86	7.65
MW-12	462362	1589322.96	11.14	6/6/2018	9.83	1.31
MW-13	462676.94	1590589.33	26.54	6/6/2018	14.61	11.93
MW-14	460892.89	1590173.47	24.95	6/6/2018	22.08	2.87

- 1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983.
- 2. Elevations are in feet relative to the North American Vertical Datum of 1988.
- 3. Depth to water measurements are in feet.

Last Modified: January 22, 2019

TABLE 4: SUMMARY OF 2018 GROUNDWATER ELEVATIONS Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

Monitoring Well	Northing	Easting	Top of Casing Elevation	Date	Depth to Water	Groundwater Elevation
MW-01	464368.78	1589789.76	10.75	11/19/2018	4.85	5.90
MW-02	464419.66	1592286.78	13.29	11/19/2018	4.02	9.27
MW-03	464322.49	1594277.21	14.06	11/19/2018	5.72	8.34
MW-04	464027.17	1591388.6	15.05	11/19/2018	4.28	10.77
MW-05	463987.97	1592784.03	14.13	11/19/2018	4.01	10.12
MW-06	463858.8	1591389.13	23.82	11/19/2018	13.55	10.27
MW-07	463856.65	1592774.97	21.42	11/19/2018	11.75	9.67
MW-08	461649.15	1590479.94	24.31	11/19/2018	17.82	6.49
MW-09	460663.62	1590695.95	15.37	11/19/2018	10.40	4.97
MW-10	461234.34	1592098.52	13.93	11/19/2018	8.15	5.78
MW-11	462157.18	1593298.86	16.51	11/19/2018	9.59	6.92
MW-12	462362	1589322.96	11.14	11/19/2018	9.88	1.26
MW-13	462676.94	1590589.33	26.54	11/19/2018	15.65	10.89
MW-14	460892.89	1590173.47	24.95	11/19/2018	21.61	3.34

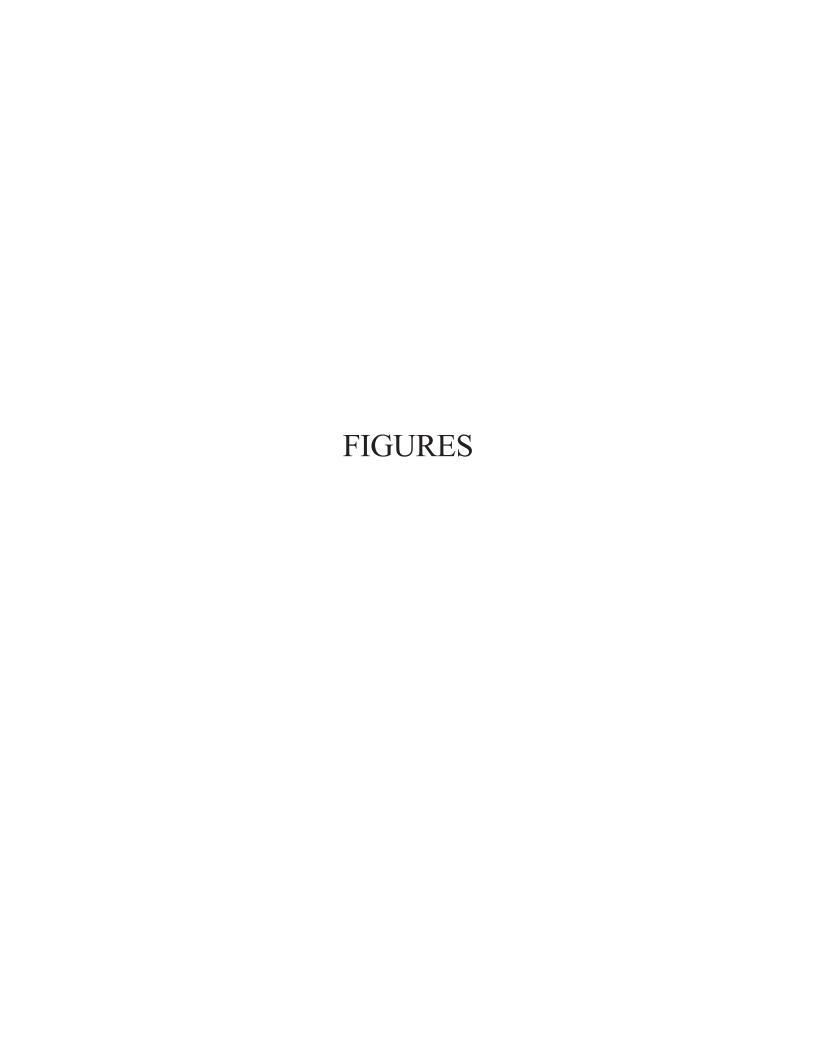
- 1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983.
- 2. Elevations are in feet relative to the North American Vertical Datum of 1988.
- 3. Depth to water measurements are in feet.

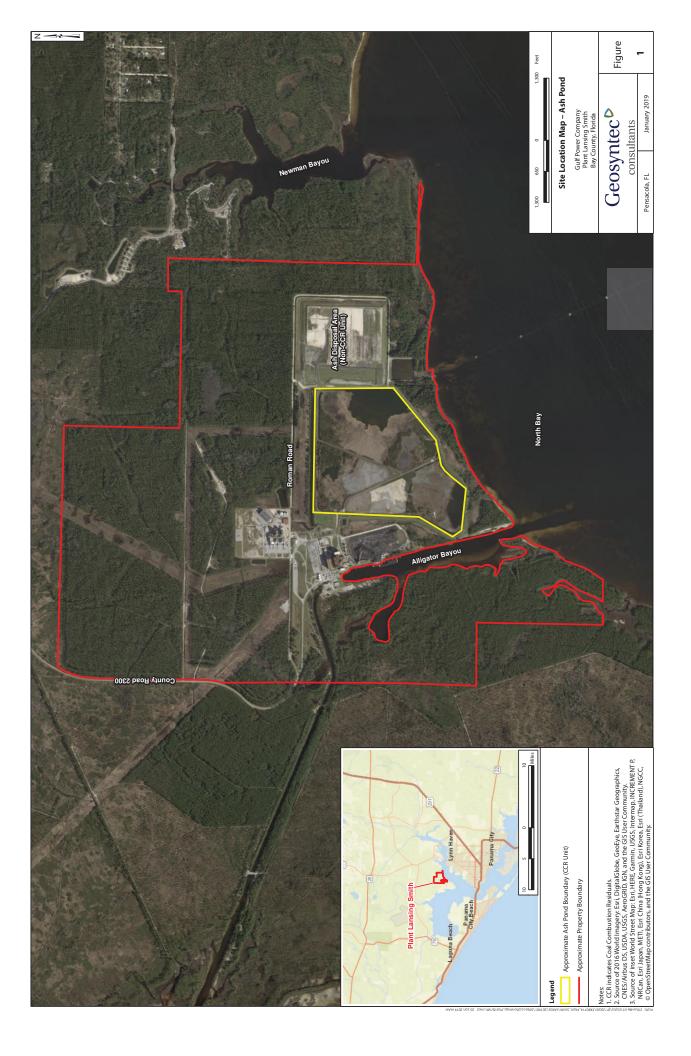
TABLE 5: SUMMARY OF BACKGROUND LIMITS AND GROUNDWATER PROTECTION STANDARDS

Plant Smith - Ash Pond, Gulf Power Company, Bay County, Florida

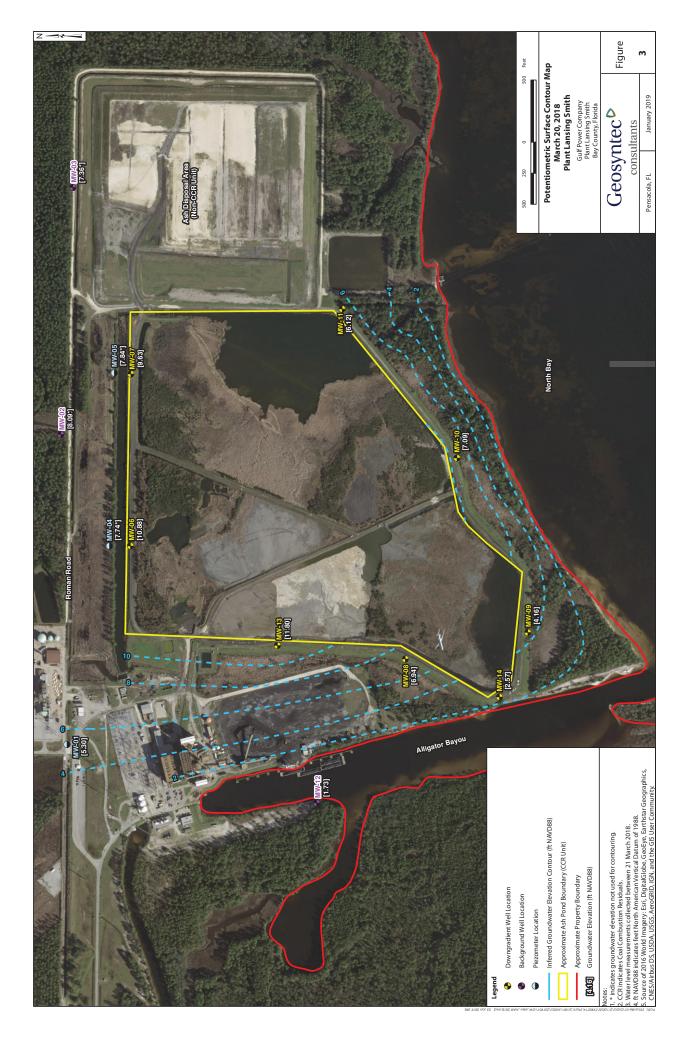
Analyte	Units <sup>1</sup>	USEPA MCL or RSL <sup>2</sup>	Statistically Derived Upper Tolerance Limit (UTL)	Groundwater Protection Standard (GWPS) <sup>4</sup>
Antimony	mg/L	0.006	0.003	0.006
Arsenic	mg/L	0.01	0.001	0.010
Barium	mg/L	2	0.031	2.000
Beryllium	mg/L	0.004	0.003	0.004
Cadmium	mg/L	0.005	0.003	0.005
Chromium	mg/L	0.1	0.012	0.100
Cobalt <sup>3</sup>	mg/L	0.006	0.003	0.006
Fluoride	mg/L	4	0.272	4
Lead <sup>3</sup>	mg/L	0.015	0.001	0.015
Lithium <sup>3</sup>	mg/L	0.04	0.018	0.040
Mercury	mg/L	0.002	0.0002	0.002
Molybdenum <sup>3</sup>	mg/L	0.1	0.015	0.100
Selenium	mg/L	0.05	0.001	0.050
Thallium	mg/L	0.002	0.001	0.002
Combined Radium-226/228	pCi/L	5	4.2	5

- 1. mg/L indicates milligrams per liter; pCi/L indicates picocuries per liter.
- 2. MCL: Maximum Contaminant Level; RSL: Regional Screening Levels.
- 3. Numerical limit established in CCR Rule Ammendment dated July 30, 2018.
- 4. GWPS selected as the higher of EPA MCL or RSL and Statistically Derived Upper Tolerance Limit.













## APPENDIX A

Laboratory Analytical and Field Sampling Reports Product Name: Low-Flow System

Date: 2018-03-2113:24:30

			ORP mV +/- 10 -162.49 -154.63 -148.03 -143.05 -138.70 6.60 4.99
PP PE .17 in 42 ft	35.0 ft	400 mL/min 0.2774638 L 300 sec 44 in 22 L	RDO mg/L +/- 0.2 0.16 0.16 0.16 0.15 -0.00
₫ ₫ ፫ ਂ 4	m	40,44,9	DTW ft 16.46 16.54 16.59 16.71
mation: el/Type e meter gth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 5 9467.86 3.11 9527.77 4.28 9635.16 2.86 9720.58 2.35 107.39 2.35 37.49
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Ra Stabilization Drawdov Total Volume Pumpec	SpCond µS +/- 5% 9467.86 9527.77 9635.16 9720.58 107.39 47.94 37.49
			pH +/- 0.2 5.42 5.38 5.34 5.30 -0.04 -0.03
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	.06 6 ft	Temp C +/- 0.2 25.32 25.27 25.28 25.46 25.46 0.01
Rick Hag RDH Env Smith C Smith PI 0° 0' 0"	417744 Hach 2	MW-06 2 in 40 ft 10 ft 12.96 ft	ation Summary Elapsed 2100.02 2700.02 3000.02 3300.02
nation: ne me	(e/Model	ion: r pth h er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 13:01:20 2400.02 Last 5 13:11:20 2700.02 Last 5 13:11:20 3000.02 Last 5 13:21:20 3300.02 Variance 0 Variance 1 Variance 2  Notes Sample time 1324. Sunny 62.
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1 Variance 2

**Grab Samples** 

Product Name: Low-Flow System

Date: 2018-03-2111:46:14

			ORP mV +/- 10 -250.98 -253.20 -255.86 -257.24 -257.82 -266 -1.38	
PP PE .17 in 42 ft	35.0 ft	400 mL/min 0.2774638 L 300 sec 6 in 16 L	RDO mg/L +/- 0.2 0.08 0.07 0.08 0.07 0.00	
	35	400 0.27 300 6 in 16 L	DTW ft 12.57 12.57 12.57 12.57	
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU +/- 5% +/- 5 5478.65 10.50 5456.13 9.01 5476.99 6.88 5490.44 6.19 5484.29 3.45 13.44	
		Pumping Ir Final Pump Total Syste Calculated Stabilizatic Total Volur	SpCond µS +/- 5% 5478.65 5456.13 5476.99 5490.44 5484.29 20.86 13.44	
			pH +/- 0.2 6.24 6.25 6.25 6.26 0.01 0.00	
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	-07 t t 4 ft	Temp C +/- 0.2 24.89 24.99 25.11 25.02 25.15 0.12 -0.09	
		MW-07 2 in 40 ft 10 ft 11.94 ft	ation Summary Elapsed 1200.02 1500.02 2100.02 2400.02	
Project Information: Operator Name Company Name Project Name Site Name Latitude	Latitude Longitude Sonde SN Turbidity Make/Model	ion: r pth :h	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 11:23:23 1200.02 Last 5 11:33:23 1800.02 Last 5 11:38:23 2100.02 Last 5 11:38:23 2400.02 Variance 0 Variance 1	
		Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1	

Notes Sample time 1146. Sunny 59.

Product Name: Low-Flow System

Date: 2018-03-22 16:41:02

			ORP mV	+/- 10	-47.92 -40.96 -32.77	-29.90 -25.87 8.18	2.87	4.04	
PP PE .17 in 45 ft	38.0 ft	400 mL/min 0.290854 L 300 sec 89 in 24 L	RDO mg/L	+/- 0.2	0.00 0.00 0.00	0.06	-0.00	0.00	
4 d d L. 4	38	2 8 8 9 5 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	DTW ft		24.79 24.89 24.96	25.03 25.06			
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU	4/- 5	1.23 1.00 1.07	1.17			
		Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Ra Stabilization Drawdow Total Volume Pumped	SpCond µS	+/- 2%	11219.62 11201.23 11192.88	11175.23 11146.94 -8.35	-17.64	-28.30	
			Hd	+/- 0.2	4.44 4.50 4.53	4.57 4.61 0.03	0.04	0.04	
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	0° 0' 0" 417744 Hach 2100Q	80. ±	Temp C	+/- 0.2	26.55 26.49 26.38	26.56 26.47 -0.11	0.18	-0.09	
		MW-08 2 in 43 ft 10 ft 17.61 ft	Low-Flow Sampling Stabilization Summary Time Elapsed		2399.94 2699.94 2999.94	3299.94 3599.94			
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Lantitude Sonde SN Turbidity Make/Model	ion: pth er	npling Stabiliza Time		16:17:14 16:22:14 16:27:14	16:32:14 16:37:14			
		Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sai	Stabilization	Last 5 Last 5 Last 5	Last 5 Last 5 Variance 0	Variance 1	Variance 2	Notes

Notes Sample time 1640. Sunny 65.

**Grab Samples** 

Date: 2018-03-23 09:02:38

PP PE .17 in 35 ft	28.0 ft	400 mL/min 0.2462198 L 300 sec 15 in 12 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	MW-09 2 in 33 ft 10 ft 11.57 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Sonde Sin Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

	ORP mV	+/- 10	-260.49	-260.55	-259.63	-258.67	-257.93	0.92	96.0	0.74
	RDO mg/L	+/- 0.2	0.10	0.08	0.07	90.0	90.0	-0.01	-0.01	-0.00
	DTW ft		12.84	12.86	12.87	12.87	12.87			
	/cm Turb NTU	-/+	8.49	5.87	4.79	3.81	4.09		-3.62	
	SpCond µS	+/- 5%	7764.92	7929.13	7961.10	7957.48	7993.90	31.97	-3.62	36.42
	Hd	+/- 0.2	6.46	6.43	6.42	6.41	6.40	-0.01	-0.01	-0.01
			24.88	24.77	24.87	24.97	24.82	0.10	60.0	-0.15
ation Summary:	Time Elapsed		599.98	86.668	1199.98	1499.98	1799.98			
mpling Stabiliz	Time		08:38:29	08:43:29	08:48:29	08:53:29	08:58:29			
Low-Flow Sa		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 0902. Dup-04 fake sample time 0802. EB-02 sample time 0805. FB-02 sample time 0755. Sunny 56.

Date: 2018-03-22 10:52:51

			ORP mV +/- 10 -159.96 -162.87 -163.73 -0.36 -0.86 0.50
PP PE 17 in 35 ft	28.0 ft	400 mL/min 0.2462198 L 300 sec 18 in 24 L	RDO mg/L +/- 0.2 0.07 0.06 0.06 0.06 -0.00 -0.00
<u>ი</u> ი ∠. ო	Š	400°,	DTW ft 8.58 8.61 8.62 8.63 8.64
mation: el/Type e meter gth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU +/- 5% +/- 5 9619.75 16.60 9623.13 18.20 9630.20 8.64 9605.87 7.90 9602.70 8.67 7.07 -24.33
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump place	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Ra Stabilization Drawdov Total Volume Pumpec	SpCond µS +/- 5% 9619.75 9623.13 9630.20 9605.87 9602.70 7.07 -24.33
			pH +/- 0.2 5.32 5.31 5.31 -0.02 -0.02
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	10 ±	Temp C +/- 0.2 26.34 26.33 26.35 -0.11 0.13
Rick Hag RDH Env Smith CC Smith Pla 0° 0' 0"	417744 Hach 2	MW-10 2 in 33 ft 10 ft 7.09 ft	tion Summary Elapsed 2400.02 2700.02 3299.98 3599.98 3599.98
ation: e ne	e/Model	on: th	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 10:30:09 2400.02 Last 5 10:40:09 3000.02 Last 5 10:45:09 3299.98 Last 5 10:50:09 3599.98 Variance 0 Variance 1 Variance 2  Notes Sample time 1052. Sunny 54.
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sam Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1 Variance 2

Date: 2018-03-2117:27:44

PP PE .17 in 35 ft	28.0 ft	400 mL/min 0.2462198 L 300 sec 30 in 70 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	41/744 Hach 2100Q	MW-11 2 in 33 ft 10 ft 10.24 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	sonde sin Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

	ORP mV	+/- 10	-228.34	-217.00	-229.49	-227.41	-224.76	-12.49	2.08	2.64
	RDO mg/L	+/- 0.2	0.08	0.08	0.08	0.08	0.08	-0.00	-0.00	-0.00
	DTW ft		12.84	12.84	12.84	12.84	12.84			
	cm Turb NTU	4/- 5	17.00	14.10	14.60	14.40	14.60		24.94	
	SpCond µS/	+/- 2%	6683.64	7194.01	6623.04	6647.98	68.9099	-570.97	24.94	-41.09
	Hd	+/- 0.2	6.27	6.10	6.29	6.28	6.28	0.19	-0.01	0.00
	Temp C	+/- 0.2	26.69	26.82	26.83	26.79	26.87	0.01	-0.04	0.08
ation Summary	Time Elapsed		9309.93	9609.89	68.6066	10209.89	10509.89			
npling Stabiliz	Time		17:03:36	17:08:36	17:13:36	17:18:36	17:23:36			
Low-Flow San		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 1725. Dup-02 fake sample time 1625. Sunny 65.

Date: 2018-03-22 15:01:29

			ORP mV +/- 10 -340.59 -342.35 -343.61 -345.48 -344.72 -1.26 -1.87	
PP PE .17 in 45 ft	38.0 ft	400 mL/min 0.290854 L 300 sec 51 in 14 L	RDO mg/L +/- 0.2 0.15 0.17 0.14 0.05 0.04 -0.03 -0.09	
9 H H H H H H H H H H H H H H H H H H H	38	400 0.29 300 51 in	DTW ft 18.60 18.92 19.14 19.25	
nation: ====================================	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU +/- 5% +/- 5 14465.96 0.66 14519.82 0.59 14592.88 0.48 14717.1 0.41 14648.68 0.42 73.07	
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump place	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Ra Stabilization Drawdow Total Volume Pumped	SpCond µS/ +/- 5% 14465.96 14519.82 14592.88 14717.11 14648.68 73.07 124.22 -68.43	
			pH +/- 0.2 6.91 6.90 6.89 6.89 6.88 -0.01	
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	MW-13 2 in 43 ft 10 ft 14.97 ft	7 Temp C +/- 0.2 26.79 26.74 26.74 26.74 26.71 -0.09 -0.00	
Smir	417 Hac	MW-1 2 in 43 ft 10 ft 14.97	eation Summary Elapsed 900.02 1200.02 1500.02 1800.02 2103.02	
mation: me ime e	ke/Model	tion: ir spth th ter	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 14:39:01 900.02 Last 5 14:44:01 1200.02 Last 5 14:54:01 1800.02 Last 5 14:59:04 2103.02 Variance 0 Variance 2	
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sa Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1	

Notes Sample time 1501. EB-01 sample time 1405. Sunny 61.

2018-03-22 18:52:18 Date:

				ORP mV +/- 10	-303.73 -304.09 -304.09	-304.21 -304.03 -0.01 -0.12 0.18
PP PE .17 in 43 ft	36.0 ft	400 mL/min 0.2819272 L 300 sec 9 in 16 L		RDO mg/L +/- 0.2	0.00 80.00 80.00	0.08 0.08 -0.00 -0.00
H H 10.	36	400 0.28 300 9 in		DTW ft	23.62 23.61 23.61	23.61 23.61
mation: el/Type se meter igth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown		SpCond µS/cmTurb NTU +/- 5% +/- 5	0.78 0.59 0.68	0.55
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Informatio Final Pumping Rate Total System Volum Calculated Sample Stabilization Drawd Total Volume Pump		SpCond µS +/- 5%	7268.91 7302.88 7291.03	7299.29 7350.05 -11.85 8.26 50.76
				pH +/- 0.2	6.87 6.87 6.87	6.87 6.87 -0.00 -0.00
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	14 6 ft		Temp C +/- 0.2	25.27 24.96 24.83	24.73 24.69 -0.13 -0.10
Rick Hag RDH En Smith C Smith PI 0° 0' 0" 0"	417744 Hach 2'	MW-14 2 in 41 ft 10 ft 22.76 ft	ation Summary	Elapsed	1200.02 1500.02 1799.96	2099.95 2399.96
nation: ne ne	ce/Model	ion: pth h	Low-Flow Sampling Stabilization Summary	Time	18:29:46 18:34:46 18:39:46	18:44:46 18:49:46
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar	Stabilization	Last 5 Last 5 Last 5	Last 5 Last 5 Variance 0 Variance 1 Variance 2

Notes

Sample time 1852. Sunset 60.

Date: 2018-03-21 09:50:42

	9P	.17 in	28 ft			21.0 ft		400 ml /min	0.2149758 L	300 sec	19 in	38 L	
Pump Information:	Pump Model/Type Tubing Type	Tubing Diameter	Tubing Length			Pump placement from TOC	Pumping Information:	Final Dumping Rate	Total System Volume	Calculated Sample Rate	Stabilization Drawdown	Total Volume Pumped	
	Rick Hagendorfer RDH Fnv	Smith CCR	Smith Plant 0° 0' 0"	,,0 ,0 ,0	417744	Hach 2100Q		CO-WW	2 in	26 ft	10 ft	5.37 ft	
Project Information:	Operator Name Company Name	Project Name	Site Name Latitude	Longitude	Sonde SN	Turbidity Make/Model	Well Information:	Mell II	Well diameter	Well Total Depth	Screen Length	Depth to Water	: : : :

	ORP mV	+/- 10	-111.58	-112.04	-112.26	-112.65	-112.77	-0.22	-0.39	-0.11
	RDO mg/L	+/- 0.2	90.0	90.0	90.0	90.0	0.05	0.00	0.01	-0.01
	DTW ft		7.06	7.07	7.07	7.07	7.07			
	S/cm Turb NTU	+/- 2	12.10	13.40	11.70	10.20	11.00			
								-0.90	0.45	-0.09
	Hd	+/- 0.2	6.63	6.64	99.9	6.67	89.9	0.01	0.01	0.01
		•	22.94	23.07	23.20	23.25	23.32	0.13	0.05	0.07
ation Summary	Time Elapsed		4501.98	4801.98	5102.98	5402.98	5702.98			
npling Stabiliza	Time		09:27:35	09:32:35	09:37:36	09:42:36	09:47:36			
Low-Flow Sar		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 0951. Sunny 54.

Date: 2018-03-20 17:22:21

PP PE .17 in 35 ft	28.0 ft	400 mL/min 0.2462198 L 300 sec 3 in 58 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0º 0' 0"	417744 Hach 2100Q	MW-03 2 in 33 ft 10 ft 6.70 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

	ORP mV	+/- 10	-27.06	-28.42	-28.90	-29.51	-30.54	-0.47	-0.61	-1.03
	RDO mg/L	+/- 0.2	0.03	0.03	0.03	0.03	0.03	-0.00	-0.00	0.00
	DTW ft		6.97	6.97	6.97	6.97	6.97			
	S/cm Turb NTU	+/- 5	21.10	27.90	23.40	18.20	18.90			
	SpCond µ	+/- 2%	49.25	49.29	49.22	49.26	49.15	-0.07	0.03	-0.11
	Hd	+/- 0.2	4.91	4.91	4.91	4.91	4.92	0.00	0.00	0.01
		+/- 0.2	24.29	24.28	24.28	24.26	24.33	-0.00	-0.02	0.07
ation Summary	Time Elapsed		7200.88	7800.88	8100.85	8400.85	8700.85			
npling Stabiliza	Time		16:52:25	17:02:25	17:07:25	17:12:25	17:17:25			
Low-Flow Sar		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 1720. Dup-01 fake sample time 1620. Sunny 68.

Date: 2018-03-20 13:30:22

			ORP mV	+/- 10	-62.77 -68.82	-73.79 -78.17	-81.85 -4.98	-4.38	-3.67	
PP PE .17 in 32 ft	27.0 ft	300 mL/min 0.2328295 L 300 sec 64 in 27 L	RDO mg/L	+/- 0.2	0.07	0.07	0.07	0.00	-0.00	
₽ ₽ <i>~</i> . w	2	80808	DTW ft		14.61 14.68	14.78 14.84	14.84			
rmation: del/Type de deter ngth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU	-/+	12.90 12.10	10.80	11.00			
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Informatio Final Pumping Rate Total System Volum Calculated Sample Stabilization Drawd Total Volume Pump	SpCond µ9	+/- 2%	1011.52 999.58	995.17 991.99	972.34 -4.41	-3.18	-19.65	
			Hd	+/- 0.2	6.08 6.07	9.0 9.0 9.0 9.0	6.05	-0.01	-0.01	
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	417744 Hach 2100Q	ft 12	Temp C	+/- 0.2	25.98 25.84	26.14 26.14	26.10 0.30	-0.00	-0.04	
Rick Hag RDH Env Smith CC Smith Pla 0° 0' 0"	417744 Hach 2	MW-12 2 in 32 ft 10 ft 9.41 ft	ition Summary Elapsed		4199.58 4499.59	4799.58 5099.59	5399.58			
nation: ne me	e/Model	ion: pth er	Low-Flow Sampling Stabilization Summary Time Elapsed		13:06:20 13:11:20	13:16:20 13:21:20	13:26:20			
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar	Stabilization	Last 5 Last 5	Last 5 Last 5	Last 5 Variance 0	Variance 1	Variance 2	() + ()

Notes Sample time 1329. Sunny 73.



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-151256-1

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Cheyanaxahitmire

Authorized for release by: 4/13/2018 1:35:46 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# Case Narrative

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Job ID: 400-151256-1

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151256-1

## Metals

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 392227 and analytical batch 393503 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-07 (400-151256-5), MW-06 (400-151256-6), MW-10 (400-151256-8), MW-08 (400-151256-12), MW-09 (400-151256-15) and DUP-04 (400-151256-18). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The method blank for preparation batch 393404 and analytical batch 393589 contained Mercury above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

# **General Chemistry**

Method(s) SM 4500 F C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 391874 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 CI- E: The method blank for analytical batch 392314 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 CI- E: The method blank for analytical batch 392343 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 CI- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-12 (400-151256-1), MW-07 (400-151256-5), MW-06 (400-151256-6), MW-10 (400-151256-8), MW-08 (400-151256-12), MW-09 (400-151256-15) and DUP-04 (400-151256-18). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-07 (400-151256-5), MW-06 (400-151256-6), MW-10 (400-151256-8), MW-08 (400-151256-12), MW-09 (400-151256-15) and DUP-04 (400-151256-18). Elevated reporting limits (RLs) are provided.

3

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: MW-12

Analyte	Result Qu	ualifier PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.013	0.0025	0.00049	mg/L	5	_	6020	Total
								Recoverable
Boron	0.072	0.050	0.021	mg/L	5		6020	Total
								Recoverable
Calcium	34	0.25	0.13	mg/L	5		6020	Total
								Recoverable
Lithium	0.016	0.0050	0.0011	mg/L	5		6020	Total
								Recoverable
Total Dissolved Solids	510	5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	190	10	3.0	mg/L	5		SM 4500 CI- E	Total/NA
Fluoride	0.12	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	1.8 I	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.05			SU	1		Field Sampling	Total/NA

Client Sample ID: MW-03

# Lab Sample ID: 400-151256-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.018		0.0025	0.00049	mg/L	5	_	6020	Total
									Recoverable
Calcium	1.9		0.25	0.13	mg/L	5		6020	Total
									Recoverable
Chromium	0.0024	I	0.0025	0.0011	mg/L	5		6020	Total
									Recoverable
Lithium	0.016		0.0050	0.0011	mg/L	5		6020	Total
									Recoverable
Selenium	0.00069	I	0.0013	0.00024	mg/L	5		6020	Total
									Recoverable
Total Dissolved Solids	12		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	11	V	2.0	0.60	mg/L	1		SM 4500 CI- E	Total/NA
Field pH	4.92				SU	1		Field Sampling	Total/NA

Client Sample ID: DUP-01

# Lab Sample ID: 400-151256-3

Analyte	Result C	Qualifier PQ	L MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.018	0.002	0.00049	mg/L	5	_	6020	Total
								Recoverable
Calcium	1.8	0.2	5 0.13	mg/L	5		6020	Total
								Recoverable
Chromium	0.0023 I	0.002	5 0.0011	mg/L	5		6020	Total
								Recoverable
Lithium	0.015	0.005	0.0011	mg/L	5		6020	Total
								Recoverable
Selenium	0.00024 I	0.001	3 0.00024	mg/L	5		6020	Total
								Recoverable
Total Dissolved Solids	54	5.	0 3.4	mg/L	1		SM 2540C	Total/NA
Chloride	11 V	/ 2.	0.60	mg/L	1		SM 4500 CI- E	Total/NA

Client Sample ID: MW-02

# Lab Sample ID: 400-151256-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.021		0.0025	0.00049	mg/L	5	_	6020	Total
Calcium	45		0.25	0.13	mg/L	5		6020	Recoverable Total Recoverable

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

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4/13/2018

# **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: MW-02 (Continued)

Lab Sample	ID:	400-1	51256-4
------------	-----	-------	---------

Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac	O Method	Prep Type
Chromium	0.0032	0.0025	0.0011	mg/L	5	6020	Total
							Recoverable
Lithium	0.012	0.0050	0.0011	mg/L	5	6020	Total
							Recoverable
Total Dissolved Solids	150	5.0	3.4	mg/L	1	SM 2540C	Total/NA
Chloride	9.3 V	2.0	0.60	mg/L	1	SM 4500 CI- E	Total/NA
Fluoride	0.28	0.10	0.032	mg/L	1	SM 4500 F C	Total/NA
Field pH	6.68			SU	1	Field Sampling	Total/NA

**Client Sample ID: MW-07** 

# Lab Sample ID: 400-151256-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D Method	Prep Type
Arsenic	0.0014		0.0013	0.00046	mg/L	5	6020	Total
								Recoverable
Barium	0.061		0.0025	0.00049	mg/L	5	6020	Total
		_			_	_		Recoverable
Chromium	0.0013	I	0.0025	0.0011	mg/L	5	6020	Total
						<u>.</u>		Recoverable
Lithium	0.0023	I	0.0050	0.0011	mg/L	5	6020	Total
	0.0050		0.045	0.00005		_	0000	Recoverable
Molybdenum	0.0058	I	0.015	0.00085	mg/L	5	6020	Total
						_		Recoverable
Selenium	0.00062	I	0.0013	0.00024	mg/L	5	6020	Total
								Recoverable
Boron - DL	3.0		0.25	0.11	mg/L	25	6020	Total
0.1.	000		4.0	0.00		0.5	0000	Recoverable
Calcium - DL	200		1.3	0.63	mg/L	25	6020	Total
T. ( D)	0.400		=0	0.4	,,		014.05.400	Recoverable
Total Dissolved Solids	3400		50		mg/L		SM 2540C	Total/NA
Chloride	1300		80	24	mg/L	40	SM 4500 CI- E	Total/NA
Sulfate	720		150	42	mg/L	30	SM 4500 SO4	E Total/NA
Field pH	6.26				SU	1	Field Sampling	Total/NA

Client Sample ID: MW-06

# Lab Sample ID: 400-151256-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00048	I	0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.060		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Beryllium	0.0014	I	0.0025	0.00034	mg/L	5		6020	Total
									Recoverable
Lithium	0.019		0.0050	0.0011	mg/L	5		6020	Total
		_			_	_			Recoverable
Selenium	0.00037	I	0.0013	0.00024	mg/L	5		6020	Total
5 5			4.0	0.40	,,	400		0000	Recoverable
Boron - DL	8.6		1.0	0.42	mg/L	100		6020	Total
Coloium DI	200					100		6020	Recoverable
Calcium - DL	290		5.0	2.5	mg/L	100		6020	Total
Total Dissolved Solids	5400		25	17	mg/L	1		SM 2540C	Recoverable Total/NA
					•	-			
Chloride	2900		120		mg/L	60		SM 4500 CI- E	Total/NA
Fluoride	0.050	I	0.10	0.032	-	1		SM 4500 F C	Total/NA
Sulfate	530		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	5.3				SU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-10** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Lab Sample ID: 400-151256-10

SM 4500 CI- E

Lab Sample ID: 400-151256-11

Lab Sample ID: 400-151256-12

Total/NA

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0034		0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.10		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Beryllium	0.00039	I	0.0025	0.00034	mg/L	5		6020	Total
									Recoverable
Lithium	0.0065		0.0050	0.0011	mg/L	5		6020	Total
									Recoverable
Molybdenum	0.0018	1	0.015	0.00085	mg/L	5		6020	Total
									Recoverable
Boron - DL	11		2.0	0.84	mg/L	200		6020	Total
									Recoverable
Calcium - DL	510		10	5.0	mg/L	200		6020	Total
					_				Recoverable
Total Dissolved Solids	6800		50		mg/L	1		SM 2540C	Total/NA
Chloride	2700		120	36	mg/L	60		SM 4500 CI- E	Total/NA
Sulfate	810		150	42	mg/L	30		SM 4500 SO4 E	Total/NA
Field pH	5.31				SU	1		Field Sampling	Total/NA

# **Client Sample ID: FB-01**

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D Method	Prep Type
Lithium	0.0015	I	0.0050	0.0011	mg/L	5	6020	Total
Selenium	0.00045	I	0.0013	0.00024	mg/L	5	6020	Recoverable Total Recoverable

2.0

0.60 mg/L

0.81 IV

# **Client Sample ID: EB-01**

Chloride

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0014	Ī	0.0050	0.0011	mg/L	5	_	6020	Total
Chloride	0.96	IV	2.0	0.60	mg/L	1		SM 4500 CI- E	Recoverable Total/NA

# Client Sample ID: MW-08

	<del></del>								
 Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D Met	hod	Prep Type
Arsenic	0.00097	Ī	0.0013	0.00046	mg/L	5	602	0	Total
									Recoverable
Barium	0.064		0.0025	0.00049	mg/L	5	602	0	Total
									Recoverable
Beryllium	0.0014	I	0.0025	0.00034	mg/L	5	602	0	Total
									Recoverable
Lithium	0.011		0.0050	0.0011	mg/L	5	602	0	Total
									Recoverable
Selenium	0.00030	I	0.0013	0.00024	mg/L	5	602	0	Total
								_	Recoverable
Boron - DL	15		1.0	0.42	mg/L	100	602	0	Total
			<u>.</u> . <u>.</u> . <u>.</u> .						Recoverable
Calcium - DL	540		5.0	2.5	mg/L	100	602	0	Total
T / I D:	0.400		=0	0.4	,,	4	014	05.400	Recoverable
Total Dissolved Solids	8100		50		mg/L	1		2540C	Total/NA
Chloride	3200		160	48	mg/L	80	SM	4500 CI- E	Total/NA
Sulfate	900		150	42	mg/L	30	SM	4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

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# **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

Lab Sample ID: 400-151256-16

Lab Sample ID: 400-151256-17

Lab Sample ID: 400-151256-18

SDG: Ash Pond

Client Sample ID: MW-08 (Continued	Lab Sample ID: 400-151256-12

Analyte	Result Qualifier	PQL	MDL Unit	Dil Fac D	Method	Prep Type
Field pH	4.61		SU	1	Field Sampling	Total/NA

### Client Sample ID: MW-09 Lab Sample ID: 400-151256-15

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0022		0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.093		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Lithium	0.0056		0.0050	0.0011	mg/L	5		6020	Total
									Recoverable
Molybdenum	0.0014	I	0.015	0.00085	mg/L	5		6020	Total
									Recoverable
Boron - DL	9.4		1.0	0.42	mg/L	100		6020	Total
									Recoverable
Calcium - DL	290		5.0	2.5	mg/L	100		6020	Total
									Recoverable
Total Dissolved Solids	1700		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	2300		120	36	mg/L	60		SM 4500 CI- E	Total/NA
Sulfate	630		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	6.4				SU	1		Field Sampling	Total/NA

# **Client Sample ID: EB-02**

Analyte	Result Qualifier	PQL	MDL Unit	Dil Fac D	Method	Prep Type
Lithium	0.0011 I	0.0050	0.0011 mg/L		6020	Total
Chloride	0.90 IV	2.0	0.60 mg/L	1	SM 4500 CI- E	Recoverable Total/NA

# **Client Sample ID: FB-02**

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0017	I	0.0050	0.0011	mg/L	5	_	6020	Total
Chloride	0.74	IV	2.0	0.60	mg/L	1		SM 4500 CI- E	Recoverable Total/NA

# Client Sample ID: DUP-04

onent oumple ib. bor	<del> </del>				Lub Gui	iibi.	C 1D. 700-1	01200-10
 Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac	D M	lethod	Prep Type
Arsenic	0.0022	0.0013	0.00046	mg/L	5	_ <sub>60</sub>	020	Total
								Recoverable
Barium	0.094	0.0025	0.00049	mg/L	5	6	020	Total
								Recoverable
Lithium	0.0056	0.0050	0.0011	mg/L	5	6	020	Total
								Recoverable
Molybdenum	0.0013 I	0.015	0.00085	mg/L	5	6	020	Total
								Recoverable
Boron - DL	9.3	1.0	0.42	mg/L	100	6	020	Total
						_		Recoverable
Calcium - DL	300	5.0	2.5	mg/L	100	60	020	Total
						<u>.</u>		Recoverable
Total Dissolved Solids	2900	50		mg/L	1		SM 2540C	Total/NA
Chloride	2400	160	48	mg/L	80	S	M 4500 CI- E	Total/NA
Sulfate	640	100	28	mg/L	20	S	M 4500 SO4 E	Total/NA
_								

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

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# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

### **Protocol References:**

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

# **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Pensacola

# **Sample Summary**

Matrix

Water

Client: Gulf Power Company Project/Site: CCR Smith Plant

Client Sample ID

MW-12

MW-03

DUP-01

MW-02

MW-07

MW-06

MW-10

FB-01

EB-01

MW-08

MW-09

EB-02

FB-02

DUP-04

Lab Sample ID

400-151256-1

400-151256-2

400-151256-3

400-151256-4

400-151256-5

400-151256-6

400-151256-8

400-151256-10

400-151256-11

400-151256-12

400-151256-15

400-151256-16

400-151256-17

400-151256-18

TestAmerica Job ID: 400-151256-1

	SD	G: Ash F	Pond	
Colle	otod	Receiv		
03/20/18	3 13:29	03/22/18	14:40	
03/20/18	3 17:20	03/22/18	14:40	
03/20/18	3 16:20	03/22/18	14:40	
03/21/18	3 09:51	03/22/18	14:40	
03/21/18	3 11:46	03/22/18	14:40	
03/21/18	3 13:24	03/22/18	14:40	
03/22/18	3 10:52	03/22/18	14:40	
03/22/18	3 13:20	03/23/18	17:05	
03/22/18	3 14:05	03/23/18	17:05	
03/22/18	3 16:40	03/23/18	17:05	
03/23/18	3 09:02	03/23/18	17:05	
03/23/18	3 08:05	03/23/18	17:05	

03/23/18 07:55 03/23/18 17:05

03/23/18 08:02 03/23/18 17:05

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-12** 

Date Collected: 03/20/18 13:29 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 20:34	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 20:34	5
Barium	0.013		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 20:34	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:34	5
Boron	0.072		0.050	0.021	mg/L		03/31/18 13:33	04/10/18 20:34	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:34	5
Calcium	34		0.25	0.13	mg/L		03/31/18 13:33	04/10/18 20:34	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 20:34	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 20:34	5
Lead	0.00035	Ü	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 20:34	5
Lithium	0.016		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 20:34	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 20:34	5
Selenium	0.00024	Ü	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 20:34	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 20:34	5
Method: 7470A - Mercury	(CVAA)								
Analyte	Result	Qualifier	PQL	MDL		D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		03/31/18 15:08	04/03/18 17:10	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	510		5.0	3.4	mg/L			03/24/18 17:50	1
			10	3.0	mg/L			04/02/18 10:24	5
Chloride	190								
Chloride Fluoride	190 0.12		0.10	0.032	mg/L			03/28/18 14:18	1
		1	0.10 5.0		mg/L mg/L			03/28/18 14:18 03/26/18 08:23	1 1
Fluoride	0.12 1.8	i							1
Fluoride Sulfate	0.12 1.8 Field Sampling	I Qualifier			mg/L	D	Prepared		1 1 Dil Fac

Client: Gulf Power Company Project/Site: CCR Smith Plant

Date Received: 03/22/18 14:40

TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-03** Lab Sample ID: 400-151256-2 Date Collected: 03/20/18 17:20

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 20:57	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 20:57	5
Barium	0.018		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 20:57	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:57	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 20:57	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:57	5
Calcium	1.9		0.25	0.13	mg/L		03/31/18 13:33	04/10/18 20:57	5
Chromium	0.0024	T.	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 20:57	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 20:57	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 20:57	5
Lithium	0.016		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 20:57	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 20:57	5
Selenium	0.00069	1	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 20:57	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 20:57	5
Method: 7470A - Mercury	(CVAA)								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		03/31/18 15:08	04/03/18 17:12	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL		D	Prepared	Analyzed	Dil Fac
			5.0	3./	mg/L			03/24/18 17:50	
Total Dissolved Solids	12		5.0		-				1
Total Dissolved Solids Chloride	12 11	v	2.0		mg/L			04/02/18 11:09	1 1
Total Dissolved Solids Chloride Fluoride		=			mg/L			04/02/18 11:09 03/28/18 14:22	1 1 1
Chloride	11	U	2.0	0.60 0.032	mg/L				1 1 1
Chloride Fluoride	11 0.032 1.4	U	2.0 0.10	0.60 0.032	mg/L mg/L			03/28/18 14:22	1 1
Chloride Fluoride Sulfate	11 0.032 1.4 Field Sampling	U	2.0 0.10	0.60 0.032	mg/L mg/L mg/L	D	Prepared	03/28/18 14:22	1 1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: DUP-01

Date Collected: 03/20/18 16:20 Date Received: 03/22/18 14:40 Lab Sample ID: 400-151256-3

**Matrix: Water** 

Method: 6020 - Metals	s (ICP/MS) - Total Red	coverable							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 21:01	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 21:01	5
Barium	0.018		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 21:01	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 21:01	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 21:01	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 21:01	5
Calcium	1.8		0.25	0.13	mg/L		03/31/18 13:33	04/10/18 21:01	5
Chromium	0.0023	I	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 21:01	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 21:01	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 21:01	5
Lithium	0.015		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 21:01	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 21:01	5
Selenium	0.00024	I	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 21:01	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 21:01	5

Method: 7470A - Mercury (CVA	<b>4</b> A)								
Analyte	Result	Qualifier	PQL	MDL I	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		03/31/18 15:08	04/03/18 17:14	1

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	54		5.0	3.4	mg/L			03/24/18 17:50	1
Chloride	11	V	2.0	0.60	mg/L			04/02/18 11:09	1
Fluoride	0.032	U	0.10	0.032	mg/L			03/28/18 14:26	1
Sulfate	1.4	U	5.0	1.4	mg/L			03/26/18 08:23	1

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4/13/2018

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-02** 

Lab Sample ID: 400-151256-4 **Matrix: Water** 

Date Collected: 03/21/18 09:51 Date Received: 03/22/18 14:40

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 21:06	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 21:06	5
Barium	0.021		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 21:06	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 21:06	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 21:06	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 21:06	5
Calcium	45		0.25	0.13	mg/L		03/31/18 13:33	04/10/18 21:06	5
Chromium	0.0032		0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 21:06	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 21:06	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 21:06	5
Lithium	0.012		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 21:06	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 21:06	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 21:06	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 21:06	5
Method: 7470A - Mercury	(CVAA)								
Analyte	Result	Qualifier	PQL	MDL		D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 10:35	04/12/18 09:56	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL		D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	150		5.0	3.4	mg/L			03/26/18 12:25	1
Chloride	9.3	V	2.0	0.60	mg/L			04/02/18 11:11	1
Elmanida	0.28		0.10	0.032	mg/L			03/28/18 14:30	1
riuoriae									
	1.4	U	5.0	1.4	mg/L			03/27/18 06:54	1
Fluoride Sulfate  Method: Field Sampling -		U	5.0	1.4	mg/L			03/27/18 06:54	1
Sulfate	Field Sampling	U Qualifier	5.0 <b>PQL</b>	1.4		D	Prepared	Analyzed 03/21/18 09:51	Dil Fac

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-07** 

Lab Sample ID: 400-151256-5 **Matrix: Water** 

Date Collected: 03/21/18 11:46 Date Received: 03/22/18 14:40

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 22:40	5
Arsenic	0.0014		0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 22:40	5
Barium	0.061		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 22:40	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 22:40	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 22:40	5
Chromium	0.0013	I	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 22:40	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 22:40	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 22:40	5
Lithium	0.0023	T.	0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 22:40	5
Molybdenum	0.0058	1	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 22:40	5
Selenium	0.00062	T.	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 22:40	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 22:40	5

Method: 6020 - Metals (ICP/MS)	) - Total Re	coverable - DL							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.0		0.25	0.11	mg/L		03/31/18 13:33	04/10/18 21:33	25
Calcium	200		1.3	0.63	mg/L		03/31/18 13:33	04/10/18 21:33	25

Analyte	,	Qualifier	PQL	MDL Un	nit D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070 mg	g/L	04/10/18 10:35	04/12/18 09:58	1
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General Chemistry Analyte	Result Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3400	50	34	mg/L			03/26/18 12:25	1
Chloride	1300	80	24	mg/L			04/02/18 11:47	40
Fluoride	0.032 U	0.10	0.032	mg/L			03/28/18 14:42	1
Sulfate	720	150	42	mg/L			03/27/18 07:01	30

Method: Field Sampling - Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.26				SU			03/21/18 11:46	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-06** 

Date Collected: 03/21/18 13:24 Date Received: 03/22/18 14:40 Lab Sample ID: 400-151256-6

Matrix: Water

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 22:45	
Arsenic	0.00048	T.	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 22:45	5
Barium	0.060		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 22:45	5
Beryllium	0.0014	T	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 22:45	
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 22:45	
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 22:45	
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 22:45	
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 22:45	
Lithium	0.019		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 22:45	
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 22:45	
Selenium	0.00037	1	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 22:45	
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 22:45	
Method: 6020 - Metals (ICF Analyte	Result	Qualifier	PQL		Unit	D	Prepared	Analyzed	Dil Fa
Boron	8.6		1.0		mg/L		03/31/18 13:33	04/10/18 21:37	10
Calcium	290		5.0	2.5	mg/L		03/31/18 13:33	04/10/18 21:37	10
Method: 7470A - Mercury (	,								
Analyte		Qualifier	PQL		Unit	D	Prepared	Analyzed	Dil Fa
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 10:35	04/12/18 10:00	
General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	5400		25	17	mg/L			03/27/18 13:42	-
Chloride	2900		120	36	mg/L			04/02/18 12:12	6
Fluoride	0.050	1	0.10	0.032	mg/L			03/28/18 14:50	
Sulfate	530		100		mg/L			03/27/18 07:39	2
Method: Field Sampling - I	Field Sampling								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Field pH	5.3				SU			03/21/18 13:24	

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-10** 

Date Collected: 03/22/18 10:52 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-8

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 22:54	5
Arsenic	0.0034		0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 22:54	5
Barium	0.10		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 22:54	5
Beryllium	0.00039		0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 22:54	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 22:54	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 22:54	5
Cobalt	0.00040		0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 22:54	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 22:54	5
Lithium	0.0065		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 22:54	5
Molybdenum	0.0018		0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 22:54	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 22:54	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 22:54	5
Method: 6020 - Metals (ICP Analyte	Result	Qualifier	PQL		Unit	D	Prepared	Analyzed	Dil Fac
Boron			2.0	0.84	mg/L		03/31/18 13:33	04/10/18 21:46	200
Calcium	510		10	5.0	mg/L		03/31/18 13:33	04/10/18 21:46	200
Method: 7470A - Mercury (	CVAA)								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 10:35	04/12/18 10:35	1
General Chemistry Analyte	Posult	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6800	Qualifier	50		mg/L	=		03/27/18 13:11	1
Chloride	2700		120		mg/L			04/02/18 12:12	60
Fluoride	0.032	11	0.10	0.032	-			03/28/18 14:58	1
Sulfate	810		150		mg/L			03/27/18 07:47	30
Sunate	810		130	42	mg/L			03/21/10 07:47	30
Method: Field Sampling - F Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: FB-01

Date Collected: 03/22/18 13:20 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-10

Method: 6020 - Metals (ICP/N	IS) - Total Rec	overable							
Analyte	Result C	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010 L	J	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 19:58	5
Arsenic	0.00046 L	J	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 19:58	5
Barium	0.00049 L	J	0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 19:58	5
Beryllium	0.00034 L	j	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 19:58	5
Boron	0.021 L	J	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 19:58	5
Cadmium	0.00034 L	J	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 19:58	5
Calcium	0.13 L	j	0.25	0.13	mg/L		03/31/18 13:33	04/10/18 19:58	5
Chromium	0.0011 L	J	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 19:58	5
Cobalt	0.00040 L	J	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 19:58	5
Lead	0.00035 L	j	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 19:58	5
Lithium	0.0015 I		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 19:58	5
Molybdenum	0.00085 L	J	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 19:58	5
Selenium	0.00045 I		0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 19:58	5
Thallium	0.000085 L	J	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 19:58	5

Method: 7470A - Mercury (CVA	AA)								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 10:35	04/12/18 10:39	1

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			03/26/18 12:25	1
Chloride	0.81	IV	2.0	0.60	mg/L			04/02/18 11:09	1
Fluoride	0.032	U	0.10	0.032	mg/L			03/30/18 09:58	1
Sulfate	1.4	U	5.0	1.4	mg/L			03/27/18 06:55	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: EB-01** 

Date Collected: 03/22/18 14:05 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-11

Method: 6020 - Metals (I	CP/MS) - Total Re	coverable							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 20:03	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 20:03	5
Barium	0.00049	U	0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 20:03	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:03	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 20:03	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:03	5
Calcium	0.13	U	0.25	0.13	mg/L		03/31/18 13:33	04/10/18 20:03	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 20:03	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 20:03	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 20:03	5
Lithium	0.0014	I	0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 20:03	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 20:03	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 20:03	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 20:03	5
Method: 7470A - Mercur	y (CVAA)								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	$\overline{U}$	0.00020	0.000070	mg/L		04/10/18 10:35	04/12/18 10:41	1

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			03/27/18 13:11	1
Chloride	0.96	IV	2.0	0.60	mg/L			04/02/18 11:11	1
Fluoride	0.032	U	0.10	0.032	mg/L			03/30/18 10:31	1
Sulfate	1.4	U	5.0	1.4	mg/L			03/27/18 06:55	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-08** Date Collected: 03/22/18 16:40

Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-12

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 23:03	
Arsenic	0.00097	T.	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 23:03	:
Barium	0.064		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 23:03	:
Beryllium	0.0014	1	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 23:03	
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 23:03	:
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 23:03	;
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 23:03	
_ead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 23:03	:
_ithium	0.011		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 23:03	:
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 23:03	
Selenium	0.00030	T.	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 23:03	
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 23:03	
Method: 6020 - Metals (ICP/ Analyte	Result	Qualifier	PQL	MDL		D	Prepared	Analyzed	Dil Fa
Boron	15		1.0		mg/L		03/31/18 13:33		10
Calcium	540		5.0	2.5	mg/L		03/31/18 13:33	04/10/18 21:55	10
Method: 7470A - Mercury (C	,					_			
Analyte		Qualifier	PQL	MDL		D	Prepared	Analyzed	Dil Fa
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 10:35	04/12/18 10:42	
General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	8100		50	34	mg/L			03/27/18 13:11	
Chloride	3200		160	48	mg/L			04/02/18 12:12	8
Fluoride	0.032	U	0.10	0.032	mg/L			03/30/18 10:35	
Sulfate	900		150	42	mg/L			03/27/18 07:47	3
Method: Field Sampling - Fi	eld Sampling								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Field pH	4.61				SU			03/22/18 16:40	

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: MW-09

Lab Sample ID: 400-151256-15

<b>Date</b>	<b>Collected:</b>	03/23/18	09:02
Date	Received:	03/23/18	17:05

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 23:16	
Arsenic	0.0022		0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 23:16	
Barium	0.093		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 23:16	
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 23:16	
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 23:16	
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 23:16	
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 23:16	
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 23:16	
Lithium	0.0056		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 23:16	
Molybdenum	0.0014	I	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 23:16	
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 23:16	
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 23:16	
Method: 6020 - Metals (ICP/N Analyte	Result	Qualifier	PQL		Unit	D	Prepared	Analyzed	Dil Fa
Boron	9.4		1.0	0.42	mg/L		03/31/18 13:33	04/10/18 22:09	10
Calcium	290		5.0	2.5	mg/L		03/31/18 13:33	04/10/18 22:09	10
Method: 7470A - Mercury (C	VAA)								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 12:09	04/11/18 15:12	
General Chemistry	Decult	O	DOI	MDI	11:4		Duamanad	Anahmad	Dil F.
Analyte		Qualifier	PQL		Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	1700		50		mg/L			03/27/18 12:35	
Chloride	2300		120		mg/L			04/02/18 12:14	6
Fluoride	0.032	U	0.10	0.032	J			03/30/18 12:50	
Sulfate	630		100	28	mg/L			04/03/18 10:25	2
Method: Field Sampling - Fie									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Field pH	6.4				SU			03/23/18 09:02	

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: EB-02

Date Collected: 03/23/18 08:05 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-16

Method: 6020 - Metals	s (ICP/MS) - Total Re	coverab	le						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 20:07	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 20:07	5
Barium	0.00049	U	0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 20:07	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:07	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 20:07	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:07	5
Calcium	0.13	U	0.25	0.13	mg/L		03/31/18 13:33	04/10/18 20:07	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 20:07	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 20:07	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 20:07	5
Lithium	0.0011	T	0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 20:07	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 20:07	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 20:07	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 20:07	5

Method: 7470A - Mercury (CVA	AA)								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 12:09	04/11/18 15:13	1

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			03/27/18 12:35	1
Chloride	0.90	IV	2.0	0.60	mg/L			04/02/18 11:11	1
Fluoride	0.032	U	0.10	0.032	mg/L			03/30/18 12:54	1
Sulfate	1.4	U	5.0	1.4	mg/L			04/03/18 09:55	1

**PQL** 

0.0025

**MDL** Unit

0.0010 mg/L

Client: Gulf Power Company Project/Site: CCR Smith Plant

Client Sample ID: FB-02

Date Collected: 03/23/18 07:55

Date Received: 03/23/18 17:05

Analyte

Antimony

Sulfate

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Result Qualifier

0.0010 U

1.4 U

TestAmerica Job ID: 400-151256-1 SDG: Ash Pond

Lab Sample ID: 400-151256-17

Matrix: Water

**Analyzed** 

04/03/18 09:55

. .

03/31/18 13:33 04/10/18 20:12

Prepared

D

Vater

5

Dil Fac 5

J

7

0

10

12

13

,					9				
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 20:12	5
Barium	0.00049	U	0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 20:12	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:12	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 20:12	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 20:12	5
Calcium	0.13	U	0.25	0.13	mg/L		03/31/18 13:33	04/10/18 20:12	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 20:12	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 20:12	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 20:12	5
Lithium	0.0017	1	0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 20:12	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 20:12	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 20:12	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 20:12	5
Method: 7470A - Mercury	(CVAA)								
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 12:09	04/11/18 15:15	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			03/27/18 12:35	1
Chloride	0.74	IV	2.0	0.60	mg/L			04/02/18 11:11	1
Fluoride	0.032	П	0.10	0.032	ma/l			03/30/18 12:57	1

5.0

1.4 mg/L

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: DUP-04 Date Collected: 03/23/18 08:02

Lab Sample ID: 400-151256-18 **Matrix: Water** 

Date Received: 03/23/18 17:05

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 23:21	5
Arsenic	0.0022		0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 23:21	5
Barium	0.094		0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 23:21	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 23:21	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 23:21	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 23:21	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 23:21	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 23:21	5
Lithium	0.0056		0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 23:21	5
Molybdenum	0.0013	1	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 23:21	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 23:21	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 23:21	5

Method: 6020 - Metals (ICP/MS)	) - Total Reco	verable - DL						
Analyte	Result Qu	ualifier PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	9.3	1.0	0.42	mg/L		03/31/18 13:33	04/10/18 22:13	100
Calcium	300	5.0	2.5	mg/L		03/31/18 13:33	04/10/18 22:13	100

Method: 7470A - Mercury (CVA	AA)									
Analyte	Result	Qualifier	PQL	MDL	Unit	D		Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		(	04/10/18 12:09	04/11/18 15:17	1

General Chemistry Analyte	Result Qualifie	er PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2900	50	34	mg/L			03/27/18 12:35	1
Chloride	2400	160	48	mg/L			04/04/18 09:42	80
Fluoride	0.032 U	0.10	0.032	mg/L			03/30/18 13:01	1
Sulfate	640	100	28	mg/L			04/03/18 10:27	20

# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

# **Qualifiers**

# **Metals**

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
1	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

# **General Chemistry**

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.
1	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
V	Indicates that the analyte was detected at or above the method detection limit in both the sample and the associated method blank and the value of 10 times the blank value was equal to or greater than the associated sample value.

# Glossary

RER

RPD TEF

**TEQ** 

RL

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

TestAmerica Pensacola

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TestAmerica Job ID: 400-151256-1 SDG: Ash Pond

Client Sample ID: MW-12

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collected: 03/20/18 13:29 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-1

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 20:34	DRE	TAL PEN
Total/NA	Prep	7470A			392228	03/31/18 15:08	DN1	TAL PEN
Total/NA	Analysis	7470A		1	392577	04/03/18 17:10	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391316	03/24/18 17:50	TET	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		5	392314	04/02/18 10:24	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:18	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	391402	03/26/18 08:23	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393575	03/20/18 13:29	AW	TAL PEN

**Client Sample ID: MW-03** Lab Sample ID: 400-151256-2

Date Collected: 03/20/18 17:20 **Matrix: Water** Date Received: 03/22/18 14:40

Date Neceived.	00/22/10 1	7.70						
Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 20:57	DRE	TAL PEN
Total/NA	Prep	7470A			392228	03/31/18 15:08	DN1	TAL PEN
Total/NA	Analysis	7470A		1	392577	04/03/18 17:12	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391316	03/24/18 17:50	TET	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:22	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	391402	03/26/18 08:23	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393575	03/20/18 17:20	AW	TAL PEN

**Client Sample ID: DUP-01** Lab Sample ID: 400-151256-3 Date Collected: 03/20/18 16:20 **Matrix: Water** 

Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 21:01	DRE	TAL PEN
Total/NA	Prep	7470A			392228	03/31/18 15:08	DN1	TAL PEN
Total/NA	Analysis	7470A		1	392577	04/03/18 17:14	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391316	03/24/18 17:50	TET	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:26	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	391402	03/26/18 08:23	RRC	TAL PEN

TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Client Sample ID: MW-02

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collected: 03/21/18 09:51 Date Received: 03/22/18 14:40 Lab Sample ID: 400-151256-4

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A	_		392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 21:06	DRE	TAL PEN
Total/NA	Prep	7470A			393327	04/10/18 10:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393751	04/12/18 09:56	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391438	03/26/18 12:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:30	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	391563	03/27/18 06:54	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393575	03/21/18 09:51	AW	TAL PEN

**Client Sample ID: MW-07** Lab Sample ID: 400-151256-5

Da

Pate Collected: 03/21/18 11:46										
Date Received:	03/22/18 1	4:40								
-	Batch	Batch		Dilution	Batch	Prepared				
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab		
Total Recoverable	Prep	3005A	DL		392227	03/31/18 13:33	DN1	TAL PEN		
Total Recoverable	Analysis	6020	DI	25	393503	04/10/18 21:33	DRE	TAI PEN		

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A	DL		392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	393503	04/10/18 21:33	DRE	TAL PEN
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 22:40	DRE	TAL PEN
Total/NA	Prep	7470A			393327	04/10/18 10:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393751	04/12/18 09:58	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391438	03/26/18 12:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		40	392343	04/02/18 11:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:42	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	391563	03/27/18 07:01	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393575	03/21/18 11:46	AW	TAL PEN

Client Sample ID: MW-06 Lab Sample ID: 400-151256-6 Date Collected: 03/21/18 13:24

Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A	DL		392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	393503	04/10/18 21:37	DRE	TAL PEN
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 22:45	DRE	TAL PEN
Total/NA	Prep	7470A			393327	04/10/18 10:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393751	04/12/18 10:00	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391578	03/27/18 13:42	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	392343	04/02/18 12:12	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:50	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	391563	03/27/18 07:39	RRC	TAL PEN

TestAmerica Pensacola

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TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

**Client Sample ID: MW-06** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collected: 03/21/18 13:24 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-6

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling			393575	03/21/18 13:24	AW	TAL PEN

Lab Sample ID: 400-151256-8 **Client Sample ID: MW-10** 

Date Collected: 03/22/18 10:52 Matrix: Water

Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A	DL		392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	200	393503	04/10/18 21:46	DRE	TAL PEN
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 22:54	DRE	TAL PEN
Total/NA	Prep	7470A			393327	04/10/18 10:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393751	04/12/18 10:35	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391575	03/27/18 13:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	392343	04/02/18 12:12	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	391874	03/28/18 14:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	391563	03/27/18 07:47	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393575	03/22/18 10:52	AW	TAL PEN

**Client Sample ID: FB-01** Lab Sample ID: 400-151256-10 Date Collected: 03/22/18 13:20

Date Received: 03/23/18 17:05

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 19:58	DRE	TAL PEN
Total/NA	Prep	7470A			393327	04/10/18 10:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393751	04/12/18 10:39	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391438	03/26/18 12:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392128	03/30/18 09:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	391563	03/27/18 06:55	RRC	TAL PEN

**Client Sample ID: EB-01** Lab Sample ID: 400-151256-11 Date Collected: 03/22/18 14:05

Date Received: 03/23/18 17:05

B T	Batch	Batch	D	Dilution	Batch	Prepared	A L 4	11-
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 20:03	DRE	TAL PEN
Total/NA	Prep	7470A			393327	04/10/18 10:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393751	04/12/18 10:41	JAP	TAL PEN

TestAmerica Pensacola

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**Matrix: Water** 

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1 SDG: Ash Pond

Client Sample ID: EB-01

Date Collected: 03/22/18 14:05 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-11

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C			391575	03/27/18 13:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392128	03/30/18 10:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	391563	03/27/18 06:55	RRC	TAL PEN

Lab Sample ID: 400-151256-12

**Prepared** 

or Analyzed

391575 03/27/18 13:11 RRC

392343 04/02/18 12:12 RRC

392128 03/30/18 10:35 BAB

393575 03/23/18 09:02 AW

391563

03/27/18 07:47 RRC

Analyst

DN1

DRE

JAP

Lab

TAL PEN

**Matrix: Water** 

Date Collected: 03/22/18 16:40 Date Received: 03/23/18 17:05

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Client Sample ID: MW-08

Dilution Batch Batch Batch Method Number Prep Type Type Run **Factor** Prep Total Recoverable 3005A DL 392227 03/31/18 13:33 Total Recoverable Analysis 6020 DL 100 393503 04/10/18 21:55 Total Recoverable 3005A Prep 392227 03/31/18 13:33 DN1 Total Recoverable Analysis 6020 5 393503 04/10/18 23:03 DRE Total/NA 7470A 393327 Prep 04/10/18 10:35 JAP Total/NA Analysis 7470A 1 393751 04/12/18 10:42

SM 2540C

SM 4500 CI- E

SM 4500 F C

SM 4500 SO4 E

Field Sampling

Analysis

Analysis

Analysis

Analysis

Analysis

Date Received: 03/23/18 17:05

Total/NA Analysis 393575 03/22/18 16:40 AW TAL PEN Field Sampling 1 Client Sample ID: MW-09 Lab Sample ID: 400-151256-15 Date Collected: 03/23/18 09:02 **Matrix: Water** 

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80

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Batch Ratch Dilution Batch **Prepared Prep Type** Type Method Run **Factor** Number or Analyzed Analyst Lab Total Recoverable Prep 3005A  $\overline{\mathsf{DL}}$ 392227 03/31/18 13:33 DN1 TAL PEN DL Total Recoverable Analysis 6020 100 393503 04/10/18 22:09 DRE TAL PEN Total Recoverable Prep 3005A 392227 03/31/18 13:33 DN1 TAL PEN Total Recoverable Analysis 6020 5 393503 04/10/18 23:16 DRE TAL PEN Total/NA 7470A 393404 04/10/18 12:09 .IAP TAL PEN Prep Total/NA Analysis 7470A 1 393589 04/11/18 15:12 JAP TAL PEN Total/NA SM 2540C TAL PEN Analysis 1 391566 03/27/18 12:35 RRC Total/NA Analysis SM 4500 CI- E 60 392343 04/02/18 12:14 RRC TAL PEN Total/NA SM 4500 F C Analysis 1 392160 03/30/18 12:50 BAB TAL PEN Total/NA Analysis SM 4500 SO4 E 20 04/03/18 10:25 RRC TAL PEN 392490

TestAmerica Pensacola

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1 SDG: Ash Pond

Lab Sample ID: 400-151256-16

Matrix: Water

Client Sample ID: EB-02
Date Collected: 03/23/18 08:05
Date Received: 03/23/18 17:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A		- <del></del> -	392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 20:07	DRE	TAL PEN
Total/NA	Prep	7470A			393404	04/10/18 12:09	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393589	04/11/18 15:13	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391566	03/27/18 12:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392160	03/30/18 12:54	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	392490	04/03/18 09:55	RRC	TAL PEN

Client Sample ID: FB-02 Lab Sample ID: 400-151256-17

Matrix: Water

Date Collected: 03/23/18 07:55 Date Received: 03/23/18 17:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 20:12	DRE	TAL PEN
Total/NA	Prep	7470A			393404	04/10/18 12:09	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393589	04/11/18 15:15	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391566	03/27/18 12:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	392343	04/02/18 11:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392160	03/30/18 12:57	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	392490	04/03/18 09:55	RRC	TAL PEN

Client Sample ID: DUP-04

Date Collected: 03/23/18 08:02

Lab Sample ID: 400-151256-18

Matrix: Water

Date Received: 03/23/18 17:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A	DL		392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	393503	04/10/18 22:13	DRE	TAL PEN
Total Recoverable	Prep	3005A			392227	03/31/18 13:33	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	393503	04/10/18 23:21	DRE	TAL PEN
Total/NA	Prep	7470A			393404	04/10/18 12:09	JAP	TAL PEN
Total/NA	Analysis	7470A		1	393589	04/11/18 15:17	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391566	03/27/18 12:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	392625	04/04/18 09:42	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392160	03/30/18 13:01	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	392490	04/03/18 10:27	RRC	TAL PEN

**Laboratory References:** 

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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#### **Metals**

**Prep Batch: 392227** 

Client: Gulf Power Company Project/Site: CCR Smith Plant

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
400-151256-1	MW-12	Total Recoverable	Water	3005A	_
400-151256-2	MW-03	Total Recoverable	Water	3005A	
400-151256-3	DUP-01	Total Recoverable	Water	3005A	
400-151256-4	MW-02	Total Recoverable	Water	3005A	
400-151256-5 - DL	MW-07	Total Recoverable	Water	3005A	
400-151256-5	MW-07	Total Recoverable	Water	3005A	
400-151256-6	MW-06	Total Recoverable	Water	3005A	
400-151256-6 - DL	MW-06	Total Recoverable	Water	3005A	
400-151256-8 - DL	MW-10	Total Recoverable	Water	3005A	
400-151256-8	MW-10	Total Recoverable	Water	3005A	
400-151256-10	FB-01	Total Recoverable	Water	3005A	
400-151256-11	EB-01	Total Recoverable	Water	3005A	
400-151256-12 - DL	MW-08	Total Recoverable	Water	3005A	
400-151256-12	MW-08	Total Recoverable	Water	3005A	
400-151256-15 - DL	MW-09	Total Recoverable	Water	3005A	
400-151256-15	MW-09	Total Recoverable	Water	3005A	
400-151256-16	EB-02	Total Recoverable	Water	3005A	
400-151256-17	FB-02	Total Recoverable	Water	3005A	
400-151256-18	DUP-04	Total Recoverable	Water	3005A	
400-151256-18 - DL	DUP-04	Total Recoverable	Water	3005A	
MB 400-392227/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-392227/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-151256-1 MS	MW-12	Total Recoverable	Water	3005A	
400-151256-1 MSD	MW-12	Total Recoverable	Water	3005A	

#### Prep Batch: 392228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	7470A	
400-151256-2	MW-03	Total/NA	Water	7470A	
400-151256-3	DUP-01	Total/NA	Water	7470A	
MB 400-392228/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-392228/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-151258-B-3-C MS	Matrix Spike	Total/NA	Water	7470A	
400-151258-B-3-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

#### Analysis Batch: 392577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	7470A	392228
400-151256-2	MW-03	Total/NA	Water	7470A	392228
400-151256-3	DUP-01	Total/NA	Water	7470A	392228
MB 400-392228/14-A	Method Blank	Total/NA	Water	7470A	392228
LCS 400-392228/15-A	Lab Control Sample	Total/NA	Water	7470A	392228
400-151258-B-3-C MS	Matrix Spike	Total/NA	Water	7470A	392228
400-151258-B-3-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	392228

#### **Prep Batch: 393327**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-4	MW-02	Total/NA	Water	7470A	
400-151256-5	MW-07	Total/NA	Water	7470A	
400-151256-6	MW-06	Total/NA	Water	7470A	
400-151256-8	MW-10	Total/NA	Water	7470A	

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TestAmerica Job ID: 400-151256-1

7470A

Project/Site: CCR Smith Plant

Prep Batch: 393327 (Continued)

Matrix Spike Duplicate

Client: Gulf Power Company

# **Metals (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-10	FB-01	Total/NA	Water	7470A	
400-151256-11	EB-01	Total/NA	Water	7470A	
400-151256-12	MW-08	Total/NA	Water	7470A	
MB 400-393327/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-393327/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-151810-D-1-B MS	Matrix Spike	Total/NA	Water	7470A	

Total/NA

Water

#### Prep Batch: 393404

400-151810-D-1-C MSD

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-15	MW-09	Total/NA	Water	7470A	
400-151256-16	EB-02	Total/NA	Water	7470A	
400-151256-17	FB-02	Total/NA	Water	7470A	
400-151256-18	DUP-04	Total/NA	Water	7470A	
MB 400-393404/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-393404/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-151280-B-1-C MS	Matrix Spike	Total/NA	Water	7470A	
400-151280-B-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

#### Analysis Batch: 393503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total Recoverable	Water	6020	392227
400-151256-2	MW-03	Total Recoverable	Water	6020	392227
400-151256-3	DUP-01	Total Recoverable	Water	6020	392227
400-151256-4	MW-02	Total Recoverable	Water	6020	392227
400-151256-5 - DL	MW-07	Total Recoverable	Water	6020	392227
400-151256-5	MW-07	Total Recoverable	Water	6020	392227
400-151256-6 - DL	MW-06	Total Recoverable	Water	6020	392227
400-151256-6	MW-06	Total Recoverable	Water	6020	392227
400-151256-8 - DL	MW-10	Total Recoverable	Water	6020	392227
400-151256-8	MW-10	Total Recoverable	Water	6020	392227
400-151256-10	FB-01	Total Recoverable	Water	6020	392227
400-151256-11	EB-01	Total Recoverable	Water	6020	392227
400-151256-12 - DL	MW-08	Total Recoverable	Water	6020	392227
400-151256-12	MW-08	Total Recoverable	Water	6020	392227
400-151256-15 - DL	MW-09	Total Recoverable	Water	6020	392227
400-151256-15	MW-09	Total Recoverable	Water	6020	392227
400-151256-16	EB-02	Total Recoverable	Water	6020	392227
400-151256-17	FB-02	Total Recoverable	Water	6020	392227
400-151256-18 - DL	DUP-04	Total Recoverable	Water	6020	392227
400-151256-18	DUP-04	Total Recoverable	Water	6020	392227
MB 400-392227/1-A ^5	Method Blank	Total Recoverable	Water	6020	392227
LCS 400-392227/2-A	Lab Control Sample	Total Recoverable	Water	6020	392227
400-151256-1 MS	MW-12	Total Recoverable	Water	6020	392227
400-151256-1 MSD	MW-12	Total Recoverable	Water	6020	392227

#### **Analysis Batch: 393589**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-15	MW-09	Total/NA	Water	7470A	393404
400-151256-16	EB-02	Total/NA	Water	7470A	393404
400-151256-17	FB-02	Total/NA	Water	7470A	393404

TestAmerica Pensacola

SDG: Ash Pond

Project/Site: CCR Smith Plant

Client: Gulf Power Company

**Metals (Continued)** 

**Analysis Batch: 393589 (Continued)** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-18	DUP-04	Total/NA	Water	7470A	393404
MB 400-393404/14-A	Method Blank	Total/NA	Water	7470A	393404
LCS 400-393404/15-A	Lab Control Sample	Total/NA	Water	7470A	393404
400-151280-B-1-C MS	Matrix Spike	Total/NA	Water	7470A	393404
400-151280-B-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	393404

Analysis Batch: 393751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-4	MW-02	Total/NA	Water	7470A	393327
400-151256-5	MW-07	Total/NA	Water	7470A	393327
400-151256-6	MW-06	Total/NA	Water	7470A	393327
400-151256-8	MW-10	Total/NA	Water	7470A	393327
400-151256-10	FB-01	Total/NA	Water	7470A	393327
400-151256-11	EB-01	Total/NA	Water	7470A	393327
400-151256-12	MW-08	Total/NA	Water	7470A	393327
MB 400-393327/14-A	Method Blank	Total/NA	Water	7470A	393327
LCS 400-393327/15-A	Lab Control Sample	Total/NA	Water	7470A	393327
400-151810-D-1-B MS	Matrix Spike	Total/NA	Water	7470A	393327
400-151810-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	393327

**General Chemistry** 

**Analysis Batch: 391316** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	SM 2540C	
400-151256-2	MW-03	Total/NA	Water	SM 2540C	
400-151256-3	DUP-01	Total/NA	Water	SM 2540C	
MB 400-391316/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-391316/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-151170-A-9 DU	Duplicate	Total/NA	Water	SM 2540C	

**Analysis Batch: 391402** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	SM 4500 SO4 E	
400-151256-2	MW-03	Total/NA	Water	SM 4500 SO4 E	
400-151256-3	DUP-01	Total/NA	Water	SM 4500 SO4 E	
MB 400-391402/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-391402/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-391402/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-151248-G-1 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-151248-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

**Analysis Batch: 391438** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-4	MW-02	Total/NA	Water	SM 2540C	_
400-151256-5	MW-07	Total/NA	Water	SM 2540C	
400-151256-10	FB-01	Total/NA	Water	SM 2540C	
MB 400-391438/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-391438/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-151189-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

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# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

#### **General Chemistry (Continued)**

#### **Analysis Batch: 391438 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151191-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 391563**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-4	MW-02	Total/NA	Water	SM 4500 SO4 E	-
400-151256-5	MW-07	Total/NA	Water	SM 4500 SO4 E	
400-151256-6	MW-06	Total/NA	Water	SM 4500 SO4 E	
400-151256-8	MW-10	Total/NA	Water	SM 4500 SO4 E	
400-151256-10	FB-01	Total/NA	Water	SM 4500 SO4 E	
400-151256-11	EB-01	Total/NA	Water	SM 4500 SO4 E	
400-151256-12	MW-08	Total/NA	Water	SM 4500 SO4 E	
MB 400-391563/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-391563/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-391563/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-150822-G-1 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-150822-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	
400-151209-G-1 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-151209-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

#### Analysis Batch: 391566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-15	MW-09	Total/NA	Water	SM 2540C	
400-151256-16	EB-02	Total/NA	Water	SM 2540C	
400-151256-17	FB-02	Total/NA	Water	SM 2540C	
400-151256-18	DUP-04	Total/NA	Water	SM 2540C	
MB 400-391566/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-391566/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-151138-B-47 DU	Duplicate	Total/NA	Water	SM 2540C	
400-151322-D-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 391575**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-8	MW-10	Total/NA	Water	SM 2540C	
400-151256-11	EB-01	Total/NA	Water	SM 2540C	
400-151256-12	MW-08	Total/NA	Water	SM 2540C	
MB 400-391575/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-391575/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-151170-A-23 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 391578**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-6	MW-06	Total/NA	Water	SM 2540C	
MB 400-391578/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-391578/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-151322-A-6 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 391874**

Lab Sample ID 400-151256-1	Client Sample ID  MW-12	Prep Type Total/NA	Matrix Water	Method SM 4500 F C	Prep Batch
400-151256-2	MW-03	Total/NA	Water	SM 4500 F C	
400-151256-3	DUP-01	Total/NA	Water	SM 4500 F C	

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TestAmerica Job ID: 400-151256-1

Client: Gulf Power Company Project/Site: CCR Smith Plant

#### **General Chemistry (Continued)**

#### **Analysis Batch: 391874 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-4	MW-02	Total/NA	Water	SM 4500 F C	
400-151256-5	MW-07	Total/NA	Water	SM 4500 F C	
400-151256-6	MW-06	Total/NA	Water	SM 4500 F C	
400-151256-8	MW-10	Total/NA	Water	SM 4500 F C	
MB 400-391874/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-391874/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-150860-A-7 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-150860-A-7 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-151256-5 DU	MW-07	Total/NA	Water	SM 4500 F C	

#### **Analysis Batch: 392128**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-10	FB-01	Total/NA	Water	SM 4500 F C	-
400-151256-11	EB-01	Total/NA	Water	SM 4500 F C	
400-151256-12	MW-08	Total/NA	Water	SM 4500 F C	
MB 400-392128/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-392128/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
660-86263-C-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
660-86263-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
660-86302-C-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

#### **Analysis Batch: 392160**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-15	MW-09	Total/NA	Water	SM 4500 F C	
400-151256-16	EB-02	Total/NA	Water	SM 4500 F C	
400-151256-17	FB-02	Total/NA	Water	SM 4500 F C	
400-151256-18	DUP-04	Total/NA	Water	SM 4500 F C	
MB 400-392160/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-392160/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-151514-A-4 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-151514-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-151335-B-2 DU	Duplicate	Total/NA	Water	SM 4500 F C	

#### Analysis Batch: 392314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	SM 4500 CI- E	
MB 400-392314/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-392314/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
MRL 400-392314/3	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-150861-A-7 MS	Matrix Spike	Total/NA	Water	SM 4500 CI- E	
400-150861-A-7 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CI- E	

#### Analysis Batch: 392343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-2	MW-03	Total/NA	Water	SM 4500 CI- E	
400-151256-3	DUP-01	Total/NA	Water	SM 4500 CI- E	
400-151256-4	MW-02	Total/NA	Water	SM 4500 CI- E	
400-151256-5	MW-07	Total/NA	Water	SM 4500 CI- E	
400-151256-6	MW-06	Total/NA	Water	SM 4500 CI- E	
400-151256-8	MW-10	Total/NA	Water	SM 4500 CI- E	
400-151256-10	FB-01	Total/NA	Water	SM 4500 CI- E	

TestAmerica Pensacola

SDG: Ash Pond

# Project/Site: CCR Smith Plant

Client: Gulf Power Company

#### **General Chemistry (Continued)**

#### **Analysis Batch: 392343 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-11	EB-01	Total/NA	Water	SM 4500 CI- E	-
400-151256-12	MW-08	Total/NA	Water	SM 4500 CI- E	
400-151256-15	MW-09	Total/NA	Water	SM 4500 CI- E	
400-151256-16	EB-02	Total/NA	Water	SM 4500 CI- E	
400-151256-17	FB-02	Total/NA	Water	SM 4500 CI- E	
MB 400-392343/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-392343/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
MRL 400-392343/3	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-151256-2 MS	MW-03	Total/NA	Water	SM 4500 CI- E	
400-151256-2 MSD	MW-03	Total/NA	Water	SM 4500 CI- E	
400-151256-4 MS	MW-02	Total/NA	Water	SM 4500 CI- E	
400-151256-4 MSD	MW-02	Total/NA	Water	SM 4500 CI- E	

#### Analysis Batch: 392490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-15	MW-09	Total/NA	Water	SM 4500 SO4 E	
400-151256-16	EB-02	Total/NA	Water	SM 4500 SO4 E	
400-151256-17	FB-02	Total/NA	Water	SM 4500 SO4 E	
400-151256-18	DUP-04	Total/NA	Water	SM 4500 SO4 E	
MB 400-392490/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-392490/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-392490/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-151335-B-1 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-151335-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

#### **Analysis Batch: 392625**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-18	DUP-04	Total/NA	Water	SM 4500 CI- E	
MB 400-392625/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-392625/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
MRL 400-392625/3	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-151496-C-4 MS	Matrix Spike	Total/NA	Water	SM 4500 CI- E	
400-151496-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CI- E	

#### Field Service / Mobile Lab

#### Analysis Batch: 393575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	Field Sampling	
400-151256-2	MW-03	Total/NA	Water	Field Sampling	
400-151256-4	MW-02	Total/NA	Water	Field Sampling	
400-151256-5	MW-07	Total/NA	Water	Field Sampling	
400-151256-6	MW-06	Total/NA	Water	Field Sampling	
400-151256-8	MW-10	Total/NA	Water	Field Sampling	
400-151256-12	MW-08	Total/NA	Water	Field Sampling	
400-151256-15	MW-09	Total/NA	Water	Field Sampling	

Project/Site: CCR Smith Plant

Client: Gulf Power Company

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-392227/1-A ^5

**Matrix: Water** 

**Analysis Batch: 393503** 

**Client Sample ID: Method Blank Prep Type: Total Recoverable** 

Prep Batch: 392227

	MB	MR							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		03/31/18 13:33	04/10/18 19:45	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		03/31/18 13:33	04/10/18 19:45	5
Barium	0.00049	U	0.0025	0.00049	mg/L		03/31/18 13:33	04/10/18 19:45	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 19:45	5
Boron	0.021	U	0.050	0.021	mg/L		03/31/18 13:33	04/10/18 19:45	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		03/31/18 13:33	04/10/18 19:45	5
Calcium	0.13	U	0.25	0.13	mg/L		03/31/18 13:33	04/10/18 19:45	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		03/31/18 13:33	04/10/18 19:45	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		03/31/18 13:33	04/10/18 19:45	5
Lead	0.00035	U	0.0013	0.00035	mg/L		03/31/18 13:33	04/10/18 19:45	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		03/31/18 13:33	04/10/18 19:45	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		03/31/18 13:33	04/10/18 19:45	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		03/31/18 13:33	04/10/18 19:45	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		03/31/18 13:33	04/10/18 19:45	5
I and the second									

MD MD

Lab Sample ID: LCS 400-392227/2-A

**Matrix: Water** 

Analysis Batch: 393503

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

Prep Batch: 392227

Analysis Batch: 393503	Spike	LCS L	cs			%Rec.
Analyte	Added	Result Q	ualifier Un	it D	%Rec	Limits
Antimony	0.0500	0.0510	mg	/L	102	80 - 120
Arsenic	0.0500	0.0486	mg	/L	97	80 - 120
Barium	0.0500	0.0499	mg	/L	100	80 - 120
Beryllium	0.0500	0.0495	mg	/L	99	80 - 120
Boron	0.100	0.0997	mg	/L	100	80 - 120
Cadmium	0.0500	0.0503	mg	/L	101	80 - 120
Calcium	5.00	5.00	mg	/L	100	80 - 120
Chromium	0.0500	0.0504	mg	/L	101	80 - 120
Cobalt	0.0500	0.0505	mg	/L	101	80 - 120
Lead	0.0500	0.0495	mg	/L	99	80 - 120
Lithium	0.0500	0.0478	mg	/L	96	80 - 120
Molybdenum	0.0500	0.0499	mg	/L	100	80 - 120
Selenium	0.0500	0.0481	mg	/L	96	80 - 120
Thallium	0.0100	0.00984	mg	/L	98	80 - 120

Lab Sample ID: 400-151256-1 MS

**Matrix: Water** 

**Analysis Batch: 393503** 

Client Sample ID: MW-12 **Prep Type: Total Recoverable** 

Prep Batch: 392227 Spike MS MS Sample Sample %Rec. **Analyte** Result Qualifier Added Result Qualifier Unit D %Rec Limits Antimony 0.0010 U 0.0500 0.0528 mg/L 106 75 - 125 Arsenic 0.00046 U 0.0500 0.0497 75 - 125 mg/L 99 Barium 0.013 0.0500 0.0637 mg/L 101 75 - 125 Beryllium 0.00034 U 0.0500 0.0512 mg/L 102 75 - 125 Boron 0.072 0.100 0.186 mg/L 113 75 - 125 Cadmium 0.00034 U 0.0500 101 0.0506 mg/L 75 - 125 Calcium 34 5.00 39.1 mg/L 98 75 - 125 0.0500 Chromium 0.0011 U 0.0512 mg/L 102 75 - 125

TestAmerica Pensacola

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Pond

#### Method: 6020 - Metals (ICP/MS) (Continued)

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Lab Sample ID: 400-151256-1 MS Client Sample ID: MW-12 **Matrix: Water Prep Type: Total Recoverable** Prep Batch: 392227 **Analysis Batch: 393503** MS MS Sample Sample Spike %Rec. Result Qualifier Added Analyte Result Qualifier Unit D %Rec Limits Cobalt 0.00040 U 0.0500 0.0515 103 75 - 125 mg/L Lead 0.00035 U 0.0500 0.0489 mg/L 98 75 - 125 Lithium 0.016 0.0500 0.0824 J3 132 75 - 125 mg/L Molybdenum 0.00085 U 0.0500 0.0493 mg/L 99 75 - 125 Selenium 0.00024 U 0.0500 0.0494 mg/L 99 75 - 125 Thallium 0.000085 U 0.0100 0.00995 mg/L 100 75 - 125

Lab Sample ID: 400-151256-1 MSD

Matrix: Water

Analysis Batch: 393503

Client Sample ID: MW-12

Prep Type: Total Recoverable

Prep Batch: 392227

Analysis Batch: 393503									Prep Ba	atch: 39	92227
•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.0010	U	0.0500	0.0523		mg/L		105	75 - 125	1	20
Arsenic	0.00046	U	0.0500	0.0499		mg/L		100	75 - 125	0	20
Barium	0.013		0.0500	0.0648		mg/L		104	75 - 125	2	20
Beryllium	0.00034	U	0.0500	0.0498		mg/L		100	75 - 125	3	20
Boron	0.072		0.100	0.177		mg/L		104	75 - 125	5	20
Cadmium	0.00034	U	0.0500	0.0509		mg/L		102	75 - 125	1	20
Calcium	34		5.00	39.5		mg/L		106	75 - 125	1	20
Chromium	0.0011	U	0.0500	0.0521		mg/L		104	75 - 125	2	20
Cobalt	0.00040	U	0.0500	0.0524		mg/L		105	75 - 125	2	20
Lead	0.00035	U	0.0500	0.0480		mg/L		96	75 - 125	2	20
Lithium	0.016		0.0500	0.0778		mg/L		123	75 - 125	6	20
Molybdenum	0.00085	U	0.0500	0.0493		mg/L		99	75 - 125	0	20
Selenium	0.00024	U	0.0500	0.0483		mg/L		97	75 - 125	2	20
Thallium	0.000085	U	0.0100	0.00972		mg/L		97	75 - 125	2	20

#### Method: 7470A - Mercury (CVAA)

**Analysis Batch: 392577** 

Lab Sample ID: MB 400-392228/14-A

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 392577

Prep Batch: 392228

MB I

	IVIB	IVIB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		03/31/18 15:08	04/03/18 15:10	1

Lab Sample ID: LCS 400-392228/15-A	Client Sample ID: Lab Control Sample						Sample	
Matrix: Water						Prep Type: To	otal/NA	
Analysis Batch: 392577							Prep Batch:	392228
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Mercury	0.00101	0.00107		mg/L		106	80 - 120	

Lab Sample ID: 400-151258-B-3-C MS

Matrix: Water

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Mercury 0.000070 U 0.00201 0.00196 mg/L 80 - 120 97

TestAmerica Pensacola

4/13/2018

Prep Batch: 392228

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

Lab Sample ID: 400-151258-B-3-D MSD **Matrix: Water** 

Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Analysis Batch: 392577** 

Sample Sample Spike MSD MSD Prep Batch: 392228 %Rec. **RPD** 

Mercury

Analyte

Result Qualifier Added Result Qualifier 0.000070 U 0.00201 0.00205

%Rec Limits RPD Limit 102 80 - 120 20

Lab Sample ID: MB 400-393327/14-A

**Matrix: Water** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 393327

Analysis Batch: 393751

MB MB MDL Unit PQL

Unit

mg/L

Result Qualifier Analyte Prepared Analyzed Dil Fac 04/10/18 08:55 04/12/18 09:06 0.000070 U 0.00020 Mercury 0.000070 mg/L

Lab Sample ID: LCS 400-393327/15-A **Client Sample ID: Lab Control Sample Matrix: Water** 

Prep Type: Total/NA Prep Batch: 393327

**Analysis Batch: 393751** 

LCS LCS %Rec.

Spike Added Result Qualifier D %Rec Limits **Analyte** Unit Mercury 0.00101 0.00106 mg/L 105 80 - 120

Lab Sample ID: 400-151810-D-1-B MS Client Sample ID: Matrix Spike

**Matrix: Water** 

**Analysis Batch: 393751** 

Prep Type: Total/NA

Prep Batch: 393327

Spike MS MS %Rec. Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Mercury 0.000070 U 0.00101 0.000977 mg/L 80 - 120

Lab Sample ID: 400-151810-D-1-C MSD **Matrix: Water** 

Analysis Batch: 393751

**Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Prep Batch: 393327** 

MSD MSD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit Limits RPD Limit %Rec Mercury 0.000070 U 0.00101 0.000948 mg/L 80 - 120

Lab Sample ID: MB 400-393404/14-A

**Matrix: Water** 

**Analysis Batch: 393589** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 393404

MB MB

Analyte Result Qualifier **PQL** MDL Unit Prepared Analyzed Dil Fac 04/10/18 12:08 04/11/18 15:00 Mercury 0.0000777 I 0.00020 0.000070 mg/L

0.00101

Lab Sample ID: LCS 400-393404/15-A

**Matrix: Water** 

Client Sample ID: Lab Control Sample

100

mg/L

Prep Type: Total/NA **Prep Batch: 393404** 

**Analysis Batch: 393589** Spike LCS LCS Added Result Qualifier Analyte Unit %Rec

0.00101

%Rec.

Limits 80 - 120

Mercury

**Matrix: Water** 

Lab Sample ID: 400-151280-B-1-C MS

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA **Prep Batch: 393404** 

**Analysis Batch: 393589** Sample Sample Spike MS MS

%Rec.

Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Mercury 0.000070 U 0.00201 0.00198 mg/L 98 80 - 120

TestAmerica Pensacola

TestAmerica Job ID: 400-151256-1

Client: Gulf Power Company Project/Site: CCR Smith Plant

Lab Sample ID: MB 400-391316/1

Lab Sample ID: 400-151170-A-9 DU

Analysis Batch: 391438

Total Dissolved Solids

SDG: Ash Pond

Client Sample ID: Method Blank

03/24/18 17:50

**Client Sample ID: Duplicate** 

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 400-15128			Client Sa	mple II	D: Mat	rix Spil	ke Dup	licate			
Matrix: Water								P	rep Ty	pe: Tot	al/NA
Analysis Batch: 393589								1	Prep Ba	atch: 39	3404
	Sample	Sample	Spike	MSD	MSD			9	%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D %R	lec I	_imits	RPD	Limit
Mercury	0.000070	U	0.00201	0.00193		mg/L		96 8	30 - 120	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Matrix: Water Analysis Batch: 391316							Pr	ep Type: To	tal/NA
	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Lab Sample ID: LCS 400-391316/2	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 391316	

3.4 mg/L

7 maryolo Batom oo lo lo			_			
	Spike	LCS LC	S		%Rec.	
Analyte	Added	Result Qu	ualifier Unit	D %Rec	Limits	
Total Dissolved Solids	293	274	ma/L	94	78 - 122	

Matrix: Water Analysis Batch: 391316							Prep Type	: Tota	al/NA
•	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Total Dissolved Solids	92		 92.0		mg/L			0	5

Lab Sample ID: MB 400-391438/1	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

	MB M	1B							
Analyte	Result Q	<b>Qualifier</b>	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4 11	1	5.0	3.4	ma/l			03/26/18 12:25	

Lab Sample ID: LCS 400-391438/2			Client Sample ID: Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 391438			
	Snike	LCS LCS	%Rec

-	Spik	e LCS	LCS			%Rec.	
Analyte	Adde	d Result	Qualifier	Unit D	%Rec	Limits	
Total Dissolved Solids	29	3 246		mg/L	84	78 - 122	 

Lab Sample ID: 400-151189-B-1 DU	Client Sample ID: Duplicate
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 391438									
-	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Total Dissolved Solids	3.4	U	3.4	U	mg/L			NC	5

4/13/2018

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-1

SDG: Ash Pond

#### Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 400-151191-B-1 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA **Analysis Batch: 391438** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit Total Dissolved Solids 46.0 46 mg/L

Lab Sample ID: MB 400-391566/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 391566** 

MB MB

Result Qualifier POI MDL Unit Analyte Analyzed Dil Fac Prepared Total Dissolved Solids 5.0 03/27/18 12:35 3.4 U 3.4 mg/L

Lab Sample ID: LCS 400-391566/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 391566

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Total Dissolved Solids 293 246 mg/L 78 - 122

Lab Sample ID: 400-151138-B-47 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 391566** 

DU DU Sample Sample RPD Result Qualifier Result Qualifier Unit **RPD** Limit Total Dissolved Solids 160 160 mg/L

Lab Sample ID: 400-151322-D-1 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 391566

וום וום RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit RPD Limit Total Dissolved Solids 210 206 mg/L

Lab Sample ID: MB 400-391575/1 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 391575** 

MB MB Analyte Result Qualifier PQL MDL Unit Dil Fac Prepared Analyzed **Total Dissolved Solids** 34 U 5.0 03/27/18 13:11 3.4 mg/L

Lab Sample ID: LCS 400-391575/2 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 391575

Spike LCS LCS %Rec. Added Result Qualifier Limite Analyte Unit %Rec 293 Total Dissolved Solids 280 mg/L 96 78 - 122

Lab Sample ID: 400-151170-A-23 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 391575** 

DU DU RPD Sample Sample Result Qualifier Result Qualifier RPD Limit Analyte Unit D **Total Dissolved Solids** 76 76.0 0 mg/L

TestAmerica Pensacola

TestAmerica Job ID: 400-151256-1

Client Sample ID: Method Blank

SDG: Ash Pond

Prep Type: Total/NA

Lab Sample ID: MB 400-391578/1

**Matrix: Water** 

**Analysis Batch: 391578** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

MB MB

Analyte Result Qualifier PQL **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids 3.4 U 5.0 3.4 mg/L 03/27/18 13:42

**Client Sample ID: Lab Control Sample** 

Lab Sample ID: LCS 400-391578/2 **Matrix: Water** 

Prep Type: Total/NA

**Analysis Batch: 391578** 

LCS LCS Spike %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 293 Total Dissolved Solids 268 mg/L 91 78 - 122

Lab Sample ID: 400-151322-A-6 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 391578** 

DU DU RPD Sample Sample Result Qualifier Result Qualifier RPD Limit Analyte Unit **Total Dissolved Solids** 230 228 mg/L

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-392314/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392314** 

MR MR

Analyte Result Qualifier **PQL** MDL Unit **Prepared** Analyzed Dil Fac Chloride 1.54 2.0 0.60 mg/L 04/02/18 09:28

Lab Sample ID: LCS 400-392314/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 392314

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Chloride 30.0 31.3 mg/L 104 90 - 110

Lab Sample ID: MRL 400-392314/3 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 392314** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit Limits D %Rec Chloride 2 00 2.63 mg/L 131 50 - 150

Lab Sample ID: 400-150861-A-7 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 392314

Spike MS MS Sample Sample %Rec. Added Limits Result Qualifier Result Qualifier Analyte Unit %Rec 6.9 V 10.0 Chloride 17.2 mg/L 103 73 - 120

#### Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: 400-150861-A-7 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 392314** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

	Sample	Sample	Spike	INIOD	MOD				%Rec.		KPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	6.9	V	10.0	17.1		mg/L		101	73 - 120	1	8	

Lab Sample ID: MB 400-392343/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

MB MB Result Qualifier PQL MDL Unit Analyte Analyzed Dil Fac Prepared Chloride 1.46 Ī 2.0 0.60 mg/L 04/02/18 11:09 Chloride 1.46 I 2.0 0.60 mg/L 04/02/18 11:09

Lab Sample ID: LCS 400-392343/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

LCS LCS Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits Chloride 30.0 31.9 mg/L 106 90 - 110 Chloride 30.0 31.9 106 90 - 110 mg/L

Lab Sample ID: MRL 400-392343/3 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

		Spike	WIKL	WIKL				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride		2.00	2.47		mg/L		123	50 - 150	
Chloride		2.00	2.47		mg/L		123	50 - 150	

Lab Sample ID: 400-151256-2 MS Client Sample ID: MW-03 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier Limits Unit D %Rec 11 V Chloride 10.0 21.1 mg/L 102 73 - 120 Chloride 11 V 10.0 21.1 mg/L 102 73 - 120

Lab Sample ID: 400-151256-2 MSD Client Sample ID: MW-03 **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 392343

, , , , , , , , , , , , , , , , , , , ,	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	11	V	10.0	21.2		mg/L		103	73 - 120	0	8
Chloride	11	V	10.0	21.2		ma/L		103	73 - 120	0	8

Lab Sample ID: 400-151256-4 MS Client Sample ID: MW-02 Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 392343

, many one Date in Colo ic	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	9.3	V	10.0	19.7		mg/L		104	73 - 120	 -	_
Chloride	9.3	V	10.0	19.7		mg/L		104	73 - 120		

TestAmerica Pensacola

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4/13/2018

Client: Gulf Power Company Project/Site: CCR Smith Plant

#### Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: 400-151256-4 MSD	Client Sample ID: MW-02
Matrix: Water	Prep Type: Total/NA
Analysis Ratch: 3923/3	

SIS Batch: 392343

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	9.3	$\overline{V}$	10.0	20.7		mg/L		114	73 - 120	5	8	
Chloride	9.3	V	10.0	20.7		mg/L		114	73 - 120	5	8	

Lab Sample ID: MB 400-392625/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392625** 

MB MB Analyte Result Qualifier **PQL MDL** Unit **Prepared** Analyzed Dil Fac 2.0 Chloride 1.24 0.60 mg/L 04/04/18 09:09

Lab Sample ID: LCS 400-392625/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392625** 

LCS LCS Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits 30.0 Chloride 30.7 mg/L 102 90 - 110

Lab Sample ID: MRL 400-392625/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392625** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 2.00 2.66 mg/L 133 50 - 150

Lab Sample ID: 400-151496-C-4 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 392625

MS MS Sample Sample Spike %Rec. Result Qualifier Added Result Qualifier Analyte %Rec Limits Unit Chloride 22 10.0 32.2 98 73 - 120 mg/L

Lab Sample ID: 400-151496-C-4 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 392625** 

Sample Sample Spike MSD MSD %Rec. **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Chloride 22 10.0 32.1 mg/L 97 73 - 120

#### Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-391874/3 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 391874** 

MB MB Analyte Result Qualifier PQL **MDL** Unit Prepared Analyzed Dil Fac Fluoride 0.032 U 0.10 0.032 mg/L 03/28/18 13:36

TestAmerica Pensacola

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Client: Gulf Power Company Project/Site: CCR Smith Plant

**Matrix: Water** 

Analyte

Fluoride

**Analysis Batch: 392128** 

TestAmerica Job ID: 400-151256-1 SDG: Ash Pond

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#### Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 400-3	391874/4					Cli	ent Sai	mple ID	: Lab Con	trol Sa	ample
Matrix: Water								-	Prep Typ		
Analysis Batch: 391874											
-			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Fluoride			4.00	4.18		mg/L		105	90 - 110		
- Lab Sample ID: 400-15086	60-A-7 MS						CI	ient Sa	mple ID: I	Matrix	Spike
Matrix: Water									Prep Typ		_
Analysis Batch: 391874											
•	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Fluoride	0.080		1.00	0.710	J3	mg/L		63	75 - 125		
Lab Sample ID: 400-15086 Matrix: Water	60-A-7 MSD					Clien	t Samp	le ID: N	latrix Spik Prep Typ		
Analysis Batch: 391874											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limi
Fluoride	0.080		1.00	0.710	J3	mg/L		63	75 - 125	0	
_ Lab Sample ID: 400-15125	6-5 DU							Clie	ent Sampl	e ID: N	IW-07
Matrix: Water									Prep Typ		
Analysis Batch: 391874											
	Sample	Sample		DU	DU						RPI
Analyte	Result	Qualifier		Result	Qualifier	Unit	D			RPD	Limi
										NC	
Fluoride	0.032	U		0.032	U	mg/L				INC	_
- -		U		0.032	U	mg/L	Clie	ent Sam	nple ID: Mo		
Fluoride Lab Sample ID: MB 400-39 Matrix: Water		U		0.032	U	mg/L	Clie	ent Sam	nple ID: Mo	ethod	Blank
Lab Sample ID: MB 400-39 Matrix: Water		U		0.032	U	mg/L	Clie	ent Sam	nple ID: Mo Prep Typ	ethod	Blank
Lab Sample ID: MB 400-39		МВ МВ		0.032	U	mg/L	Clie	ent Sam		ethod	Blank
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128	92128/3				U MDL Unit	mg/L		ent Sam	Prep Typ	ethod be: Tot	Blank :al/N <i>A</i>
Lab Sample ID: MB 400-39 Matrix: Water	92128/3 Re	мв мв		PQL I						ethod be: Tot	Blank
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128 Analyte	<b>92128/3</b> Re	MB MB esult Qualifier		PQL I	MDL Unit		<u>D</u> P	repared	Prep Typ	ethod be: Tot ed 09:27	Blani al/NA Dil Fa
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3	<b>92128/3</b> Re	MB MB esult Qualifier		PQL 0.10 0	MDL Unit .032 mg/L		<u>D</u> P	repared	Analyz 03/30/18 2: Lab Con Prep Typ	ethod be: Tot ed 09:27	Blank al/NA Dil Fac
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128	<b>92128/3</b> Re	MB MB esult Qualifier	Spike	PQL 0.10 0	MDL Unit mg/L	Cli	D P	repared mple ID	Analyz 03/30/18 C: Lab Con Prep Typ %Rec.	ethod be: Tot ed 09:27	Blank al/NA Dil Fac
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128  Analyte	<b>92128/3</b> Re	MB MB esult Qualifier	Spike Added	PQL 0.10 0	MDL Unit .032 mg/L	Cli	<u>D</u> P	repared mple ID %Rec	Analyz 03/30/18 C: Lab Con Prep Typ %Rec. Limits	ethod be: Tot ed 09:27	Blank al/NA Dil Fac
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128	<b>92128/3</b> Re	MB MB esult Qualifier	Spike	PQL 0.10 0	MDL Unit mg/L	Cli	D P	repared mple ID	Analyz 03/30/18 C: Lab Con Prep Typ %Rec.	ethod be: Tot ed 09:27	Blank al/NA Dil Fac
Lab Sample ID: MB 400-38 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: 660-86263 Matrix: Water	92128/3 Re 0 892128/4	MB MB esult Qualifier	Spike Added	PQL 0.10 0	MDL Unit mg/L	Cli	D P	mple ID  WRec 105	Analyz 03/30/18 C: Lab Con Prep Typ %Rec. Limits	ethod oe: Tot eed 09:27 trol Sa be: Tot	Blank al/NA Dil Fac ample al/NA
Lab Sample ID: MB 400-39 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: 660-86263	92128/3  Re 0 892128/4	MB MB esult Qualifier .032 U	Spike Added 4.00	PQL 0.10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MDL Unit .032 mg/L LCS Qualifier	Cli	D P	mple ID  WRec 105	Analyz  O3/30/18  C: Lab Con Prep Typ  %Rec. Limits  90 - 110  mple ID: I  Prep Typ	ethod oe: Tot eed 09:27 trol Sa be: Tot	Blank al/NA Dil Fac ample al/NA
Lab Sample ID: MB 400-38 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: 660-86263 Matrix: Water Analysis Batch: 392128	32128/3  Re 0  392128/4  3-C-1 MS  Sample	MB MB esult Qualifier .032 U	Spike Added 4.00	PQL 0.10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MDL Unit mg/L  CS Qualifier	Cli Unit mg/L	D P ent Sai	mple ID  *Rec 105	Analyz  O3/30/18  C: Lab Com Prep Typ  %Rec. Limits  90 - 110  mple ID: I Prep Typ  %Rec.	ethod oe: Tot eed 09:27 trol Sa be: Tot	Blank al/NA Dil Fac ample al/NA
Lab Sample ID: MB 400-38 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: LCS 400-3 Matrix: Water Analysis Batch: 392128  Analyte Fluoride  Lab Sample ID: 660-86263 Matrix: Water	32128/3  Re 0  392128/4  3-C-1 MS  Sample	MB MB esult Qualifier .032 U	Spike Added 4.00	PQL 0.10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MDL Unit .032 mg/L LCS Qualifier	Cli	D P	mple ID  WRec 105	Analyz  O3/30/18  C: Lab Con Prep Typ  %Rec. Limits  90 - 110  mple ID: I  Prep Typ	ethod oe: Tot eed 09:27 trol Sa be: Tot	Blank al/NA Dil Fac ample al/NA

TestAmerica Pensacola

Prep Type: Total/NA

%Rec.

Limits

75 - 125

D %Rec

110

MSD MSD

Result Qualifier

Unit

mg/L

Spike

Added

1.00

Sample Sample

0.032 U

Result Qualifier

RPD Limit

0

RPD

RPD

Limit

TestAmerica Job ID: 400-151256-1

**Client Sample ID: Duplicate** 

SDG: Ash Pond

RPD

Prep Type: Total/NA

Lab Sample ID: 660-86302-C-3 DU

**Matrix: Water** 

**Matrix: Water** 

Analyte

Fluoride

**Analysis Batch: 392128** 

Sample Sample

Result Qualifier 0.14

DU DU Result Qualifier 0.140

Unit

mg/L n

Client Sample ID: Method Blank

Prep Type: Total/NA

**Analysis Batch: 392160** 

Lab Sample ID: MB 400-392160/3

MB MB Result Qualifier Analyte Fluoride 0.032 U

PQL 0.10

**MDL** Unit 0.032 mg/L

**Prepared** 

D

Dil Fac Analyzed 03/30/18 12:29

Lab Sample ID: LCS 400-392160/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392160** 

**Analyte** 

Spike Added 4.00

LCS LCS Result Qualifier 4.18

Unit mg/L

D %Rec 105

Limits 90 - 110

%Rec.

Lab Sample ID: 400-151514-A-4 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Fluoride

Fluoride

**Analysis Batch: 392160** 

Analyte

Sample Sample

Spike Result Qualifier Added 0.17 1.00

MS MS Result Qualifier 1.26

Unit mg/L

%Rec 109

%Rec. Limits 75 - 125

**Client Sample ID: Matrix Spike Duplicate** 

RPD

Lab Sample ID: 400-151514-A-4 MSD

**Matrix: Water** 

**Analysis Batch: 392160** 

Sample Sample Analyte Result Qualifier Fluoride

0.17

Added 1.00

Spike

MSD MSD 1.26

Result Qualifier

Unit %Rec mg/L

Limits 109 75 - 125

%Rec.

RPD Limit

Prep Type: Total/NA

Lab Sample ID: 400-151335-B-2 DU

**Matrix: Water** 

Fluoride

Sulfate

**Analysis Batch: 392160** 

Analyte

Sample Sample Result Qualifier 0.032 U

DU DU

Result Qualifier 0.032 U

Unit D mg/L

**RPD** 

**Client Sample ID: Duplicate** 

**RPD** Limit NC

Prep Type: Total/NA

Prep Type: Total/NA

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-391402/6

**Matrix: Water** 

Analysis Batch: 391402

MB MB **Analyte** 

Result Qualifier 1.4 U

PQL 5.0 **MDL** Unit 1.4 mg/L Prepared

**Analyzed** 03/26/18 08:09

Client Sample ID: Method Blank

Dil Fac

-

Client: Gulf Power Company Project/Site: CCR Smith Plant

Sulfate

TestAmerica Job ID: 400-151256-1 SDG: Ash Pond

6

#### Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: LCS 400-3	91402/7					Client	Sa	mple ID	: Lab Contro	ol Sai	mple
Matrix: Water									Prep Type:	Tota	I/NA
Analysis Batch: 391402											
			Spike	LCS	LCS				%Rec.		
Analyte			Added		Qualifier	Unit	_ D	%Rec	Limits		
Sulfate			15.0	14.7		mg/L		98	90 - 110		
Lab Sample ID: MRL 400-3	391402/3					Client	Sa	mple ID	: Lab Contro	ol Sai	mple
Matrix: Water									Prep Type:	Tota	ıl/NA
Analysis Batch: 391402											
			Spike	MRL	MRL				%Rec.		
Analyte			Added		Qualifier	Unit	_ D	%Rec	Limits		
Sulfate			5.00	4.63	I	mg/L		93	50 - 150		
 Lab Sample ID: 400-15124	8-G-1 MS						C	ient Sa	mple ID: Mat	trix S	pike
Matrix: Water									Prep Type:	Tota	i/NA
Analysis Batch: 391402											
-	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits		
Sulfate	14		10.0	23.5		mg/L		96	77 - 128		
 Lab Sample ID: 400-15124	8-G-1 MSD					Client S	amn	le ID: N	Matrix Spike	Dunli	icate
Matrix: Water	0 0 1 11102						up	10 15. 11	Prep Type:		
Analysis Batch: 391402									riop Typo.	. 0	
7 mary one Date m co 1 102	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits F	RPD	Limit
Sulfate	14		10.0	23.6		mg/L		97	77 - 128	1	5
_											
Lab Sample ID: MB 400-39	1563/6						Clie	ent Sam	nple ID: Meth		
Matrix: Water									Prep Type:	Tota	ıl/NA
Analysis Batch: 391563		MD MD									
Analysta	D.	MB MB esult Qualifie	_	PQL	MDL Unit	D	ь	ranarad	Anglyzad	-	il Fac
Analyte Sulfate	KE	1.4 U	<u>r</u>	5.0	1.4 mg/L		_	repared	Analyzed 03/27/18 06:4		1 rac
_		1.4 0		5.0	1.4 mg/L				03/21/10 00.	+1	'
Lab Sample ID: LCS 400-3	91563/7					Client	Sa	mple ID	: Lab Contro	ol Sai	mple
Matrix: Water								•	Prep Type:		
Analysis Batch: 391563											
-			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Sulfate			15.0	14.8		mg/L		99	90 - 110		
_ Lab Sample ID: MRL 400-3	201562/2					Clions	· Ca	mple ID	. Lab Contro	d Car	mplo
Matrix: Water	91903/3					Cilein	Jai	iipie ib	: Lab Contro		
Matrix. Water									Prep Type:	1010	II/INA
Analysis Ratch: 301563				MDI	MRL				%Rec.		
Analysis Batch: 391563			Spike	IVIRL							
•			Spike Added		Qualifier	Unit	D	%Rec	Limits		
Analysis Batch: 391563  Analyte Sulfate					Qualifier	Unit mg/L	_ D	<b>%Rec</b> 92			
Analyte Sulfate			Added	Result	Qualifier			92	<b>Limits</b> 50 - 150		
Analyte Sulfate Lab Sample ID: 400-15082	 2-G-1 MS		Added	Result	Qualifier			92	Limits 50 - 150 mple ID: Mat		-
Analyte Sulfate  Lab Sample ID: 400-15082 Matrix: Water	 2-G-1 MS		Added	Result	Qualifier			92	<b>Limits</b> 50 - 150		-
Analyte Sulfate Lab Sample ID: 400-15082		Sample	Added	4.58	Qualifier			92	Limits 50 - 150 mple ID: Mat		-

TestAmerica Pensacola

1.4 U J3

mg/L

10.0

1.6 I

**Prep Type: Total/NA** 

**Client Sample ID: Matrix Spike Duplicate** 

Lab Sample ID: 400-150822-G-1 MSD

**Matrix: Water** 

Analysis Batch: 391563

Client: Gulf Power Company

Project/Site: CCR Smith Plant

,, o.c _ u.c cc .ccc	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sulfate	1.6	I	10.0	1.4	U J3	mg/L	_	0	77 - 128	NC	5

Lab Sample ID: 400-151209-G-1 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 391563** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	1.4	U	10.0	10.6		mg/L		106	77 - 128	

Lab Sample ID: 400-151209-G-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 391563

, ,	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sulfate	1.4	U	10.0	10.8		mg/L		108	77 - 128	2	5

Lab Sample ID: MB 400-392490/6 **Client Sample ID: Method Blank** Prep Type: Total/NA **Matrix: Water** 

Analysis Batch: 392490

MB MB Analyte Result Qualifier PQL MDL Unit Prepared Analyzed Dil Fac Sulfate 1.4 U 5.0 1.4 mg/L 04/03/18 09:42

Lab Sample ID: LCS 400-392490/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 392490

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	15.0	14.9	-	mg/L		99	90 - 110	

Lab Sample ID: MRL 400-392490/3 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392490** 

	Spike	MRL	MRL				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	5.00	4.54	I	ma/L	_	91	50 - 150	

Lab Sample ID: 400-151335-B-1 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 392490

, , , , , , , , , , , , , , , , , , , ,	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	6.9		10.0	17 6		ma/l		107	77 - 128	

Lab Sample ID: 400-151335-B-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 392490

Analysis Batom 502400	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sulfate	6.9		10.0	17.7		mg/L		107	77 - 128	0	5

TestAmerica Pensacola

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Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018

Months

Archive for

Disposal by Lab

Return to Client

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hezard | Flammable Skin Irritant Special Instructions/QC Requirements & Comments:

Preservation Used: 1≈ Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5≃NaOH; 6= Other

Possible Hazard Identification

FR-01

Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

(1)

3 3

3-22-18 1320

M M 3

3

1050

3-22-8

01-MV5 MW-12 33

3-20-18 1620

3-20-18 1329

3-3-18 6802 3-22-18 1405

Dup-04 EB-01

Dup 01

3

Pensacola, FL 32514-7045													INE LEADER IN ENVIRON
phone 850.474.1001 fax 850.474.4789	Regn	Regulatory Program:	gram:	Dw [	NPDES	RCRA	-	Other:					TestAmerica Labor
Client Contact	Project Manager:	anager:			Ť	Site Contact:	act:			Date:			COC No:
Gulf Power Company	Tel/Fax:				Γ	ab Cont	Lab Contact: Chevenne Whitmire	hitmire		Carrier			of 1
1 Energy Place		Analysis T	Turnaround Time	Fime	T	E	2	-			E	E	Sampler Biok Honoud
Pensacola, FL 32520	CALET		□ WOR	☐ WORKING DAYS				A0	Бu				For Lab Use Only:
(850) 444-6427 Phone	AT.	TAT if different from Below	m Below		Γ			<b>7</b> 47	ndu	-			Walk-in Client
(xxx) xxx-xxxx FAX		2	2 weeks			11	,916	,iT	ves.				1 ab Sampling
Project Name: CCR Smith Plant		1	1 week			Υ) <sub>Б</sub> Я_	bino	'əs	DIA				
Site:		2	2 days			350 ISD	) - E	'oy	14 -				Lob / CDC No .
PO#			1 day			6 '9 W / S	- 3 - 5 - 5 - 5	רוי ו					200 000
			Sample		Ĭ	1 MS	C    ``C    ``C	hp'					
	Sample	Sample	Type (C=Comp,			itered arforn FISER	A226R M4500 M4500 Loridi	120 - 5 r, Co, ercu <i>r</i> ,	eldSa arame				
Sample Identification	Date	Ime	G=Grab)	Matrix	Cont.	6 d	1  S  S	W					Sample Specific
MW-02	3-211R 1095	1997	4)	W-1	~		ید	+					
MW-03	3-30-18 173	1730	4	3	8	. ~	- ×	~					
MW-06	3-91-18 132	h2£1	7	3	M	. `		×					
Lo - MVP	3-21-18	14	5	S. W	~	. ~	Ł	*					
80-MY4	3-22-18	Ibyo	7	Cha	K		_	×					
80 - MV6	3-23-18 5902	5902	3	3	2	+	*	+					
f				-	V								

Notes:

**TestAmerica** 

Chain of Custody Record

TestAmerica Pensacola

3355 McLemore Drive

atories, Inc.

700 48°C, 0.0°C, 41°C, 0.0°C, 0.0°C, TR-7 Date/Time: Date/Time: Company: Company: Company: Corr'd: Cooler Temp. (°C): Obs'd Received in Laboratory by: Received by: Received by: Date/Time: R 3-33-78 1705 Date/Time: R Date/Time: Company: Custody Seal No. Company: % □ Ϋ́es Custody Seals Intact: :xudnished by: 13/2018 Relinquished by: Relinquished by

# TestAmerico THE LEADER IN ENVIRONMENTAL TESTING

# Chain of Custody Record

TestAmerica Pensacola 3355 McLemore Drive

Pensacola, FL 32514-7045 phone 850.474.1001 fax 850.474.4789	Regulatory Program:	□ ow □ NPDES	RCRA	Other:			TestAmerica Laboratories, Inc.	
Client Contact	Project Manager:		Site Contact:		Date:		COC No:	
Gulf Power Company	Tel/Fax:		Lab Contact: Cheyenne Whitmire	ine Whitmire	Carrier:		of 2 cocs	T
1 Energy Place	Analysis Turnaround T	und Time	-				Sample: Rick Hadendorfer	T
Pensacola, FL 32520	☐ CALENDAR DAYS	WORKING DAYS		Cd,			For Lab Use Only:	T
(850) 444-6427 Phone	TAT if different from Below	>	°52,	Ca,			Walk-in Client:	
1 1	2 weeks		7 / 1 1228 16, 1816	,68 ,IT ,			Lab Sampling:	
Project Name: CCR Smith Plant	1 week		Sult Sult	es I '8				1
Site:	2 days		Е - 3 350 350	,68 No,			Job / SDG No:	
PO#	1 day		7 8 6 6 6 9 N / S	(s)				$\overline{}$
Sample Identification	Sample Sample (C=Comp.) Date Time G=Gmb)	ole # of # o	Filtered Sai Perform M9 9315_Ra22 Ra226Ra22 SM4500_CI	Total Dieso Fluoride Cr, Co, Pb, Mercury FieldSampl Parametera			Samula Sneoific Notes:	1
68-03	8 0805	3	<u>ـ</u> ـــــــــــــــــــــــــــــــــــ	₹ *				11
FB-02	323-19 0755 (-	2	×					T = T
			$\vdash$					
age								
49		-						
of								
51								
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	NaOH; 6= Other							
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.	ist any EPA Waste Codes for	the sample in the	Sample Disposa	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	mples are retained lo	onger than 1 mon	th)	
Non-Hazard Flammable Skin Irritant	☐ Polson B	Unknown	Return to Client	t.	Olsposal by Lab	Archive for	Months	
Special Instructions/QC Requirements & Comments:					(000	100		
Custody Seals Intact:	Custody Seal No.:		V	Cooler Temp. (°C): Obs'd:	1,8 C 0,00 Corrid:	3/1	0,07,0,000 K-+	_
Relinquished by:	Company:	Date/Time:	Received by:		Company	V .	ate/Time:	_
Relinquished by.		Date/Time:	Received by:		Company:	any:	Date/Time:	_
Rainquished by:	Company:	Date/Time:	Received in Laboratory by:	atory by:	Company:	any:	Date/Time:	7
<b>D18</b>						Form No. C	Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018	7 ~

Client: Gulf Power Company

Job Number: 400-151256-1 SDG Number: Ash Pond

List Source: TestAmerica Pensacola

Login Number: 151256 List Number: 1

Creator: Whitmire, Cheyenne R

Answer	Comment
N/A	
True	
N/A	
True	
True	
True	
True	4.8°C, 0.0°C,4.1°C, 0.0°C, 0.0°C IR-7
True	
N/A	
True	
True	
N/A	
	N/A True N/A True True True True True True True True

TestAmerica Pensacola

#### **Accreditation/Certification Summary**

Client: Gulf Power Company

TestAmerica Job ID: 400-151256-1

Project/Site: CCR Smith Plant

SDG: Ash Pond

#### **Laboratory: TestAmerica Pensacola**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
Alabama	State Program	4	40150	06-30-18
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18 *
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Ilinois	NELAP	5	200041	10-09-18
owa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
∟ouisiana	NELAP	6	30976	06-30-18
₋ouisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Гехаs	NELAP	6	T104704286-17-12	09-30-18
JSDA	Federal		P330-16-00172	05-24-19
/irginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-151256-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 4/20/2018 3:33:55 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

#### **Protocol References:**

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

#### **Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151256-2 SDG: Ash Pond

Pond

Lab Sample ID	Client Sample ID	Matrix	Collected Received
400-151256-1	MW-12	Water	03/20/18 13:29 03/22/18 14:40
400-151256-2	MW-03	Water	03/20/18 17:20 03/22/18 14:40
400-151256-3	DUP-01	Water	03/20/18 16:20 03/22/18 14:40
400-151256-4	MW-02	Water	03/21/18 09:51 03/22/18 14:40
400-151256-5	MW-07	Water	03/21/18 11:46 03/22/18 14:40
400-151256-6	MW-06	Water	03/21/18 13:24 03/22/18 14:40
400-151256-8	MW-10	Water	03/22/18 10:52 03/22/18 14:40
400-151256-10	FB-01	Water	03/22/18 13:20 03/23/18 17:05
400-151256-11	EB-01	Water	03/22/18 14:05 03/23/18 17:05
400-151256-12	MW-08	Water	03/22/18 16:40 03/23/18 17:05
400-151256-15	MW-09	Water	03/23/18 09:02 03/23/18 17:05
400-151256-16	EB-02	Water	03/23/18 08:05 03/23/18 17:05
400-151256-17	FB-02	Water	03/23/18 07:55 03/23/18 17:05
400-151256-18	DUP-04	Water	03/23/18 08:02 03/23/18 17:05

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: MW-12** 

Date Collected: 03/20/18 13:29 Date Received: 03/22/18 14:40 Lab Sample ID: 400-151256-1

Matrix: Water

Avaluta	D 16	Ossall Com	Count Uncert.	Total Uncert.	D.	мро	119	Downson	Austroad	DU. E
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.45		0.195	0.235	1.00	0.0838	pCi/L	03/28/18 10:18	04/19/18 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					03/28/18 10:18	04/19/18 05:54	1

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.369		0.237	0.240	1.00	0.364	pCi/L	03/28/18 10:53	04/04/18 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					03/28/18 10:53	04/04/18 14:23	1
Y Carrier	90.5		40 - 110					03/28/18 10:53	04/04/18 14:23	1

Method: Ra226_Ra	228 - Com	nbined Ra	dium-226 a	nd Radiur	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium	1.81		0.307	0.336	5.00	0.364	pCi/L		04/19/18 17:52	1

226 + 228

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Client Sample ID: MW-03

Date Collected: 03/20/18 17:20 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-2

Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.03		0.168	0.192	1.00	0.0903	pCi/L	03/28/18 10:18	04/19/18 05:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					03/28/18 10:18	04/19/18 05:55	1

Ba Garrier	00.0		70 - 770					00/20/10 10:10	0 11 101 10 00.00	•
Method: 9320 - R	adium-228 (	GFPC)								
	·		Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.793		0.296	0.305	1.00	0.416	pCi/L	03/28/18 10:53	04/04/18 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					03/28/18 10:53	04/04/18 14:25	1
Y Carrier	92.0		40 - 110					03/28/18 10:53	04/04/18 14:25	1

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.82		0.340	0.360	5.00	0.416	pCi/L		04/19/18 17:52	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: DUP-01** 

Date Collected: 03/20/18 16:20 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-3

Matrix: Water

Method: 9315 - R	adium-226 (	(GFPC)	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.927		0.159	0.180	1.00	0.0915	pCi/L	03/28/18 10:18	04/19/18 05:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					03/28/18 10:18	04/19/18 05:55	1

Method: 9320 - Ra	adium-228 (	(GFPC)	Count	Total						
Analyte	Popult	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analvzed	Dil Fac
Analyte	Result	Qualifier			KL _					DII Fac
Radium-228	0.421		0.236	0.239	1.00	0.355	pCi/L	03/28/18 10:53	04/04/18 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					03/28/18 10:53	04/04/18 14:25	1
Y Carrier	92.3		40 - 110					03/28/18 10:53	04/04/18 14:25	1

Method: Ra226_Ra	228 - Com	nbined Ra	dium-226 a	nd Radiur	m-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium	1.35		0.285	0.299	5.00	0.355	pCi/L		04/19/18 17:52	1

226 + 228

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Client Sample ID: MW-02

Date Collected: 03/21/18 09:51 Date Received: 03/22/18 14:40 Lab Sample ID: 400-151256-4

Matrix: Water

dium-226 (	(GFPC)	Count	Total						
		Oncert.	Oncert.						
Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
0.935	·	0.152	0.174	1.00	0.0726	pCi/L	03/28/18 10:18	04/19/18 05:55	1
%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
98.8		40 - 110					03/28/18 10:18	04/19/18 05:55	1
	Result 0.935	%Yield Qualifier	Count Uncert.	Count Uncert. Uncert. Uncert.	Count   Total   Uncert.   Uncert.   Uncert.   Uncert.   Uncert.   O.935   O.152   O.174   O.100   O.174   O.100   O.174   O.100   O.174   O.100   O	Count   Total   Uncert.   Uncert.   Uncert.   O.935   O.152   O.174   O.0726	Count   Total   Uncert.   Uncert.   Uncert.   Result   Qualifier   (2σ+/-)   (2σ+/-)   RL   MDC   Unit   O.935   O.152   O.174   1.00   O.0726   pCi/L	Count   Total   Uncert.   Uncert.   Uncert.   Result   Qualifier   (2σ+/-)   (2σ+/-)   RL   MDC   Unit   Prepared   O.935   0.152   0.174   1.00   0.0726   pCi/L   O3/28/18 10:18	Count Uncert. Uncert. Uncert.   Variety   V

%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
98.8		40 - 110					03/28/18 10:18	04/19/18 05:55	1
adium-228 (	GFPC)								
		Count	Total						
		Uncert.	Uncert.						
Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
0.381		0.238	0.241	1.00	0.365	pCi/L	03/28/18 10:53	04/04/18 14:25	1
%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
98.8		40 - 110					03/28/18 10:53	04/04/18 14:25	1
89.0		40 - 110					03/28/18 10:53	04/04/18 14:25	1
	98.8 Radium-228 (  Result 0.381  %Yield 98.8	Result Qualifier 0.381  WYield Qualifier 98.8	98.8 40 - 110  Radium-228 (GFPC)  Count Uncert.  Result Qualifier (2σ+/-) 0.381 0.238  **Yield Qualifier Limits 98.8 40 - 110	98.8 40 - 110  Radium-228 (GFPC)  Count Uncert. Uncert.  Result Qualifier (2σ+/-) (2σ+/-)  0.381 0.238 0.241   **Yield Qualifier Limits  98.8 40 - 110	98.8 40 - 110  Radium-228 (GFPC)  Count Uncert. Uncert.  Result Qualifier (2σ+/-) (2σ+/-) RL  0.381 0.238 0.241 1.00  %Yield Qualifier Limits 98.8 40 - 110	98.8 40 - 110    Count   Total   Uncert.   Unc	10   10   10   10   10   10   10   10	98.8 40 - 110  Count Total Uncert. Uncert.  Result Qualifier (2σ+/-) (2σ+/-) RL MDC Unit Prepared  0.381 0.238 0.241 1.00 0.365 pCi/L 03/28/18 10:53  **Yield Qualifier Limits 98.8 40 - 110  Prepared  03/28/18 10:53	98.8 40 - 110  Count Total Uncert. Uncert.  Result Qualifier (2σ+/-) (2σ+/-) RL MDC Unit Prepared 03/28/18 10:53 04/04/18 14:25  %Yield Qualifier Limits Prepared 03/28/18 10:53 04/04/18 14:25

Method: Ra226_Ra	a228 - Con	nbined Ra	dium-226 a	nd Radiur	m-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.32		0.282	0.297	5.00	0.365	pCi/L		04/19/18 17:52	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: MW-07** 

Date Collected: 03/21/18 11:46 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-5

Matrix: Water

Method: 9315 - Ra	dium-226 (	GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	15.8		0.610	1.55	1.00	0.0610	pCi/L	03/28/18 10:18	04/19/18 05:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/28/18 10:18	04/19/18 05:55	1

Method: 9320 - F	Radium-228 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.42		0.413	0.519	1.00	0.349	pCi/L	03/28/18 10:53	04/04/18 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/28/18 10:53	04/04/18 14:25	1
Y Carrier	90.5		40 - 110					03/28/18 10:53	04/04/18 14:25	1

momour rtazzo_rta	220 - COII	ibined Rad	Count	nd Radium Total	1-228					
			Count	TOLAT						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	19.3		0.737	1.63	5.00	0.349	pCi/L	<del>_</del> .	04/19/18 17:52	1

TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: MW-06** 

Date Collected: 03/21/18 13:24 Date Received: 03/22/18 14:40 Lab Sample ID: 400-151256-6

**Matrix: Water** 

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	8.57		0.447	0.891	1.00	0.0731	pCi/L	03/28/18 10:18	04/19/18 05:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					03/28/18 10:18	04/19/18 05:55	1

Method: 9320 - Ra	dium-228 (	(GFPC)								
			Count Uncert.	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	16.0		0.825	1.68	1.00	0.440	pCi/L	03/28/18 10:53	04/04/18 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					03/28/18 10:53	04/04/18 14:25	1
Y Carrier	90.8		40 - 110					03/28/18 10:53	04/04/18 14:25	1

Method: Ra226_Ra2	228 - Com	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium	24.5		0.938	1.90	5.00	0.440	pCi/L		04/19/18 17:52	1

226 + 228

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: MW-10** 

Date Collected: 03/22/18 10:52 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-8

Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	4.80		0.336	0.547	1.00	0.0664	pCi/L	03/28/18 10:18	04/19/18 05:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/28/18 10:18	04/19/18 05:55	1

Method: 9320 - Ra	dium-228 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	14.9		0.799	1.58	1.00	0.400	pCi/L	03/28/18 10:53	04/04/18 14:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/28/18 10:53	04/04/18 14:26	1
Y Carrier	87.5		40 - 110					03/28/18 10:53	04/04/18 14:26	1

Method: Ra226 R	a228 - Combi	ned Radium-226	and Radiu	m-228					
_		Count	Total						
		Uncert.	Uncert.						
Analyte	Result Qu	ualifier (2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	19.7	0.867	1.67	5.00	0.400	pCi/L		04/19/18 17:52	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: FB-01** 

Date Collected: 03/22/18 13:20 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-10

Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00290	U	0.0343	0.0343	1.00	0.0723	pCi/L	03/28/18 10:18	04/19/18 05:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					03/28/18 10:18	04/19/18 05:56	1

Method: 9320 - Ra	dium-228 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0465	U	0.220	0.220	1.00	0.384	pCi/L	03/28/18 10:53	04/04/18 14:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					03/28/18 10:53	04/04/18 14:26	1
Y Carrier	89.0		40 - 110					03/28/18 10:53	04/04/18 14:26	1

Method: Ra226 Ra2	228 - Com	bined Ra	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0494	U	0.223	0.223	5.00	0.384	pCi/L		04/19/18 17:52	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: EB-01** 

Date Collected: 03/22/18 14:05 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-11

Matrix: Water

Method: 9315 - R	Radium-226 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00652	U	0.0409	0.0409	1.00	0.0807	pCi/L	03/28/18 10:18	04/19/18 05:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/28/18 10:18	04/19/18 05:56	1

Me	ethod: 9320 - I	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Ana	alyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Rad	dium-228	0.261	U	0.205	0.207	1.00	0.324	pCi/L	03/28/18 10:53	04/04/18 14:26	1
Car	rrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ва	Carrier	102		40 - 110					03/28/18 10:53	04/04/18 14:26	1
ΥC	Carrier	92.0		40 - 110					03/28/18 10:53	04/04/18 14:26	1

_ Method: Ra226_Ra2	228 - Com	nbined Ra	dium-226 a	nd Radiur	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226	0.268	U	0.209	0.211	5.00	0.324	pCi/L		04/19/18 17:52	1

+ 228

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: MW-08** 

Date Collected: 03/22/18 16:40 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-12

**Matrix: Water** 

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	11.7		0.516	1.17	1.00	0.0704	pCi/L	03/28/18 10:18	04/19/18 05:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier			40 - 110					03/28/18 10:18	04/19/18 05:56	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	20.7		0.903	2.11	1.00	0.352	pCi/L	03/28/18 10:53	04/04/18 14:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					03/28/18 10:53	04/04/18 14:26	1
Y Carrier	90.5		40 - 110					03/28/18 10:53	04/04/18 14:26	1

Method: Ra226_Ra2	228 - Com	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium	32.4		1.04	2.41	5.00	0.352	pCi/L		04/19/18 17:52	1

226 + 228

4/20/2018

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Client Sample ID: MW-09

Date Collected: 03/23/18 09:02 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-15

**Matrix: Water** 

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	7.28		0.409	0.773	1.00	0.0735	pCi/L	03/28/18 10:18	04/19/18 05:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					03/28/18 10:18	04/19/18 05:56	

Method: 9320 - F	Radium-228 (	GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	5.47		0.485	0.699	1.00	0.312	pCi/L	03/28/18 10:53	04/04/18 14:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					03/28/18 10:53	04/04/18 14:27	1
Y Carrier	87.9		40 - 110					03/28/18 10:53	04/04/18 14:27	1

Method: Ra226_Ra2	228 - Con	nbined Ra	dium-226 a	nd Radiun	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	12.8		0.634	1.04	5.00	0.312	pCi/L		04/19/18 17:52	1

4/20/2018

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: EB-02** 

Date Collected: 03/23/18 08:05 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-16

**Matrix: Water** 

Method: 9315 -	Radium-226 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.000606	U	0.0285	0.0285	1.00	0.0655	pCi/L	03/28/18 10:18	04/19/18 05:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					03/28/18 10:18	04/19/18 05:56	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.198	U	0.221	0.222	1.00	0.363	pCi/L	03/28/18 10:53	04/04/18 14:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					03/28/18 10:53	04/04/18 14:27	1
Y Carrier	88.6		40 - 110					03/28/18 10:53	04/04/18 14:27	1

_ Method: Ra226_Ra	228 - Com	nbined Ra	dium-226 a	nd Radiur	m-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226	0.198	U	0.223	0.224	5.00	0.363	pCi/L	<del></del>	04/19/18 17:52	1

+ 228

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: FB-02** 

Date Collected: 03/23/18 07:55 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-17

**Matrix: Water** 

Method: 9315 - R	adium-226 (	(GFPC)								
		,	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0448	U	0.0439	0.0441	1.00	0.0665	pCi/L	03/28/18 10:18	04/19/18 05:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					03/28/18 10:18	04/19/18 05:57	1

Method: 9320 - Ra	dium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.137	U	0.190	0.190	1.00	0.317	pCi/L	03/28/18 10:53	04/04/18 14:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					03/28/18 10:53	04/04/18 14:28	1
Y Carrier	91.2		40 - 110					03/28/18 10:53	04/04/18 14:28	1

Method: Ra226_Ra2	228 - Con	nbined Ra	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.181	U	0.195	0.195	5.00	0.317	pCi/L		04/19/18 17:52	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: DUP-04** 

Date Collected: 03/23/18 08:02 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-18

**Matrix: Water** 

Method: 9315 - Ra	dium-226 (	(GFPC)								
	·		Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	7.95		0.426	0.832	1.00	0.0630	pCi/L	03/28/18 10:18	04/19/18 05:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					03/28/18 10:18	04/19/18 05:58	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	6.28		0.541	0.791	1.00	0.331	pCi/L	03/28/18 10:53	04/04/18 14:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					03/28/18 10:53	04/04/18 14:28	1
Y Carrier	81.9		40 - 110					03/28/18 10:53	04/04/18 14:28	1

Method: Ra226_Ra	228 - Con	bined Rad	dium-226 a	nd Radium	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	14.2		0.689	1.15	5.00	0.331	pCi/L		04/19/18 17:52	1

### **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

### **Qualifiers**

### Rad

**CNF** 

Qualifier	Qualifier	Description
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U Result is less than the sample detection limit.

### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

Contains No Free Liquid

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

**PQL Practical Quantitation Limit** 

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Client Sample ID: MW-12

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collected: 03/20/18 13:29 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151256-1

Matrix: Water

Batch Batch Dilution Batch **Prepared** Method **Prep Type** Factor Number or Analyzed Type Run Analyst Lab Total/NA Prep PrecSep-21 357975 03/28/18 10:18 TJT TAL SL Total/NA Analysis 9315 361701 04/19/18 05:54 RTM TAL SL 1 TAL SL Total/NA Prep PrecSep 0 357987 03/28/18 10:53 TJT Total/NA TAL SL Analysis 9320 1 358768 04/04/18 14:23 RTM TAL SL Total/NA Analysis Ra226 Ra228 1 361901 04/19/18 17:52 RTM

Lab Sample ID: 400-151256-2

Client Sample ID: MW-03 Date Collected: 03/20/18 17:20 **Matrix: Water** 

Date Received: 03/22/18 14:40

Batch **Batch** Dilution Batch **Prepared** Method **Prep Type** Type Run **Factor** Number or Analyzed Lab Analyst Total/NA PrecSep-21 357975 03/28/18 10:18 TJT TAL SL Prep Total/NA Analysis 9315 361701 04/19/18 05:55 TAL SL 1 TAL SL Total/NA Prep PrecSep 0 357987 03/28/18 10:53 TJT Total/NA 9320 358768 04/04/18 14:25 RTM TAL SL Analysis TAL SL Total/NA Analysis Ra226\_Ra228 1 361901 04/19/18 17:52 RTM

Client Sample ID: DUP-01 Lab Sample ID: 400-151256-3

Date Collected: 03/20/18 16:20 **Matrix: Water** 

Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:55	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Client Sample ID: MW-02 Lab Sample ID: 400-151256-4 Date Collected: 03/21/18 09:51 **Matrix: Water** 

Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:55	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

TestAmerica Pensacola

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TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Client Sample ID: MW-07

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Lab Sample ID: 400-151256-5

**Matrix: Water** 

Date Collected: 03/21/18 11:46 Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21	_		357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:55	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Lab Sample ID: 400-151256-6

Date Collected: 03/21/18 13:24 Date Received: 03/22/18 14:40

**Client Sample ID: MW-06** 

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:55	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:25	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

**Client Sample ID: MW-10** Lab Sample ID: 400-151256-8 Date Collected: 03/22/18 10:52

**Matrix: Water** 

Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:55	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:26	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Client Sample ID: FB-01 Lab Sample ID: 400-151256-10

Date Collected: 03/22/18 13:20 **Matrix: Water** Date Received: 03/23/18 17:05

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:26	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

Client Sample ID: EB-01

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collected: 03/22/18 14:05 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-11

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:26	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Lab Sample ID: 400-151256-12

**Matrix: Water** 

Date Collected: 03/22/18 16:40 Date Received: 03/23/18 17:05

**Client Sample ID: MW-08** 

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:26	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Lab Sample ID: 400-151256-15 **Client Sample ID: MW-09** 

Date Collected: 03/23/18 09:02 Date Received: 03/23/18 17:05

**Matrix: Water** 

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Client Sample ID: EB-02 Lab Sample ID: 400-151256-16 **Matrix: Water** 

Date Collected: 03/23/18 08:05

Date Received: 03/23/18 17:05

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358768	04/04/18 14:27	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

**Client Sample ID: FB-02** 

Date Collected: 03/23/18 07:55 Date Received: 03/23/18 17:05

Lab Sample ID: 400-151256-17

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361701	04/19/18 05:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358769	04/04/18 14:28	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

Lab Sample ID: 400-151256-18

**Matrix: Water** 

Date Collected: 03/23/18 08:02 Date Received: 03/23/18 17:05

**Client Sample ID: DUP-04** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			357975	03/28/18 10:18	TJT	TAL SL
Total/NA	Analysis	9315		1	361702	04/19/18 05:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			357987	03/28/18 10:53	TJT	TAL SL
Total/NA	Analysis	9320		1	358769	04/04/18 14:28	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	361901	04/19/18 17:52	RTM	TAL SL

### **Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

### **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

### Rad

**Prep Batch: 357975** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	PrecSep-21	
400-151256-2	MW-03	Total/NA	Water	PrecSep-21	
400-151256-3	DUP-01	Total/NA	Water	PrecSep-21	
400-151256-4	MW-02	Total/NA	Water	PrecSep-21	
400-151256-5	MW-07	Total/NA	Water	PrecSep-21	
400-151256-6	MW-06	Total/NA	Water	PrecSep-21	
400-151256-8	MW-10	Total/NA	Water	PrecSep-21	
400-151256-10	FB-01	Total/NA	Water	PrecSep-21	
400-151256-11	EB-01	Total/NA	Water	PrecSep-21	
400-151256-12	MW-08	Total/NA	Water	PrecSep-21	
400-151256-15	MW-09	Total/NA	Water	PrecSep-21	
400-151256-16	EB-02	Total/NA	Water	PrecSep-21	
400-151256-17	FB-02	Total/NA	Water	PrecSep-21	
400-151256-18	DUP-04	Total/NA	Water	PrecSep-21	
MB 160-357975/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-357975/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-76089-A-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

### Prep Batch: 357987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151256-1	MW-12	Total/NA	Water	PrecSep_0	
400-151256-2	MW-03	Total/NA	Water	PrecSep_0	
400-151256-3	DUP-01	Total/NA	Water	PrecSep_0	
400-151256-4	MW-02	Total/NA	Water	PrecSep_0	
400-151256-5	MW-07	Total/NA	Water	PrecSep_0	
400-151256-6	MW-06	Total/NA	Water	PrecSep_0	
400-151256-8	MW-10	Total/NA	Water	PrecSep_0	
400-151256-10	FB-01	Total/NA	Water	PrecSep_0	
400-151256-11	EB-01	Total/NA	Water	PrecSep_0	
400-151256-12	MW-08	Total/NA	Water	PrecSep_0	
400-151256-15	MW-09	Total/NA	Water	PrecSep_0	
400-151256-16	EB-02	Total/NA	Water	PrecSep_0	
400-151256-17	FB-02	Total/NA	Water	PrecSep_0	
400-151256-18	DUP-04	Total/NA	Water	PrecSep_0	
MB 160-357987/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-357987/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-76089-A-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Client: Gulf Power Company TestAmerica Job ID: 400-151256-2 Project/Site: CCR Smith Plant

SDG: Ash Pond

### Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-357975/23-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 361702 Prep Batch: 357975** Count Total

	MB	MB	Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02629	U	0.0468	0.0469	1.00	0.0829	pCi/L	03/28/18 10:18	04/19/18 05:58	1

MB MB Carrier **%Yield Qualifier** I imits Prepared Analyzed Dil Fac Ba Carrier 105 40 - 110 03/28/18 10:18 04/19/18 05:58

Lab Sample ID: LCS 160-357975/1-A

**Matrix: Water** Analysis Batch: 361701

Analysis Batch: 361701								Prep Batch:	357975
-				Total					
	Spike	LCS	LCS	Uncert.				%Rec.	
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	
Radium-226	11.8	10.26		1.04	1.00	0.0737 pCi/L	87	68 - 137	

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier

Lab Sample ID: 180-76089-A-1-A DU **Client Sample ID: Duplicate** 

**Matrix: Water Analysis Batch: 361701** 

Analyte

Y Carrier

Result Qualifier

92.0

 $(2\sigma + / -)$ 

40 - 110

					Total				-		
	Sample	Sample	DU	DU	Uncert.						RER
Analyte	Result	Qual	Result	Qual	(2σ+/-)	RL	MDC	Unit		RER	Limit
Radium-226	0.0776	<u>U</u>	0.08362		0.0533	1.00	0.0640	pCi/L		0.05	1
	DU L	ου									

Carrier %Yield Qualifier Limits Ba Carrier 99.4 40 - 110

### Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-357987/23-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA **Analysis Batch: 358769** Prep Batch: 357987 Count Total MB MB Uncert. Uncert.

RL

MDC Unit

Prepared

03/28/18 10:53 04/04/18 14:28

Radium-228	0.2976	U	0.197	0.199	1.00	0.302	pCi/L	03/28/18 10:53	04/04/18 14:28	1
Radium-228	0.2976	U	0.197	0.199	1.00	0.302	pCi/L	03/28/18 10:53	04/04/18 14:28	1
	МВ	MB								
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
	/01101G	Quanito	Liiiito					rrepared	Allalyzea	Diri ac
Ba Carrier	105		40 - 110						04/04/18 14:28	1
		quamor						03/28/18 10:53		1 1
Ba Carrier	105	<u>quamor</u>	40 - 110					03/28/18 10:53 03/28/18 10:53	04/04/18 14:28	1 1 1

 $(2\sigma + / -)$ 

TestAmerica Pensacola

Dil Fac

Analyzed

**Prep Type: Total/NA** 

**Prep Batch: 357975** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

### **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151256-2

SDG: Ash Pond

### Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-357987/1-A

**Matrix: Water** 

Analysis Batch: 358768

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 357987

				Total				
	Spike	LCS	LCS	Uncert.				%Rec.
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits
Radium-228	8.42	7.914		0.942	1.00	0.321 pCi/L	94	56 - 140
Radium-228	8.42	7.914		0.942	1.00	0.321 pCi/L	94	56 - 140

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 98.5 40 - 110 Ba Carrier 40 - 110 98.5 Y Carrier 88.2 40 - 110 Y Carrier 88.2 40 - 110

Lab Sample ID: 180-76089-A-1-B DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

**Analysis Batch: 358768** 

**Prep Type: Total/NA** Prep Batch: 357987

Total DU DU RER Sample Sample Uncert. Analyte Result Qual Result Qual  $(2\sigma + / -)$ RL MDC Unit RER Limit Radium-228 0.528 0.309 1.00 0.61 0.8681 0.415 pCi/L Radium-228 0.528 0.309 1.00 0.415 pCi/L 0.61 0.8681 1

DU DU Carrier %Yield Qualifier Limits Ba Carrier 99.4 40 - 110 Ba Carrier 99.4 40 - 110 Y Carrier 40 - 110 90.8 Y Carrier 90.8 40 - 110

# 1 2 3 4 5 6 7 8 9 10 11

## **Chain of Custody Record**

TestAmerica Pensacola 3355 McLemore Drive

**TestAmerica** 

Pensacola, FL 32514-7045 phone 850.474.1001 fax 850.474.4789	Regulatory Program:	□ DW □ NPDES	RCRA		Other:		THE LEADER IN ENVIRONMENTAL TESTING TOSTAMERICA Laboratories. Inc.
Client Contact	Project Manager:		Site Contact:	act:		Date:	COC No:
Gulf Power Company	Tel/Fax:		Lab Cont	Lab Contact: Cheyenne Whitmire	imire	Carrier:	of 2 COCs
1 Energy Place	Analysis Turnaround	Time	E	2			Wanga V
Pensacola, FL 32520	☐ CALENDAR DAYS ☐ WO	☐ WORKING DAYS			A0		For Lab Hea Only.
(850) 444-6427 Phone	TAT if different from Balow		_		<u> </u>		West in Client
	2 weeks		V 7	'əţē	. 'ш		ob Sompling
ect Name: CCR Smith Plant			Y ) БЯ_	ibiro stluč	'as		
Site:			350 ISD	9 - E PIUC	'oy		. 0000 400
PO#			6 '9 W / S	) - 3 ( ) t C	l, i.l		
Sample Identification	Sample Sample (C=Comp. Date Time G=Grab)	# of Watrix Cont.	Filtered Sa M mroha9 9315_828 SSa9_2616	Razzerazz Sm4500_SC SM4500_CI	6020 - Sb, 1 Cr, Co, Pb, Mercury FieldSampl Farametera		Sample Specific Notes:
MW-02	3-2118 0951 G	6W 3		×	X		
MW-03	3-30-18 1730 1	FW 3	_	- ×	. *		
MW-06	3-21-18 1324 6-		- \	×	×		
Lo - Myes	3-21-18 1146 6-	FW 3	×	¥	*		
80-MY2	3-22-18 16-40 6	Gw 3		4	X		
60-MV6	3-33-18 0902 6	6w 3	+	*	+		
01-2/23	3-22-18 105a G	6-W 3	Y	X	×		
MW-12	3-20-18 1329 6-	Ew 3	×	×	×		
DuR-01	3-20-18 1620 6	FW 3	×	×	Х		
Dup-04	3-33-18 0802 6-	6w 3	×	×	X		
68-01	3-22-18 1405 G	3	¥	γ.	- *		
FB-01	3-22-18 1320 6-	3	1	1	*		
Preservation Used: 1≈ Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5≈NaOH; 6= Other	aNaOH; 6= Other						
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please L Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Codes for the sample in the	sample in the	Sample	Disposal ( A fe	e may be assessed if sampl	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	th)
Non-Hazard Flammable Skin Irritant	☐ Poison B ☐ Unknowr	UWC		Return to Client		Disposal by Lab	Months
Special Instructions/QC Requirements & Comments:					-		
: C					- 1	DC 410C	0,0°C,0,0°C, T.R-7
Custody Seals Intact: Tes No	Custody Seal No.:	i	1		Cooler Temp. (°C): Obs'd:	Corr'd: Therm ID No.	,
Wein during St. M.	Company.	3-33-78 170	10	D WWW	My Company	Company:	Date/Time:
Kelinguished by	Company:	Date/Time:	Received by:	d by:		Company:	Date/Time:
nquished by:	Company:	Date/Time:	Receive	Received in Laboratory by:	y:	Company:	Date/Time:
0/2018				i.		Form No. C	Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018

7105

Date/Time:

Date/Time:

### **Chain of Custody Record**

TestAmerica Pensacola 3355 McLemore Drive

**TestAmerica** 

COC No:	Date:		Site Contact:	Project Manager:	Client Contact
TestAmerica Laboratories,		☐ Other:	ES   RCRA	Regulatory Program:   ow   INPDES	3, F
THE LEADER IN ENVIRONMENTAL TEST					Pensacola, FL 32514-7045

phone 850.474.1001 fax 850.474.4789	Regulatory Program:   Dow   NPDES	S		TestAmerica Laboratories, Inc.
Client Contact	Project Manager:	Site Contact:	Date:	COC No:
Gulf Power Company	Tel/Fax:	Lab Contact: Cheyenne Whitmire	Carrier:	2 of 2 cocs
1 Energy Place	Analysis Turnaround Time	0		Sampler: Dick Hogendorfer
Pensacola, FL 32520	☐ CALENDAR DAYS ☐ WORKING DAYS	Cq'		For Lab Use Only:
(850) 444-6427 Phone	TAT if different from Below	3, 5500 500		Walk-in Client:
(xxx) xxx-xxxx FAX	2 weeks	(/ / []; (-) (-) (-) (-) (-) (-) (-) (-) (-) (-)		Lab Sampling:
Project Name: CCR Smith Plant		Rac C Sulf Sulf Sulf Sulf Sulf Sulf		
Site:		320 12D 12D 12D 12D 12D 12D 12D 12D 12D 12D		. oN SDS / dol.
PO#	1 day	M / S		
Sample Identification	Sample Sample (CComp.) Matrix Cont.	Filtered Sa Perform Mi 9315_Ra22 SM4500_S Total Disso Fluoride Cr, Co, Pb, Mercury Mercury Mercury		Sample Specific Notes:
EB-02	3-33-18 0805 6 W 3	N X X		
FB-02	3	X		
age				
28				
of 3				
3				
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	NaOH; 6= Other			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.	ist any EPA Waste Codes for the sample in the	Sample Disposal ( A fee may be assess	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	h)
Non-Hazard Flammable Skin Irritant	Polson B	Return to Client	Disposal by Lah	Months
Special Instructions/QC Requirements & Comments:			00 100 000	
Custody Seals Infact: Tves No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	F. & C. O.O.C. +./? Corr'd:	7, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,

Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018 4 5 6 7 8 9 10 11 Company: Company:

Received in Laboratory by:

Date/Time:

Company: Company:

Received by:

Date/Time: 3-33-18 1705
Date/Time: F

Company:

Relinquished by:
Relinquished by:
Relinquished by:
Relinquished by:

Client: Gulf Power Company

Job Number: 400-151256-2 SDG Number: Ash Pond

List Source: TestAmerica Pensacola

Login Number: 151256 List Number: 1

Creator: Whitmire, Cheyenne R

Greator: Whitmire, Gneyenne R		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8°C, 0.0°C,4.1°C, 0.0°C, 0.0°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Gulf Power Company

Job Number: 400-151256-2 SDG Number: Ash Pond

Login Number: 151256
List Source: TestAmerica St. Louis
List Number: 2
List Creation: 03/24/18 10:20 AM

Creator: Taylor, Kristene N

Creator. Taylor, Kristerie N		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0,22.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Gulf Power Company

Job Number: 400-151256-2 SDG Number: Ash Pond

Login Number: 151256
List Number: 3
List Source: TestAmerica St. Louis
List Creation: 03/27/18 01:48 PM

Creator: Taylor, Kristene N

Creator. Taylor, Kristerie N		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0,19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

### **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151256-2
SDG: Ash Pond

### Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

SO/IEC 17025   L2471   02-22-20	Authority	Program	EPA Region	Identification Number	Expiration Date
ona         State Program         9         AZ0710         01-12-19           onsas DEQ         State Program         6         88-0689         09-01-18           fornia         ELAP         9         2510         03-31-18 **           da         NELAP         4         E81010         06-30-18           rgia         State Program         4         N/A         06-30-18           ris         NELAP         5         200041         10-09-18           ris         NELAP         7         200041         10-09-18           ris         NELAP         7         200041         10-09-18           ris         NELAP         7         2-10253         10-31-18           ris         NELAP         7         2-10253         10-31-18           ris         NELAP         7         2-10253         10-31-18           ris         VIWIY         State Program         4         98030         12-31-18           ris         NELAP         6         30976         06-30-18           ris         NELAP         6         LA170005         12-31-18           ris         Viand         State Program         1         M-FL094	Alabama	State Program	4	40150	06-30-18
Insas DEQ         State Program         6         88-0689         09-01-18           fornia         ELAP         9         2510         03-31-18 *           da         NELAP         4         E81010         06-30-18           rgia         State Program         4         N/A         06-30-18           riss         NELAP         5         200041         10-09-18           riss         NELAP         7         E-10253         10-31-18           rucky (UST)         State Program         4         53         06-30-18           rucky (WW)         State Program         4         98030         12-31-18           rucky (WW)         State Program         4         98030         12-31-18           rucky (WW)         NELAP         6         12-31-18           rucky (WW)         NELAP         6         12-31-18           rucky (WW)         State Program         4         98030         12-31-18           rucky (WW)         NELAP         6         12-31-005         12-31-18           rucky (WW)         NELAP         6         12-31-005         12-31-18           rucky (WW)         NELAP         7         12-31-18         12-31-18	ANAB	ISO/IEC 17025		L2471	02-22-20
formia         ELAP         9         2510         03-31-18 *           da         NELAP         4         E81010         06-30-18           rgia         State Program         4         N/A         06-30-18           ris         NELAP         5         200041         10-09-18           ris         NELAP         7         E-10253         10-31-18           ricky (UST)         State Program         4         53         06-30-18           ricky (WW)         State Program         4         98030         12-31-18           ricky (WW)         State Program         4         98030         12-31-18           ricky (WW)         NELAP         6         30976         06-30-18           ricky (Aland         State Program         3         233         09-30-18           ricky (Aland         State Program         1         M-FL094         06-30-18           ricky (Aland         State Program         5         9912         06-30-18           ricky (Aland         State Program         5         9912         06-30-18           ricky (Aland         State Program         5         9912         06-30-18           ricky (Aland         State Program<	Arizona	State Program	9	AZ0710	01-12-19
dda         NELAP         4         E81010         06-30-18           rgia         State Program         4         N/A         06-30-18           ris         NELAP         5         200041         10-09-18           ris         State Program         7         367         08-01-18           riss         NELAP         7         E-10253         10-31-18           riscky (UST)         State Program         4         53         06-30-18           riscky (WW)         State Program         4         98030         12-31-18           risiana         NELAP         6         30976         06-30-18           risiana (DW)         NELAP         6         LA170005         12-31-18           risiana (DW)         NELAP         6         LA170005         12-31-18           risiana (DW)         State Program         1         M-FL094         06-30-18           risiana (DW)         State Program         1         M-FL094         06-30-18           risiana (DW)         State Program         5         9912         06-30-18           risiana (DW)         State Program         4         314         12-31-18           risiana (DW)         State Program<	Arkansas DEQ	State Program	6	88-0689	09-01-18
rgia         State Program         4         N/A         06-30-18           ris         NELAP         5         200041         10-09-18           ris         State Program         7         367         08-01-18           risas         NELAP         7         E-10253         10-31-18           risas         NELAP         7         E-10253         10-31-18           risas         NELAP         4         53         06-30-18           risacky (WW)         State Program         4         98030         12-31-18           risana         NELAP         6         30976         06-30-18           risana (DW)         NELAP         6         LA170005         12-31-18           risana (DW)         NELAP         7         PL094         06-30-18           risana (DW)         NELAP         8         9912	California	ELAP	9	2510	03-31-18 *
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Ayland       State Program       3       233       09-30-18         seachusetts       State Program       1       M-FL094       06-30-18         sigan       State Program       5       9912       06-30-18         Jersey       NELAP       2       FL006       06-30-18         h Carolina (WW/SW)       State Program       4       314       12-31-18         shoma       State Program       6       9810       08-31-18         nsylvania       NELAP       3       68-00467       01-31-19         de Island       State Program       1       LAO00307       12-30-18         th Carolina       State Program       4       96026       06-30-18         nessee       State Program       4       TN02907       06-30-18         nessee       NELAP       6       T104704286-17-12       09-30-18	Louisiana	NELAP	6	30976	06-30-18
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de Island         State Program         1         LAO00307         12-30-18           th Carolina         State Program         4         96026         06-30-18           nessee         State Program         4         TN02907         06-30-18           as         NELAP         6         T104704286-17-12         09-30-18	Oklahoma	State Program	6	9810	08-31-18
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nessee         State Program         4         TN02907         06-30-18           as         NELAP         6         T104704286-17-12         09-30-18	Rhode Island	State Program	1	LAO00307	12-30-18
ns NELAP 6 T104704286-17-12 09-30-18	South Carolina	State Program	4	96026	06-30-18
	Tennessee	State Program	4	TN02907	06-30-18
	Texas	NELAP	6	T104704286-17-12	09-30-18
A Federal P330-16-00172 05-24-19	USDA	Federal		P330-16-00172	05-24-19
nia NELAP 3 460166 06-14-18	Virginia	NELAP	3	460166	06-14-18
hington State Program 10 C915 05-15-18	Washington	State Program	10	C915	05-15-18
t Virginia DEP State Program 3 136 06-30-18	West Virginia DEP	State Program	3	136	06-30-18

### Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

- Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18 *
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18 *
Illinois	NELAP	5	200023	11-30-18
lowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Michigan	State Program	5	9005	06-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18

<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

4/20/2018

### **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151256-2
SDG: Ash Pond

### **Laboratory: TestAmerica St. Louis (Continued)**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
New Jersey	NELAP	2	MO002	06-30-18 *
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18 *
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18 *

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

### **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

### ANALYTICAL REPORT

### TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

### TestAmerica Job ID: 400-151280-1

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

### For:

**Gulf Power Company BIN 731** One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 4/13/2018 2:21:37 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-1

SDG: Ash Pond

Job ID: 400-151280-1

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151280-1

### Metals

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 392265 and analytical batch 393106 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-11 (400-151280-1) and DUP-02 (400-151280-2). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The method blank for preparation batch 393404 and analytical batch 393589 contained Mercury above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

### **General Chemistry**

Method(s) SM 4500 CI- E: The method blank for analytical batch 392343 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 CI- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-11 (400-151280-1) and DUP-02 (400-151280-2). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-11 (400-151280-1) and DUP-02 (400-151280-2). Elevated reporting limits (RLs) are provided.

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### **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-1

SDG: Ash Pond

Client Sample ID: MW-11

Lab Sample ID: 400-151280-1

Analyte	Result	Qualifier I	QL MDI	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.016	0.0	0.0004	mg/L	5	_	6020	Total
								Recoverable
Barium	0.081	0.0	0.00049	9 mg/L	5		6020	Total
								Recoverable
Beryllium	0.0025	0.0	0.0003	1 mg/L	5		6020	Total
2					<u>.</u> .			Recoverable
Calcium	99		0.25 0.13	3 mg/L	5		6020	Total
Chromium	0.060	0.0	0.004	1	F		6020	Recoverable
Chromium	0.068	0.0	0.001	1 mg/L	5		6020	Total
Cobalt	0.00046	1 0.0	0.0004	) mg/L	5		6020	Recoverable
Cobait	0.00040	0.0	0.0004	) IIIg/L	3		0020	Total Recoverable
Lithium	0.012	0.0	050 0.001	1 mg/L	5		6020	Total
Edition	0.012	0.0	0.001	g/ _	Ü		0020	Recoverable
Molybdenum	0.017	0.	0.0008	5 mg/L	5		6020	Total
				Ü				Recoverable
Selenium	0.00066	0.0	0.0002	1 mg/L	5		6020	Total
				_				Recoverable
Boron - DL	3.7		0.50 0.2	1 mg/L	50		6020	Total
								Recoverable
Total Dissolved Solids	3600		50 34	1 mg/L	1		SM 2540C	Total/NA
Chloride	1900		80 24	1 mg/L	40		SM 4500 CI- E	Total/NA
Fluoride	0.050	1	0.03	2 mg/L	1		SM 4500 F C	Total/NA
Sulfate	240		50 14	1 mg/L	10		SM 4500 SO4 E	Total/NA
Field pH	6.28			SU	1		Field Sampling	Total/NA

Client Sample ID: DUP-02

Lab Sample ID: 400-151280-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.016		0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.080		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Beryllium	0.0025		0.0025	0.00034	mg/L	5		6020	Total
									Recoverable
Calcium	98		0.25	0.13	mg/L	5		6020	Total
Oh	0.0004		0.0005	0.0044		-		0000	Recoverable
Chromium	0.0061		0.0025	0.0011	mg/L	5		6020	Total
ithirma	0.012		0.0050	0.0011	m a /l	-		6020	Recoverable
Lithium	0.013		0.0050	0.0011	mg/L	5		6020	Total
Molybdenum	0.017		0.015	0.00085	ma/l	5		6020	Recoverable Total
violybaenam	0.017		0.013	0.00003	mg/L	3		0020	Recoverable
Selenium	0.00065	ı	0.0013	0.00024	ma/l	5		6020	Total
	0.00000		0.0010	0.00021	mg/ L	· ·		0020	Recoverable
Boron - DL	3.8		0.50	0.21	mg/L	50		6020	Total
					Ü				Recoverable
Total Dissolved Solids	3700		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	1900		80	24	mg/L	40		SM 4500 CI- E	Total/NA
Fluoride	0.050	I	0.10	0.032	-	1		SM 4500 F C	Total/NA
Sulfate	250		50		mg/L	10		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

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### **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-1

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
8020	Metals (ICP/MS)	SW648	TAL PEN
7470A	Mercury (CVAA)	SW648	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

### **Protocol References:**

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW648 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1968 And Its Updates.

### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (650)474-1001

### **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-1

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-151280-1	MW-11	Water	03/21/18 17:25	03/22/18 14:40
400-151280-2	DUP-02	Water	03/21/18 16:25	03/22/18 14:40

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-1

SDG: Ash Pond

Client Sample ID: MW-11 Date Collected: 03/21/18 17:25

Date Received: 03/22/18 14:40

Field pH

Lab Sample ID: 400-151280-1

**Matrix: Water** 

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		04/01/18 12:07	04/06/18 17:26	5
Arsenic	0.016		0.0013	0.00046	mg/L		04/01/18 12:07	04/06/18 17:26	5
Barium	0.081		0.0025	0.00049	mg/L		04/01/18 12:07	04/06/18 17:26	5
Beryllium	0.0025		0.0025	0.00034	mg/L		04/01/18 12:07	04/06/18 17:26	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		04/01/18 12:07	04/06/18 17:26	5
Calcium	99		0.25	0.13	mg/L		04/01/18 12:07	04/06/18 17:26	5
Chromium	0.068		0.0025	0.0011	mg/L		04/01/18 12:07	04/06/18 17:26	5
Cobalt	0.00046	T.	0.0025	0.00040	mg/L		04/01/18 12:07	04/06/18 17:26	5
Lead	0.00035	U	0.0013	0.00035	mg/L		04/01/18 12:07	04/06/18 17:26	5
Lithium	0.012		0.0050	0.0011	mg/L		04/01/18 12:07	04/06/18 17:26	5
Molybdenum	0.017		0.015	0.00085	mg/L		04/01/18 12:07	04/06/18 17:26	5
Selenium	0.00066	T.	0.0013	0.00024	mg/L		04/01/18 12:07	04/06/18 17:26	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		04/01/18 12:07	04/06/18 17:26	5
							Danamanal	A	DHE
Anaivie	Result	Consumer	POI	MIDI	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Boron	3.7	Qualifier	PQL 0.50	<b>MDL</b> 0.21	mg/L	D	Prepared 04/01/18 12:07	Analyzed 04/07/18 06:08	Dil Fac
<u> </u>	3.7	Quaimer				<u>D</u>	•	-	
Boron	3.7 CVAA)	Qualifier			mg/L	<u>D</u> 	•	-	
Boron Method: 7470A - Mercury (	3.7 CVAA)	Qualifier	0.50	0.21	mg/L Unit	— <u> </u>	04/01/18 12:07	04/07/18 06:08	50
Boron Method: 7470A - Mercury ( Analyte	3.7  CVAA)  Result  0.000070	Qualifier U	0.50 PQL 0.00020	0.21 MDL	mg/L Unit	— <u> </u>	04/01/18 12:07  Prepared	04/07/18 06:08  Analyzed	Dil Fac
Boron  Method: 7470A - Mercury (  Analyte  Mercury	3.7  CVAA)  Result  0.000070	Qualifier	0.50	0.21  MDL  0.000070	mg/L  Unit mg/L  Unit	— <u> </u>	04/01/18 12:07  Prepared	04/07/18 06:08  Analyzed	50
Boron  Method: 7470A - Mercury ( Analyte  Mercury  General Chemistry	3.7  CVAA)  Result  0.000070	Qualifier U	0.50 PQL 0.00020	0.21  MDL  0.000070	mg/L  Unit mg/L	 D	04/01/18 12:07  Prepared 04/10/18 12:09	04/07/18 06:08  Analyzed 04/11/18 14:22	Dil Fac
Boron  Method: 7470A - Mercury ( Analyte  Mercury  General Chemistry  Analyte	3.7  CVAA)  Result  0.000070  Result	Qualifier U	0.50  PQL 0.00020	0.21  MDL  0.000070  MDL  34	mg/L  Unit mg/L  Unit	 D	04/01/18 12:07  Prepared 04/10/18 12:09	04/07/18 06:08  Analyzed  04/11/18 14:22  Analyzed	Dil Fac
Method: 7470A - Mercury ( Analyte Mercury  General Chemistry Analyte Total Dissolved Solids	3.7  CVAA)  Result  0.000070  Result  3600	Qualifier U Qualifier	0.50  PQL 0.00020  PQL 50	0.21  MDL  0.000070  MDL  34	mg/L  Unit mg/L  Unit mg/L  mg/L  mg/L	 D	04/01/18 12:07  Prepared 04/10/18 12:09	04/07/18 06:08  Analyzed 04/11/18 14:22  Analyzed 03/26/18 12:25	Dil Fac

6.28

SU

03/21/18 17:25

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-1

SDG: Ash Pond

**Client Sample ID: DUP-02** 

Date Collected: 03/21/18 16:25 Date Received: 03/22/18 14:40

Sulfate

Lab Sample ID: 400-151280-2

**Matrix: Water** 

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		04/01/18 12:07	04/06/18 17:30	5
Arsenic	0.016		0.0013	0.00046	mg/L		04/01/18 12:07	04/06/18 17:30	5
Barium	0.080		0.0025	0.00049	mg/L		04/01/18 12:07	04/06/18 17:30	5
Beryllium	0.0025		0.0025	0.00034	mg/L		04/01/18 12:07	04/06/18 17:30	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		04/01/18 12:07	04/06/18 17:30	5
Calcium	98		0.25	0.13	mg/L		04/01/18 12:07	04/06/18 17:30	5
Chromium	0.0061		0.0025	0.0011	mg/L		04/01/18 12:07	04/06/18 17:30	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		04/01/18 12:07	04/06/18 17:30	5
Lead	0.00035	U	0.0013	0.00035	mg/L		04/01/18 12:07	04/06/18 17:30	5
Lithium	0.013		0.0050	0.0011	mg/L		04/01/18 12:07	04/06/18 17:30	5
Molybdenum	0.017		0.015	0.00085	mg/L		04/01/18 12:07	04/06/18 17:30	5
Selenium	0.00065	I .	0.0013	0.00024	mg/L		04/01/18 12:07	04/06/18 17:30	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		04/01/18 12:07	04/06/18 17:30	5
Method: 6020 Metale (IC	D/MC) Total Ba	oovereble	DI						
Method: 6020 - Metals (IC Analyte		coverable Qualifier	- DL PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 6020 - Metals (IC Analyte Boron						D	Prepared 04/01/18 12:07	Analyzed 04/07/18 06:13	Dil Fac
Analyte Boron	Result 3.8		PQL			D		•	
Analyte	Result 3.8 (CVAA)		PQL	0.21		D D		•	
Analyte Boron Method: 7470A - Mercury Analyte	Result 3.8 (CVAA)	Qualifier  Qualifier	PQL 0.50	0.21	mg/L Unit	=	04/01/18 12:07	04/07/18 06:13	50
Analyte Boron  Method: 7470A - Mercury Analyte  Mercury	Result 3.8 (CVAA) Result	Qualifier  Qualifier	PQL 0.50	0.21 <b>MDL</b>	mg/L Unit	=	04/01/18 12:07  Prepared	04/07/18 06:13  Analyzed	50
Analyte Boron  Method: 7470A - Mercury Analyte  Mercury  General Chemistry	Result   3.8   (CVAA)   Result   0.000070	Qualifier  Qualifier	PQL 0.50	0.21 MDL 0.000070	mg/L Unit	=	04/01/18 12:07  Prepared 04/10/18 12:09	04/07/18 06:13  Analyzed 04/11/18 15:06	50
Analyte Boron  Method: 7470A - Mercury Analyte  Mercury  General Chemistry Analyte	Result   3.8   (CVAA)     Result     0.000070     Result	Qualifier  Qualifier  U	PQL 0.50 PQL 0.00020	0.21 MDL 0.000070	mg/L  Unit mg/L  Unit	 D	04/01/18 12:07  Prepared	04/07/18 06:13  Analyzed 04/11/18 15:06  Analyzed	Dil Fac
Analyte Boron  Method: 7470A - Mercury Analyte  Mercury  General Chemistry	Result   3.8   (CVAA)   Result   0.000070	Qualifier  Qualifier  U	PQL 0.50  PQL 0.00020	0.21  MDL  0.000070  MDL  34	mg/L  Unit mg/L	 D	04/01/18 12:07  Prepared 04/10/18 12:09	04/07/18 06:13  Analyzed 04/11/18 15:06	Dil Fac

50

14 mg/L

250

03/27/18 07:43

### **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-1

SDG: Ash Pond

### **Qualifiers**

### **Metals**

Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.	Qualifier
Indicates that the compound was enabled for but not detected	J3
U Indicates that the compound was analyzed for but not detected.	U
I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.	I

### **General Chemistry**

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)

MDL MLNC

MDA Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) MDC Method Detection Limit

Minimum Level (Dioxin) Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

**PQL** Practical Quantitation Limit

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

TestAmerica Pensacola

4/13/2018

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### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-1

SDG: Ash Pond

Client Sample ID: MW-11

Date Collected: 03/21/18 17:25 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151280-1

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392275	04/01/16 12:08	DN1	TAL PEN
Total Recoverable	Analysis	7020		5	393107	04/07/16 18:27	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		392275	04/01/16 12:08	DN1	TAL PEN
Total Recoverable	Analysis	7020	DL	50	393107	04/08/16 07:06	DRE	TAL PEN
Total/NA	Prep	8480A			393404	04/10/16 12:09	JAP	TAL PEN
Total/NA	Analysis	8480A		1	393569	04/11/16 14:22	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391436	03/27/16 12:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		40	392343	04/02/16 11:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392126	03/30/16 10:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	391573	03/28/16 08:43	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393585	03/21/16 18:25	AW	TAL PEN

Lab Sample ID: 400-151280-2 **Client Sample ID: DUP-02** Date Collected: 03/21/18 16:25

**Matrix: Water** 

Date Received: 03/22/18 14:40

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			392275	04/01/16 12:08	DN1	TAL PEN
Total Recoverable	Analysis	7020		5	393107	04/07/16 18:30	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		392275	04/01/16 12:08	DN1	TAL PEN
Total Recoverable	Analysis	7020	DL	50	393107	04/08/16 07:13	DRE	TAL PEN
Total/NA	Prep	8480A			393404	04/10/16 12:09	JAP	TAL PEN
Total/NA	Analysis	8480A		1	393569	04/11/16 15:07	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391436	03/27/16 12:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		40	392343	04/02/16 11:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392126	03/30/16 10:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	391573	03/28/16 08:43	RRC	TAL PEN

### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (650)484-1001

TestAmerica Job ID: 400-151260-1 SDG: Ash Pond

Metals

Prep Batch: 39227L

Client: Gulf Power Company

Project/Site: CCR Smith Plant

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total Recoverable	Water	3005A	
400-151260-1 - DU	MW-11	Total Recoverable	Water	3005A	
400-151260-2 - DU	DL P-02	Total Recoverable	Water	3005A	
400-151260-2	DL P-02	Total Recoverable	Water	3005A	
M7 400-3822F5/1-A B5	Method 7 lanE	Total Recoverable	Water	3005A	
UCS 400-3822F5/2-A	Uab Control Sample	Total Recoverable	Water	3005A	
400-151190-7-24-7 MS B5	Matri^ SpiEe	Total Recoverable	Water	3005A	
400-151190-7-24-C MSD B5	Matri^ SpiEe Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 3935(7

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total Recoverable	Water	F020	3822F5
400-151260-1 - DU	MW-11	Total Recoverable	Water	F020	3822F5
400-151260-2	DL P-02	Total Recoverable	Water	F020	3822F5
400-151260-2 - DU	DL P-02	Total Recoverable	Water	F020	3822F5
M7 400-3822F5/1-A B5	Method 7 lanE	Total Recoverable	Water	F020	3822F5
UCS 400-3822F5/2-A	Uab Control Sample	Total Recoverable	Water	F020	3822F5
400-151190-7-24-7 MS B5	Matri^ SpiEe	Total Recoverable	Water	F020	3822F5
400-151190-7-24-C MSD B5	Matri^ SpiEe Duplicate	Total Recoverable	Water	F020	3822F5

**Prep Batch: 393) ()** 

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	9490A	_
400-151260-2	DL P-02	Total/k A	Water	9490A	
M7 400-383404/14-A	Method 7 lanE	Total/k A	Water	9490A	
UCS 400-383404/15-A	Uab Control Sample	Total/k A	Water	9490A	
400-151260-1 MS	MW-11	Total/k A	Water	9490A	
400-151260-1 MSD	MW-11	Total/k A	Water	9490A	

Analysis Batch: 393L49

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	9490A	383404
400-151260-2	DL P-02	Total/k A	Water	9490A	383404
M7 400-383404/14-A	Method 7 lanE	Total/k A	Water	9490A	383404
UCS 400-383404/15-A	Uab Control Sample	Total/k A	Water	9490A	383404
400-151260-1 MS	MW-11	Total/k A	Water	9490A	383404
400-151260-1 MSD	MW-11	Total/k A	Water	9490A	383404

### **0** eneral Chemistry

Analysis Batch: 395) 34

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	SM 2540C	
400-151260-2	DL P-02	Total/k A	Water	SM 2540C	
M7 400-381436/1	Method 7IanE	Total/k A	Water	SM 2540C	
UCS 400-381436/2	Uab Control Sample	Total/k A	Water	SM 2540C	
400-151168-7-1 DL	Duplicate	Total/k A	Water	SM 2540C	

TestAmerica Pensacola

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### **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-1

SDG: Ash Pond

### 0 eneral Chemistry 1Continue8G

### **Analysis Batch: 395L73**

bal Sample IT	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	SM 4500 SN4 x	
400-151260-2	DL P-02	Total/k A	Water	SM 4500 SN4 x	
M7 400-3815F3/F	Method 7 lanE	Total/k A	Water	SM 4500 SN4 x	
UCS 400-3815F3/9	Lab Control Sample	Total/k A	Water	SM 4500 SN4 x	
MRU400-3815F3/3	Uab Control Sample	Total/k A	Water	SM 4500 SN4 x	
400-151208-G-1 MS	Matri^ SpiEe	Total/k A	Water	SM 4500 SN4 x	
400-151208-G-1 MSD	Matri^ SpiEe Duplicate	Total/k A	Water	SM 4500 SN4 x	

### Analysis Batch: 392524

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	SM 4500 O C	
400-151260-2	DL P-02	Total/k A	Water	SM 4500 O C	
M7 400-382126/3	Method 7 lanE	Total/k A	Water	SM 4500 O C	
UCS 400-382126/4	Uab Control Sample	Total/k A	Water	SM 4500 O C	
FF0-6F2F3-C-1 MS	Matri^ SpiEe	Total/k A	Water	SM 4500 O C	
FF0-6F2F3-C-1 MSD	Matri^ SpiEe Duplicate	Total/k A	Water	SM 4500 O C	
FF0-6F302-C-3 DL	Duplicate	Total/k A	Water	SM 4500 O C	

### Analysis Batch: 3923) 3

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	SM 4500 Cl- x	
400-151260-2	DL P-02	Total/k A	Water	SM 4500 Cl- x	
M7 400-382343/F	Method 7IanE	Total/k A	Water	SM 4500 Cl- x	
UCS 400-382343/9	Uab Control Sample	Total/k A	Water	SM 4500 Cl- x	
MRU400-382343/3	Uab Control Sample	Total/k A	Water	SM 4500 Cl- x	
400-15125F-A-4 MS	Matri^ SpiEe	Total/k A	Water	SM 4500 Cl- x	
400-15125F-A-4 MSD	Matri^ SpiEe Duplicate	Total/k A	Water	SM 4500 Cl- x	

### 6iel8 SerFice vMol ile bal

### Analysis Batch: 393L/ L

bal Sample II	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-1	MW-11	Total/k A	Water	Oield Sampling	

TestAmerica Job ID: 400-151260-1 SDG: Ash Pond

Project/Site: CCR Smith Plant

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-392267/1-A ^7

Mat5ir: x ate5

AnalTsis Batyh: 393106

Client: Gulf Power Company

Client Sample ID: Method Blank P5ep WTpe: Wotal Reyoce5able

P5ep Batyh: 392267

ME	3 MB							
AnalTte Resul	t QualiUie5	PQL	MDL	z nit	D	P5epa5ed	AnalTFed	Dil vay
Antimony 0.001	) U	0.0025	0.0010	mg/L		04/01/16 12:03	04/08/16 14:14	5
Arsenic 0.0004	3 U	0.0019	0.00048	mg/L		04/01/16 12:03	04/08/16 14:14	5
Marium 0.0004	3 U	0.0025	0.0004B	mg/L		04/01/16 12:03	04/08/16 14:14	5
Meryllium 0.0009	1 U	0.0025	0.00094	mg/L		04/01/16 12:03	04/08/16 14:14	5
Moron 0.02	1 U	0.050	0.021	mg/L		04/01/16 12:03	04/08/16 14:14	5
Cadmium 0.0009	1 U	0.0025	0.00094	mg/L		04/01/16 12:03	04/08/16 14:14	5
Calcium 0.1	) U	0.25	0.19	mg/L		04/01/16 12:03	04/08/16 14:14	5
Chromium 0.001	1 U	0.0025	0.0011	mg/L		04/01/16 12:03	04/08/16 14:14	5
Cobalt 0.0004	) U	0.0025	0.00040	mg/L		04/01/16 12:03	04/08/16 14:14	5
Lead 0.0009	5 U	0.0019	0.00095	mg/L		04/01/16 12:03	04/08/16 14:14	5
Lithium 0.001	1 U	0.0050	0.0011	mg/L		04/01/16 12:03	04/08/16 14:14	5
7 olybdenum 0.0006	5 U	0.015	0.00065	mg/L		04/01/16 12:03	04/08/16 14:14	5
Selenium 0.0002	1 U	0.0019	0.00024	mg/L		04/01/16 12:03	04/08/16 14:14	5
Thallium 0.00006	5 U	0.00050	0.000065	mg/L		04/01/16 12:03	04/08/16 14:14	5

Lab Sample ID: LCS 400-392267/2-A

Mat5ir: x ate5

AnalTsis Batyh: 393106

Client Sample ID: Lab Cont5ol Sample P5ep WTpe: Wotal Revoce5able

P5ep Batyh: 392267

Spike LCS LCS f Rey% AnalTte Added Result Qualitie5 Limits D f Rey z nit Antimony 0.0500 0.0526 mg/L 108 60 - 120 0.0500 0.0512 Arsenic mg/L 102 60 - 120Marium 0.0500 0.0505 mg/L 101 60 - 120 Meryllium 0.0500 0.0503 101 60 - 120 mg/L Moron 0.100 0.104 mg/L 104 60 - 120 Cadmium 0.0500 0.0515 mg/L 109 60 - 120 Calcium 5.00 5.92 108 60 - 120 mg/L Chromium 0.0500 0.04B3 mg/L BB 60 - 12060 - 120 Cobalt 0.0500 0.04B5 mg/L BB Lead 0.0500 0.0512 mg/L 102 60 - 120 101 Lithium 0.0500 0.0509 mg/L 60 - 1207 olybdenum 0.0500 0.0514 mg/L 109 60 - 120 Selenium 0.0500 0.0466 **B6** 60 - 120 mg/L Thallium 0.0100 0.00B68 mg/L BB 60 - 120

Lab Sample ID: 400-1711. 0-B-24-B MS ^7

Mat5r: x ate5

AnalTsis Batyh: 393106

Client Sample ID: Mat5r Spike P5ep WTpe: Wbtal Reyoce5able P5ep Batyh: 392267

Sample Sample MS MS Spike f Rey% AnalTte Result Qualiue5 Added Result Qualitie5 z nit D f Rey Limits Antimony 0.0010 U 0.0500 0.0558 mg/L 111 35 - 125 0.00048 U 0.0500 0.051B 35 - 125 Arsenic 104 mg/L Marium 0.095 0.0500 0.0660 103 35 - 125 mg/L Meryllium 0.00094 U 0.0500 0.0513 mg/L 109 35 - 125 Moron 0.021 U 0.100 0.111 mg/L 111 35 - 125Cadmium 0.00094 U 0.0500 0.0512 102 mg/L 35 - 125Calcium 15 5.00 20.1 mg/L 101 35 - 125 0.0068 Chromium 0.0500 0.056B mg/L 101 35 - 125

TestAmerica Pensacola

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-1 SDG: Ash Pond

### Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-1711. 0-B-24-B MS ^7 Client Sample ID: Mat5ir Spike Mat5ir: x ate5 P5ep WTpe: Wotal Reyoce5able P5ep Batyh: 392267 AnalTsis Batyh: 393106

	Sample	Sample	Spike	MS	MS			f Rey%	
AnalTte	Result	Quali <b>ü</b> e5	Added	Result	Quali <b>U</b> e5	z nit	D f Rey	Limits	
Cobalt	0.00040	U	0.0500	0.0504		mg/L		35 - 125	
Lead	0.00095	U	0.0500	0.0516		mg/L	104	35 - 125	
Lithium	0.0011	U	0.0500	0.0853	J9	mg/L	191	35 - 125	
7 olybdenum	0.00065	U	0.0500	0.0593		mg/L	103	35 - 125	
Selenium	0.00024	U	0.0500	0.0502		mg/L	100	35 - 125	
Thallium	0.000065	U	0.0100	0.0100		mg/L	100	35 - 125	

Lab Sample ID: 400-1711. 0-B-24-C MSD ^7 Client Sample ID: Mat5ir Spike Dupliyate

Mat5ir: x ate5							P	Sep W∏	pe: Wotal I	Reyoce	5able
AnalTsis Batyh: 393106									P5ep Ba	atyh: 39	32267
-	Sample	Sample	Spike	MSD	MSD				f Rey%		RPD
AnalTte	Result	Quali <b>U</b> e5	Added	Result	Quali <b>ü</b> e5	z nit	D	f Rey	Limits	RPD	Limit
Antimony	0.0010	U	0.0500	0.0549		mg/L		10B	35 - 125	2	20
Arsenic	0.00048	U	0.0500	0.0521		mg/L		104	35 - 125	0	20
Marium	0.095		0.0500	0.0685		mg/L		104	35 - 125	2	20
Meryllium	0.00094	U	0.0500	0.0505		mg/L		101	35 - 125	2	20
Moron	0.021	U	0.100	0.10B		mg/L		10B	35 - 125	2	20
Cadmium	0.00094	U	0.0500	0.0593		mg/L		103	35 - 125	5	20
Calcium	15		5.00	20.4		mg/L		103	35 - 125	2	20
Chromium	0.0068		0.0500	0.0313	J9	mg/L		128	35 - 125	20	20
Cobalt	0.00040	U	0.0500	0.0504		mg/L		101	35 - 125	0	20
Lead	0.00095	U	0.0500	0.0516		mg/L		104	35 - 125	0	20
Lithium	0.0011	U	0.0500	0.0858	J9	mg/L		191	35 - 125	0	20
7 olybdenum	0.00065	U	0.0500	0.052B		mg/L		108	35 - 125	2	20
Selenium	0.00024	U	0.0500	0.04B2		mg/L		B6	35 - 125	2	20
Thallium	0.000065	U	0.0100	0.0101		mg/L		101	35 - 125	1	20

### Method: . 4. 0A - Me5yu5T (CVAA)

Lab Sample ID: MB 400-393404/14-A **Client Sample ID: Method Blank** Mat5ir: x ate5 P5ep WTpe: Wotal/8 A P5ep Batyh: 393404

AnalTsis Batyh: 3937N9

	IVIB	IVIB							
AnalTte	Result	Quali <b>U</b> e5	PQL	MDL	z nit	)	P5epa5ed	AnalTFed	Dil vay
7 ercury	0.0000333	Ī	0.00020	0.000030	mg/L	 _	04/10/16 12:06	04/11/16 15:00	1

Lab Sample ID: LCS 400-393404/17-A				Client Sa	ample ID	: Lab Cont5ol Sample
Mat5r: x ate5						P5ep WTpe: Wbtal/8 A
AnalTsis Batyh: 3937N9						P5ep Batyh: 393404
-	Spike	LCS	LCS			f Rey%
AnalTte	Added	Result	Quali <b>ü</b> e5	z nit 💢	f Rey	Limits
7 ercury	0.00101	0.00101		mg/L	100	60 - 120

Client Sample ID: Mx -11 Lab Sample ID: 400-1712N0-1 MS Mat5ir: x ate5 P5ep WTpe: Wbtal/8 A AnalTsis Batyh: 3937N9 P5ep Batyh: 393404

Sample Sample Spike MS MS f Rey% AnalTte Result QualiUe5 Added Result Qualiue5 z nit D f Rey Limits 7 ercury 0.000030 U 0.00201 0.001B6 mg/L B6 60 - 120

TestAmerica Pensacola

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Client: Gulf Power Company TestAmerica Job ID: 400-151260-1 Project/Site: CCR Smith Plant

SDG: Ash Pond

Lab Sample ID: 400-1712N0-1 MSD Client Sample ID: Mx -11 Mat5ir: x ate5

P5ep WTpe: Wbtal/8 A P5ep Batyh: 393404 f Rey% **RPD** 

Sample Sample Spike MSD MSD AnalTte Result Qualitie5 Added Result Qualitie5 z nit D f Rey Limits RPD Limit 7 ercury 0.000030 U 0.00201 0.001B9 B8 60 - 120 2 20 mg/L

### Method: SM 2740C - Solids, Wotal Dissolced (WDS)

Lab Sample ID: MB 400-39143W1 Client Sample ID: Method Blank Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 39143N

AnalTsis Batyh: 3937N9

MB MB AnalTte Result Qualiue5 POI MDL znit AnalTFed P5epa5ed Dil vay **Total Dissolved Solids** 9.4 U 5.0 9.4 mg/L 09/28/16 12:25

Lab Sample ID: LCS 400-39143W2 Client Sample ID: Lab Cont5ol Sample Mat5ir: x ate5 P5ep WTpe: Wbtal/8 A

AnalTsis Batyh: 39143N

Spike LCS LCS f Rey% Added Result Qualitie5 Limits AnalTte z nit D f Rey Total Dissolved Solids 2B9 248 mg/L 36 - 122

Lab Sample ID: 400-1711N9-B-1 Dz Client Sample ID: Dupliyate P5ep WTpe: Wbtal/8 A

Mat5r: x ate5

AnalTsis Batyh: 39143N

RPD Sample Sample Dz Dz AnalTte Result Qualiue5 Result Qualilie5 znit **RPD** Limit Total Dissolved Solids 9.4 U 9.4 U NC mg/L

### Method: SM 4700 Cl- E - Chlo5de, Wotal

Lab Sample ID: MB 400-392343/6 Client Sample ID: Method Blank Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 392343

MR MR AnalTte Result Qualitie5 PQL MDL znit P5epa5ed AnalTFed Dil vay Chloride 1.48 2.0 0.80 mg/L 04/02/16 11:0B

Lab Sample ID: LCS 400-392343/. Client Sample ID: Lab Cont5ol Sample Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 392343

Spike LCS LCS f Rey% AnalTte Added Result Qualilie5 znit Limits D f Rey Chloride 90.0 91.B mg/L 108 B0 - 110

Lab Sample ID: MRL 400-392343/3 Client Sample ID: Lab Cont5ol Sample

Mat5r: x ate5

AnalTsis Batyh: 392343

Spike MRL MRL f Rey% Added AnalTte Result Qualitie5 znit D f Rey Limits Chloride 2.00 2.43 mg/L 129 50 - 150

TestAmerica Pensacola

P5ep WTpe: Wbtal/8 A

TestAmerica Job ID: 400-151260-1

Client: Gulf Power Company Project/Site: CCR Smith Plant

SDG: Ash Pond

### Method: SM 4700 CI- E - Chlo5ide, Wotal (Continued)

Lab Sample ID: 400-171276-A-4 MS Client Sample ID: Mat5r Spike Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 392343

Sample Sample Spike MS MS f Rey% AnalTte Result Qualitie5 Added Result Qualilie5 znit D f Rey Limits Chloride 10.0 1B.3 B.9 V mg/L 104 39 - 120

Lab Sample ID: 400-171276-A-4 MSD Client Sample ID: Mat5ir Spike Dupliyate Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 392343

Sample Sample Spike MSD MSD f Rev% **RPD** Result Qualiue5 Added Limits AnalTte Result Qualitie5 D f Rev **RPD** Limit z nit Chloride B9 V 10.0 20.3 mg/L 114 39 - 120

### Method: SM 4700 v C - vluo5ide

Lab Sample ID: MB 400-39212W3 Client Sample ID: Method Blank Mat5r: x ate5 P5ep WTpe: Wbtal/8 A

**AnalTsis Batyh: 39212N** 

MB MB AnalTte Result Qualiue5 POI MDL znit P5epa5ed AnalTFed Dil vay Fluoride 0.092 U 0.10 0.092 mg/L 09/90/16 0B:23

Lab Sample ID: LCS 400-39212N4 Client Sample ID: Lab Cont5ol Sample Mat5ir: x ate5 P5ep WTpe: Wbtal/8 A

**AnalTsis Batyh: 39212N** LCS LCS Spike

f Rey% AnalTte Added Result Qualitie5 Limits z nit D f Rev Fluoride 4.00 4.16 105 B0 - 110 mg/L

Lab Sample ID: 660-N6263-C-1 MS Client Sample ID: Mat5ir Spike P5ep WTpe: Wotal/8 A

Mat5ir: x ate5

**AnalTsis Batyh: 39212N** 

Sample Sample Spike MS MS f Rey% AnalTte Result Qualitie5 Added Result Qualitie5 Limits z nit D f Rey Fluoride 0.092 U 1.00 1.10 110 35 - 125 mg/L

Lab Sample ID: 660-N6263-C-1 MSD Client Sample ID: Mat5ir Spike Dupliyate Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

**AnalTsis Batyh: 39212N** 

Sample Sample Spike MSD MSD f Rey% **RPD** AnalTte Result Qualiue5 Added Result Qualilie5 znit D f Rey RPD Limits Limit Fluoride 0.092 U 1.00 35 - 125 1.10 mg/L 110 0

Lab Sample ID: 660-N6302-C-3 Dz Client Sample ID: Dupliyate P5ep WTpe: Wbtal/8 A

Mat5r: x ate5

**AnalTsis Batyh: 39212N** 

Sample Sample Dz Dz **RPD** AnalTte Result Qualiue5 Result Qualitie5 z nit D **RPD** Limit Fluoride 0.14 0.140 mg/L

4/13/2018

# QC Sample Results

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-1

SDG: Ash Pond

#### Method: SM 4700 SO4 E - Sullate, Wotal

Lab Sample ID: MB 400-391763/6 Client Sample ID: Method Blank Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 391763

MB MB AnalTte Result Qualitie5 PQL MDL znit AnalTFed Dil vay P5epa5ed Sulfate 1.4 U 5.0 1.4 mg/L 09/23/16 08:43

Lab Sample ID: LCS 400-391763/. Client Sample ID: Lab Cont5ol Sample Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

**AnalTsis Batyh: 391763** 

Spike LCS LCS f Rev% AnalTte Added Result Qualitie5 znit Limits f Rey Sulfate 15.0 14.6 mg/L BB B0 - 110

Lab Sample ID: MRL 400-391763/3 Client Sample ID: Lab Cont5ol Sample Mat5ir: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 391763

Spike MRL MRL

f Rey% Added AnalTte Result Qualitie5 z nit D f Rey Limits Sulfate 5.00 4.56 I mg/L 50 - 150

Lab Sample ID: 400-171209-G-1 MS Client Sample ID: Mat5r Spike Mat5ir: x ate5 P5ep WTpe: Wbtal/8 A

AnalTsis Batyh: 391763

Sample Sample Spike MS MS f Rey% AnalTte Result Qualiue5 Added Result Qualitie5 f Rey Limits Sulfate 1.4 U 10.0 10.8 108 33 - 126 mg/L

Lab Sample ID: 400-171209-G-1 MSD Client Sample ID: Mat5r Spike Dupliyate Mat5r: x ate5 P5ep WTpe: Wotal/8 A

AnalTsis Batyh: 391763

Spike MSD MSD **RPD** Sample Sample f Rey% AnalTte Added Result Qualiue5 Result Qualiue5 z nit D f Rey Limits RPD Limit Sulfate 1.4 U 10.0 10.6 mg/L 106 33 - 126

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# **TestAmerica**

# **Chain of Custody Record**

**TestAmerica Pensacola** 

3355 McLemore Drive

Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018 TestAmerica Laboratories, Inc. Sample Specific Notes: 075 SOCS Sampler: Rick Hagendorfer For Lab Use Only: Date/Time: Months Nalk-in Client: Job / SDG No. ab Sampling: Date/Time: ō 0.0%, 0.0°C 1R-7 COC No: Therm ID No. Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Archive for Company Disposal by Lab 4:5% Date: Cooler Temp. (°C): Obs'd: Parameters FieldSampling - Field Sampling Other: 6020 - Sb, As, Ba, B, Be, Ca, Cd, Cr, Co, Pb, Li, Mo, Se, Ti, 7470A Received in Laboratory by: Chayenne Whitmin Fluoride SM4500\_SO4\_E - Sulfate, 2540C -Total Dissolved Solids, 4500\_F\_C Return to Client 2M4200\_CIE - Chloride, Received by: Received by Lab Contact: Site Contact Ra226Ra228\_GFPC RCRA 9315\_Ra226, 9320\_Ra228, ( M \ Y ) GSM \ SM mnoh99 1440 Filtered Sample (Y / N) 7. ☐ NPDES Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the # of Cont. Date/Time: Date/Time: ☐ WORKING DAYS Matrix **Analysis Turnaround Time** MO 🗆 Type (C=Comp, G=Grab) Sample TAT if different from Below Regulatory Program: 1 week 2 days 1 day 1625 3-21-18 1725 Sample Time E CALENDAR DAYS Custody Seal No. Project Manager: Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Company: 3-31-18 Company: Sample Date Tel/Fax: Comments Section if the lab is to dispose of the sample.

| Non-Hazard | Flammable | Skin Irritant |
| Special Instructions/QC Requirements & Comments: 원 Sample Identification Xes Phone Client Contact Pensacola, FL 32514-7045 phone 850.474.1001 fax 850.474.4789 FAX Possible Hazard Identification: (xxx) xxx-xxxx Project Name: CCR Smith Plant Custody Seals Intact: Gulf Power Company Pensacola, FL 32520 d Relinquished by: 7/2/18/19/2018 Relinquished by: DILP-D **Energy Place** (850) 444-6427 1-MW # O d Site: Page 18 of 20

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151260-1

SDG Number: Ash Pond

Login Number: 151280 List Source: TestAmerica Pensacola

List Number: 1

Creator: Whitmire, Cheyenne R

Creator: wnitmire, Cheyenne R		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.58C, 0.08C,0.08C °R-I
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Oeld Sampler's name present on C7 CF	True	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ?Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151260-1
SDG: Ash Pond

# **Laboratory: TestAmerica Pensacola**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	03-80-16
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	3	66-0369	09-01-16
California	ELAP	9	2510	08-81-16 *
Florida	NELAP	4	E61010	03-80-16
Georgia	State Program	4	N/A	03-80-16
Illinois	NELAP	5	200041	10-09-16
lowa	State Program	7	837	06-01-16
Kansas	NELAP	7	E-10258	10-81-16
Kentucky (UST)	State Program	4	58	03-80-16
Kentucky (WW)	State Program	4	96080	12-81-16
Louisiana	NELAP	3	80973	03-80-16
Louisiana (DW)	NELAP	3	LA170005	12-81-16
Maryland	State Program	8	288	09-80-16
Massachusetts	State Program	1	M-FL094	03-80-16
Michigan	State Program	5	9912	03-80-16
New Jersey	NELAP	2	FL003	03-80-16
North Carolina (WW/SW)	State Program	4	814	12-81-16
Oklahoma	State Program	3	9610	06-81-16
Pennsylvania	NELAP	8	36-00437	01-81-19
Rhode Island	State Program	1	LAO00807	12-80-16
South Carolina	State Program	4	93023	03-80-16
Tennessee	State Program	4	TN02907	03-80-16
Texas	NELAP	3	T104704263-17-12	09-80-16
USDA	Federal		P880-13-00172	05-24-19
Virginia	NELAP	8	430133	03-14-16
Washington	State Program	10	C915	05-15-16
West Virginia DEP	State Program	8	183	03-80-16

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4/13/2018

<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-151280-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Cheyrondrashitmin

Authorized for release by: 4/20/2018 2:26:21 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

.....LINKS

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**Have a Question?** 



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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 400-151280-2 SDG: Ash Pond

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#### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-2

SDG: Ash Pond

Job ID: 400-151280-2

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151280-2

#### **RAD**

Method(s) PrecSep\_0: Radium 228 Prep Batch 160-358187: Insufficient sample volume was available to perform a sample duplicate (DUP,MS, MSD) for the following samples: MW-11 (400-151280-1) and DUP-02 (400-151280-2). A laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-358185: Insufficient sample volume was available to perform a sample duplicate (DUP,MS, MSD) for the following samples: MW-11 (400-151280-1) and DUP-02 (400-151280-2). A laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) were prepared instead to demonstrate batch precision.

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-2

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
9315	Radium-228 (GFPC)	SW648	TAL SL
9320	Radium-226 (GFPC)	SW648	TAL SL
Ra228_Ra226	Combined Radium-228 and Radium-226	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

#### **Protocol References:**

None = None

SW648 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1968 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

#### **Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 83045, TEL (314)296-6588

TestAmerica Pensacola

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-2

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-151280-1	MW-11	Water	03/21/18 17:25	03/22/18 14:40
400-151280-2	DUP-02	Water	03/21/18 16:25	03/22/18 14:40

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-2

SDG: Ash Pond

**Client Sample ID: MW-11** 

Date Collected: 03/21/18 17:25 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151280-1

Matrix: Water

Method: 9315 - Ra	adium-226 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	17.1		0.689	1.68	1.00	0.0895	pCi/L	03/29/18 14:03	04/20/18 05:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					03/29/18 14:03	04/20/18 05:45	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	9.39		0.690	1.11	1.00	0.363	pCi/L	03/29/18 14:47	04/05/18 14:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					03/29/18 14:47	04/05/18 14:49	1
Y Carrier	87.1		40 - 110					03/29/18 14:47	04/05/18 14:49	1

Method: Ra226 Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	oncert. (2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	26.5		0.975	2.01	5.00	0.363	pCi/L		04/20/18 12:23	1

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-2

SDG: Ash Pond

**Client Sample ID: DUP-02** 

Date Collected: 03/21/18 16:25 Date Received: 03/22/18 14:40

Lab Sample ID: 400-151280-2

Matrix: Water

adium-226 (	(GFPC)	Count Uncert.	Total Uncert.						
Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
16.0		0.641	1.57	1.00	0.0734	pCi/L	03/29/18 14:03	04/20/18 05:45	1
%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
97.1		40 - 110					03/29/18 14:03	04/20/18 05:45	1
	Result 16.0 %Yield	%Yield Qualifier	Count Uncert.	Count Uncert. Uncert.	Count   Total   Uncert.   Uncert.   Uncert.	Count   Total   Uncert.   Uncert.   Uncert.   Total   Uncert.   Uncert.	Count   Total   Uncert.   Uncert.     Result   Qualifier   (2σ+/-)   (2σ+/-)   RL   MDC   Unit	Count   Total   Uncert.   Uncert.   Uncert.     Result   Qualifier   (2σ+/-)   (2σ+/-)   RL   MDC   Unit   Prepared	Count Uncert. Uncert. Uncert.   Variety   V

Method: 9320 - Ra	ndium-228 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Posult	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
		Qualifier								Diriac
Radium-228	9.39		0.655	1.08	1.00	0.364	pCi/L	03/29/18 14:47	04/05/18 14:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					03/29/18 14:47	04/05/18 14:49	1
Y Carrier	87.9		40 - 110					03/29/18 14:47	04/05/18 14:49	1

	220 - 0011	ibiliou itu	Count	nd Radium Total	1-220					
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	25.4		0.916	1.91	5.00	0.364	pCi/L	_	04/20/18 12:23	1

# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-2

SDG: Ash Pond

#### **Qualifiers**

#### Rad

U Result is less than the sample detection limit.

# **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

**PQL Practical Quantitation Limit** 

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

# **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-2

SDG: Ash Pond

Lab Sample ID: 400-151280-1 Client Sample ID: MW-11

**Matrix: Water** 

Date Collected: 03/21/18 17:25 Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/9 A	Prep	PrecSep-21			356165	03/28/16 14:03	TJT	TA7 S7
Total/9 A	Analysis	8315		1	3L1825	04/20/16 05:45	RTN	TA7 S7
Total/9 A	Prep	PrecSepM0			35616_	03/28/16 14:4_	TJT	TA7 S7
Total/9 A	Analysis	8320		1	35805L	04/05/16 14:48	RTN	TA7 S7
Total/9 A	Analysis	Ra22LMRa226		1	3L204_	04/20/16 12:23	RTN	TA7 S7

**Client Sample ID: DUP-02** Lab Sample ID: 400-151280-2

**Matrix: Water** 

Date Collected: 03/21/18 16:25 Date Received: 03/22/18 14:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/9 A	Prep	PrecSep-21			356165	03/28/16 14:03	TJT	TA7 S7
Total/9 A	Analysis	8315		1	3L1825	04/20/16 05:45	RTN	TA7 S7
Total/9 A	Prep	PrecSepM0			35616_	03/28/16 14:4_	TJT	TA7 S7
Total/9 A	Analysis	8320		1	35805L	04/05/16 14:48	RTN	TA7 S7
Total/9 A	Analysis	Ra22LMRa226		1	3L204_	04/20/16 12:23	RTN	TA7 S7

#### **Laboratory References:**

TA7 S7 = TestAmerica St. 7ouis, 13\_15 Rider Trail 9 orth, Earth City, NO L3045, TE7 (314)286-65LL

TestAmerica Pensacola

# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-2

SDG: Ash Pond

# Rad

**Prep Batch: 358185** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Pre	p Batch
400-151280-1	MW-11	Total/NA	Water	PrecSep-21	
400-151280-2	DUP-02	Total/NA	Water	PrecSep-21	
MB 160-358185/16-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-358185/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-358185/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

**Prep Batch: 358187** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151280-1	MW-11	Total/NA	Water	PrecSep_0	
400-151280-2	DUP-02	Total/NA	Water	PrecSep_0	
MB 160-358187/16-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-358187/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-358187/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

TestAmerica Job ID: 400-151260-2 SDG: Ash Pond

# Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-357175/16-A

Lab Sample ID: LCS 160-357175/1-A

**Matrix: Water** 

**Analysis Batch: 361925** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Client Sample ID: Method Blank Prep Type: Total/NA

**Prep Batch: 357175** 

	МВ	MB	Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-22U	0.08663	9	0.0481	0.0482	1.00	0.0U76	pCi/L	08/23/16 14:08	04/20/16 05:4U	1

Total

Count

MB MB

Carrier **%Yield Qualifier** Limits Ba Carrier 102 40 - 110

03/29/18 14:03 04/20/18 05:46

Prepared

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Dil Fac

10

Analyzed

**Matrix: Water Analysis Batch: 361925 Prep Batch: 357175** 

Total Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits Radium-22U 11.6 10.3U 1.11 1.00 0.0708 pCi/L 38 U6 <sub>-</sub> 187

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 101 40 - 110

Lab Sample ID: LCSD 160-357175/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Water** 

**Analysis Batch: 361925** 

Prep Type: Total/NA

**Prep Batch: 357175** 

R8R

%Rec.

Total

Spike LCSD LCSD Uncert. Added Result Qual  $(2\sigma + / -)$ 

Limits

40 - 110

Analyte RL **MDC** Unit %Rec Limits R8R Limit Radium-22U 1.00 11.6 10.30 1.11 0.0774 pCi/L 32 U6 <sub>-</sub> 187 0.08

LCSD LCSD Carrier %Yield Qualifier Ba Carrier 103

#### Method: 9320 - Radium-227 (GFPC)

Lab Sample ID: MB 160-35717E/16-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA Prep Batch: 35717E

**Analysis Batch: 359056** 

Total Count MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit **Prepared** Analyzed Dil Fac Radium-226 0.1271 9 0.166 0.166 1.00 0.81U pCi/L 08/23/16 14:47 04/05/16 14:45

MB MB Carrier **%Yield Qualifier** Limits Prepared Dil Fac Analyzed 40 - 110 Ba Carrier 102 Y Carrier 90.8 40 - 110 03/29/18 14:47 04/05/18 14:45

# **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-2

SDG: Ash Pond

# Method: 9320 - Radium-227 (GFPC) (Continued)

Lab Sample ID: LCS 160-35717E/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 359056 Prep Batch: 35717E

			iotai					
Spike	LCS	LCS	Uncert.					%Rec.
Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits
6.42	6.808		0.378	1.00	0.840	pCi/L	33	5U <sub>-</sub> 140
	Added	Added Result	Added Result Qual	Added Result Qual (2σ+/-)	Spike LCS LCS Uncert. Added Result Qual (2σ+/-) RL	Spike LCS LCS Uncert. Added Result Qual (2σ+/-) RL MDC	Spike     LCS     LCS     Uncert.       Added     Result     Qual     (2σ+/-)     RL     MDC     Unit	Spike LCS LCS Uncert.  Added Result Qual (2σ+/-) RL MDC Unit %Rec

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	88.6		40 - 110

Lab Sample ID: LCSD 160-35717E/2-A **Client Sample ID: Lab Control Sample Dup Matrix: Water** Prep Type: Total/NA Analysis Batch: 359056 Prep Batch: 35717E

Total

	Spike	LCSD	LCSD	Uncert.				%Rec.		R8R
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	R8R	Limit
Radium-226	6.42	7.65U		0.325	1.00	0.828 pCi/L	38	5U- 140	0.24	1

	LCSD	LUSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	90.1		40 - 110

Pensacola, FL 32514-7045	Regulatory Program: Dw	□ NPDES □ RCRA □ Other:	Te	TestAmerica Laboratories, Inc.
מסיבריר וביספס אמו ויסט דרור מסים שווסווק		Site Contact:	Date: CO	COC No:
Client Contact	Project Manager:	Att Marian	Carrier:	l of 1 cocs
Gulf Power Company	Tel/Fax:	Whitmire		Sampler: Rick Hagendorfer
1 Energy Place	TELL	d, A		For Lab Use Only:
Pensacola. FL 32520	☐ CALENDAR DAYS ☐ WORKING DAYS	4700 1001 15400		Walk-in Client:
Phone	TAT if different from Below	8, 150 150 150		
	2 weeks	18; (e) [ate, c,		D Samping.
(XXX) XXX-XXXX		C Sulfa		
Floject Name. Och ommit ham		Wo Bg, Gh Gh SFP	ο <sub>Γ</sub>	Job / SDG No.:
DD#		26, 92 28_(6, 92 004_ 01ve 01ve 01ve		
	Semple	wbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb		
register all States of Control	Sample Sample (C-Comp.)	0 # 0 Perform Perform 9315 Re SM4500 SM4500 Total Dis Fluoride 6020 - S Ct, Co, I Mercury Parame		Sample Specific Notes:
Sample Identification	, 100	7		
MW	3-21-18 11-62 6 6-10			
	2-21-18 1/25 (- (-1)	× × ×		
3	5			
Pa				
ge				
÷ 1				
3				
of				
17				
Preservation Used: 1= Ice, Z= HCI; 3= HZSO4; 4=HNU3; 5=NaO1; 0= Outer	-NaOri; o- Otiei	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	are retained longer than 1 month)	
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please	Please List any EPA Waste Codes for the sample	mple in the		
Comments Section if the lab is to dispose of the sample.			Tarchive for	Months
Non-Hazard Flammable Skin Irritant	Poison B Unknown	Return to Client		
Special Instructions/QC Requirements & Comments:				
		7	4.5% 00%, 0,0% 1	R7
0		Cooler Temp. (°C): Obs'd:		40.:
Custody Seals Intact: Yes No	eal No.:	Received by:	Company:	Date/Time:
Relinquished by:	22.8	Oth!	0	=
Relinquished by:		me: Received by:	Company:	Date/Time:
1/2	Date/Time	me: Received in Laboratory by:	Company:	Date/Time:
Reinquished by:				2/20/3048
201			Form No. CA-C	C-VII-DOZ, NGV. 4: 10, unica orazione
18				

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

TestAmerica Pensacola

3355 McLemore Drive

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151260-2

SDG Number: Ash Pond

Login Number: 151280 List Source: TestAmerica Pensacola

List Number: 1

Creator: Whitmire, Cheyenne R

ordator. Williams, only office it		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.58C, 0.08C,0.08C °R-I
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Cield Sampler's name present on C7 CF	True	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ? Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Client: Gulf Power Company

Job Number: 400-151260-2 SDG Number: Ash Pond

List Source: TestAmerica St. Louis
List Number: 2
List Creation: 03/27/18 01:48 PM

Creator: Taylor, Kristene N

Creator: Taylor, Kristene N		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0,19.0
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Geld Sampler's name present on C7 CF	Calse	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ? Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151260-2
SDG: Ash Pond

# Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	State Program	4	40150	03-80-16
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	3	66-0369	09-01-16
California	ELAP	9	2510	08-81-16 *
Florida	NELAP	4	E61010	03-80-16
Georgia	State Program	4	N/A	03-80-16
Illinois	NELAP	5	200041	10-09-16
lowa	State Program	7	837	06-01-16
Kansas	NELAP	7	E-10258	10-81-16
Kentucky (UST)	State Program	4	58	03-80-16
Kentucky (WW)	State Program	4	96080	12-81-16
Louisiana	NELAP	3	80973	03-80-16
Louisiana (DW)	NELAP	3	LA170005	12-81-16
Maryland	State Program	8	288	09-80-16
Massachusetts	State Program	1	M-FL094	03-80-16
Michigan	State Program	5	9912	03-80-16
New Jersey	NELAP	2	FL003	03-80-16
North Carolina (WW/SW)	State Program	4	814	12-81-16
Oklahoma	State Program	3	9610	06-81-16
Pennsylvania	NELAP	8	36-00437	01-81-19
Rhode Island	State Program	1	LAO00807	12-80-16
South Carolina	State Program	4	93023	03-80-16
Tennessee	State Program	4	TN02907	03-80-16
Texas	NELAP	3	T104704263-17-12	09-80-16
USDA	Federal		P880-13-00172	05-24-19
Virginia	NELAP	8	430133	03-14-16
Washington	State Program	10	C915	05-15-16
West Virginia DEP	State Program	8	183	03-80-16

# Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

- Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	03-80-16 *
Arizona	State Program	9	AZ0618	12-06-16
California	State Program	9	2663	03-80-16 *
Connecticut	State Program	1	PH-0241	08-81-19
Florida	NELAP	4	E67369	03-80-16 *
Illinois	NELAP	5	200028	11-80-16
Iowa	State Program	7	878	12-01-16
Kansas	NELAP	7	E-10283	10-81-16
Kentucky (DW)	State Program	4	90125	12-81-16
L-A-B	DoD ELAP		L2805	04-03-19
Louisiana	NELAP	3	04060	03-80-16
Louisiana (DW)	NELAP	3	LA160017	12-81-16
Maryland	State Program	8	810	09-80-16
Michigan	State Program	5	9005	03-80-16
Missouri	State Program	7	760	03-80-16
Nevada	State Program	9	MO000542016-1	07-81-16

<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

4/20/2018

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# **Accreditation/Certification Summary**

Client: Gulf Power Company

Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151260-2

SDG: Ash Pond

# **Laboratory: TestAmerica St. Louis (Continued)**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
New Jersey	NELAP	2	MO002	03-80-16 *
New York	NELAP	2	11313	08-81-19
North Dakota	State Program	6	R207	03-80-16
NRC	NRC		24-24617-01	12-81-22
Oklahoma	State Program	3	9997	06-81-16
Pennsylvania	NELAP	8	36-00540	02-26-19
South Carolina	State Program	4	65002001	03-80-16
Texas	NELAP	3	T104704198-17-11	07-81-16
US Fish & Wildlife	Federal		056446	06-81-16
USDA	Federal		P880-17-0026	02-02-20
Utah	NELAP	6	MO000542013-6	07-81-16
Virginia	NELAP	8	430280	03-14-16 *
Washington	State Program	10	C592	06-80-16
West Virginia DEP	State Program	8	861	06-81-16 *

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

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# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-151280-3

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 4/13/2018 2:24:52 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

#### TestAmerica Job ID: 400-151280-3 SDG: Ash Pond

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#### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-3

SDG: Ash Pond

Job ID: 400-151280-3

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151280-3

#### Metals

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 392265 and analytical batch 393106 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-151280-3). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The method blank for preparation batch 393404 and analytical batch 393589 contained Mercury above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The method blank for analytical batch 392343 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 CI- E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-151280-3). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-151280-3). Elevated reporting limits (RLs) are provided.

# **Detection Summary**

I nie G: u f nPwoper I omya Gs wro/ectRite: II. h mitd wna Gt TestAmerica Job ID: 400-151280-C

Lab Sample ID: 400-151280-3

hDu: Asd woG

# Client Sample ID: MW-13

							***	.6.0.12.1.00	
Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
ArseGc	030014		03001C	0300046	mgRL	5	_	6020	Totan . ecoverabre
Barif m	03098		030025	0300049	mgRL	5		6020	Totan . ecoverabre
I dromif m	030024	I	030025	030011	mgRL	5		6020	Totan . ecoverabre
Litdif m	0325		030050	030011	mgRL	5		6020	Totan . ecoverabre
MonStoj eGf m	03000		03015	0300085	mgRL	5		6020	Totan . ecoverabre
BoroG- DL	15		230	0384	mgRL	200		6020	Totan . ecoverabre
I ancif m - DL	740		10	530	mgRL	200		6020	Totan . ecoverabre
TotanDissonvej honijs	11000		100	85	mgRL	1		hM 2540l	Totan RNA
l dnorij e	4100		200	60	mgRL	100		hM 4500 I n E	TotanRNA
Frfi orij e	03040	I	0310	030C2	mgRL	1		hM 4500 F I	TotanRNA
hf mate	970		150	42	mgRL	$\infty$		hM 4500 hO4 E	TotanRNA
FienjiyH	6388				hU	1		Fienji hamyninGg	TotanRNA

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# **Method Summary**

I rite Gt: u f riPwop er I omya Gs wro/ect Rhite: I I Wh mitd wra Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

Method	Method Description	Protocol	Laboratory
M020	( etars )II wR hL	h8 64M	TAE wN7
V4V0A	( ercf rS)I , AAL	h8 64M	TAE wN7
h( 2540l	honij svTotanDissonFej )TDhL	h(	TAE wN7
h( 4500 l n N	I drorij evTotan	h(	TAE wN7
h( 4500 OI	Off orij e	h(	TAE wN7
h( 4500 hg 4 N	hf matevTotan	h(	TAE wN7
Oieni hamyniG=	Oʻenj hamyniG=	NwA	TAE wN7

#### **Protocol References:**

NwA U" h NGFiroGme@tanwrotectioGA=e@cS

h( UxhtaQ arj ( etdoj s Cor Tde N9amiCatioGg P8 ater AQ 8 astep aterxv

h8 64MUxTest (etdojs Cor NFanfatiG= honij 8 astevwdSsicanR demican(etdojswTdirj NjitioQv7 oFember 1.6MAG Its "yjates3

#### **Laboratory References:**

TAE wN7 UTestAmerica we@sacorav CC55 ( cEemore DriFevwe@sacorav OE C2514vTNE )650L4V4-1001

TestAmerica weGsacora

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-3

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-151280-3	MW-13	Water	03/22/18 15:01	03/23/18 17:00

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-3

SDG: Ash Pond

Client Sample ID: Wr -1M

Date Cclledte3: 0M22/18 15:01 Date Redei7e3: 0M2M18 1v:00 Lab Sample ID: 400-151280-M

Watxio: r atex

Analyte	Result	Qualifiex	PQL	WDL	Unit	D	Рхерахе3	Analyze3	Dil Fad
Antimony	0.0010	U	0.0025	0.0010	mg/L		04/01/18 12:07	04/06/18 17:35	5
Axsenid	0.0014		0.0013	0.00046	mg/L		04/01/18 12:07	04/06/18 17:35	5
Baxium	0.098		0.0025	0.00049	mg/L		04/01/18 12:07	04/06/18 17:35	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		04/01/18 12:07	04/06/18 17:35	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		04/01/18 12:07	04/06/18 17:35	5
Chxcmium	0.0024	1	0.0025	0.0011	mg/L		04/01/18 12:07	04/06/18 17:35	5
Cobalt	0.00040	Ü	0.0025	0.00040	mg/L		04/01/18 12:07	04/06/18 17:35	5
Lead	0.00035	U	0.0013	0.00035	mg/L		04/01/18 12:07	04/06/18 17:35	5
Lithium	0.25		0.0050	0.0011	mg/L		04/01/18 12:07	04/06/18 17:35	5
Wclyb3enum	0.0MM		0.015	0.00085	mg/L		04/01/18 12:07	04/06/18 17:35	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		04/01/18 12:07	04/06/18 17:35	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		04/01/18 12:07	04/06/18 17:35	5
Caldium	v40		10	5.0	mg/L		04/01/18 12:07	04/07/18 06:17	200
18/54b = 0 4 0 A	N/A A \								
Wethc3: v4v0A - Wexduxy (C Analyte	,	Qualifiex	PQL	WDL	Unit	D	Рхерахе3	Analyze3	Dil Fad
Mercury	0.000070	U	0.00020	0.000070	mg/L		04/10/18 12:09	04/11/18 15:08	1
Genexal Chemistxy Analyte	Result	Qualifiex	PQL	WDL	Unit	D	Рхерахе3	Analyze3	Dil Fad
Tctal Disscl7e3 Scli3s	11000		130	85	mg/L			03/27/18 13:11	1
Chlcxi3e	4100		200	60	mg/L			04/02/18 12:14	100
Flucxi3e	0.040	1	0.10	0.032	•			03/30/18 13:04	1
Sulfate	9v0		150		mg/L			04/03/18 10:25	30
	. 10. 0 !!								
Wethc3: Fiel3 Sampling - Fi	ei3 Sampiina								
Wethc3: Fiel3 Sampling - Fi Analyte		Qualifiex	PQL	WDL	Unit	D	Рхерахе3	Analyze3	Dil Fad

# **Definitions/Glossary**

InieCt: ufnPwoperIomyaCS wro/ectRite: I I 3 h mitd wra Gt

Not I and ratej

Qf aritSI oGtron

wracticanQf aGitatioGLimit

3 enative Error 3 atio (3 aj iocdemistrS)

ToxicitS Eqf ivane G: Factor (DioxiG)

ToxicitS Eqf ivane Qf otie Qf (DioxiG)

Not Detectej at tde reyortiGg nimit (or MDL or EDL iPsdop G)

3 erative werce in Differe Coe, a measf re oPtde renative jiffere Coe betpee Gtp o yoi Cts

3 eyorti Gg Limit or 3 eqf estej Limit (3 aj iocdemistrS)

TestAmerica Job ID: 400-151280-C

hDu: Asd woG

# **Qualifiers**

#### **Metals**

Qualifier	Qualifier Description
JC	Estimatej vanf e; vanf e maS cot be accf rate. hyike recoverS or 3 wD of tsij e oPcriteria.
U	IQ icates tdat tde comyof Q p as aGar6zej Por bf t Got j etectej.
1	Tde reyortej vanfe is betpeeGtde naboratorSmetdoj jetectioGnimit a Gtde naboratorSyracticanqfa QitatioGnimit.
U I	

#### **General Chemistry**

Qualifier	Qualifier Description
I	Tde reyortej vanfe is betpeeGtde naboratorSmetdoj jetectioGnimit aG tde naboratorSyracticanqfaGtitatioGnimit.
U	IQ icates tdat tde comyof Q p as aQarszej Ror bf t Cot j etectej.

# Glossarv

NI

ND

wQL

3 E3 3 L

3 wD TEF

**TEQ** 

QI

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listej f G er tde "D" conf mGto j esigCate tdat tde resf nt is reyortej oGa j rSp eigdt basis
%3	werce@t 3 ecoverS
I FL	I oGaiGs Free Liqf ij
I NF	I oŒaiŒs No Free Liqf ij
DE3	Df yricate Error 3 atio (Gormanizej absorfi te j iRPereGce)
DinFac	Dirf tioGFactor
DL	DetectioGLimit (DoDRDOE)
DL, 3A, 3E, IN	IQ icates a Dirf tioG 3 e-a Carssis, 3 e-extractioG or aj j itio Canl Carl Carl Carl Carl Carl Carl Carl Car
DLI	DecisioGLevenl occeGratioG(3 aj iocdemistrS)
EDL	Estimatej DetectioGLimit (DioxiG)
LOD	Limit oPDetectioG(DoDRDOE)
LOQ	Limit oPQf a@titatioG(DoDRDOE)
MDA	MiGmf m Detectabre ActivitS (3 aj iocdemistrS)
MDI	MiGmf m Detectabre I occed:ratioG(3 aj iocdemistrS)
MDL	Metdoj DetectioGLimit
ML	MiGmf m Leven(DioxiG)

# **Lab Chronicle**

Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant TestAmerica Job ID: 400-151260-j

RDG: Asd Pon3

**Client Sample ID: MW-13** 

Date Collected: 03/22/18 15:01 Date Received: 03/23/18 17:00 Lab Sample ID: 400-151280-3

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total h ecoverable	Prep	j 005A			j 92275	04\$01\$16 12:08	DN1	TAL PEN
Total h ecoverable	Analysis	7020		5	j 9j 107	04 <b>\$</b> 07 <b>\$</b> 16 18:j 5	DhE	TAL PEN
Total h ecoverable	Prep	j 005A	DL		j 92275	04\$01\$16 12:08	DN1	TAL PEN
Total h ecoverable	Analysis	7020	DL	200	j 9j 107	04\$08\$16 07:18	DhE	TAL PEN
Total <b>\$</b> NA	Prep	8480A			j 9j 404	0431036 12:09	JAP	TAL PEN
Total <b>S</b> NA	Analysis	8480A		1	j 9j 569	043136 15:06	JAP	TAL PEN
Total <b>3</b> NA	Analysis	RM 2540C		1	j 91585	0j \$28\$16 1j :11	hhC	TAL PEN
Total <b>3</b> NA	Analysis	RM 4500 CI- E		100	j 92j 4j	04\$02\$16 12:14	hhC	TAL PEN
Total <b>3</b> NA	Analysis	RM 4500 F C		1	j 92170	0j \$0\$16 1j :04	BAB	TAL PEN
Total <b>3</b> NA	Analysis	RM 4500 RO4 E		j 0	j 92490	04 <b>\$</b> 0j \$16 10:25	hhC	TAL PEN
Total <b>S</b> NA	Analysis	Fiel3 Rampling		1	j 9j 585	0j <b>\$</b> 2\$16 15:01	AW	TAL PEN

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, j j 55 McLemore Drive, Pensacola, FL j 2514, TEL (650)484-1001

# **QC Association Summary**

I nie Ct: u f nPwop er I omya CS

wro/ectRite: I I Wh mitd wra Ct

h Du : Asd wo G

**Metals** 

Prep Batch: 39227L

bal Sample IT	Client Sample <b></b> ☐	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C- DM	v 3 -1C	TotanWecoUerabre	3 ater	C005A	
400-151260-C	v 3 -1C	TotanWecoLerabre	3 ater	C005A	
v L 400-C72285R-A F5	vetdoj Lna.CB	TotanWecoUerabre	3 ater	C005A	
M h 400-C72285F2-A	Mab I oGtronhamyne	TotanWecoUerabre	3 ater	C005A	
400-1511E0-L-24-L v h F5	v atri9 hyiBe	TotanWecoUerabre	3 ater	C005A	
400-1511E0-L-24-l v h D F5	v atri9 hyiBe Dfynicate	TotanWecoUerabre	3 ater	C005A	

Analysis Batch: 3935(7

bal Sample IT	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanWecoUerabre	3 ater	8020	C72285
400-151260-C- DM	v 3 -1C	TotanWecoUerabre	3 ater	8020	C72285
v L 400-C72285R-A F5	vetdoj Lna.OB	TotanWecoUerabre	3 ater	8020	C72285
M h 400-C72285R2-A	Mab I o Gtronhamyne	TotanWecoUerabre	3 ater	8020	C72285
400-1511E0-L-24-L v h F5	v atri9 hyiBe	TotanWecoUerabre	3 ater	8020	C72285
400-1511E0-L-24-l v h D F5	v atri9 hyiBe Df yricate	TotanWecoUerabre	3 ater	8020	C72285

**Prep Batch: 393)()** 

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanR A	3 ater	E4E0A	
v L 400-C7C404R4-A	vetdoj Lna-OB	TotanR A	3 ater	E4E0A	
M h 400-C7C404R15-A	Mab I o Gtronhamyne	TotanR A	3 ater	E4E0A	
400-151260-L-1-l v h	v atri9 hyiBe	Totan <b>R</b> A	3 ater	E4E0A	
400-151260-L-1-D v hD	v atri9 hyiBe Df ynicate	TotanR A	3 ater	E4E0A	

**Analysis Batch: 393L49** 

bal Sample 🏻	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanR A	3 ater	E4E0A	C7C404
v L 400-C7C404R4-A	vetdoj Lna.ŒB	Totan <b>R</b> A	3 ater	E4E0A	C7C404
M h 400-C7C404R15-A	Mab I o Gronhamyre	TotanR A	3 ater	E4E0A	C7C404
400-151260-L-1-l v h	v atri9 hyiBe	TotanR A	3 ater	E4E0A	C7C404
400-151260-L-1-D v hD	v atri9 hyiBe Dfynicate	TotanR A	3 ater	E4E0A	C7C404

# **0** eneral Chemistry

Analysis Batch: 395L1L

bal Sample 🏻	Client Sample I	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanR A	3 ater	hv 2540l	
v L 400-C715E5Fl	vetdoj Lna.OB	Totan <b>R</b> A	3 ater	hv 2540l	
M h 400-C715E5F2	Mab I o Gtronhamyne	Totan <del>R</del> A	3 ater	hv 2540l	
400-1511E0-A-2CDk	Df yricate	TotanR A	3 ater	hv 2540l	

**Analysis Batch: 39257(** 

bal Sample II	Client Sample <b></b> ☐	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	Totar <b>R</b> A	3 ater	hv 4500 NI	
v L 400-C72180FC	vetdoj Lnaa⊕	TotanR A	3 ater	hv 4500 NI	
M h 400-C72180F4	Mab I oGtronhamyre	TotanR A	3 ater	hv 4500 NI	
400-151514-A-4 v h	v atri9 hyiBe	TotanR A	3 ater	hv 4500 NI	
400-151514-A-4 v hD	v atri9 hyiBe Df yricate	Totan <b>R</b> A	3 ater	hv 4500 NI	
400-151005-L-2 Dk	Df yricate	Totan <b>R</b> A	3 ater	hv 4500 NI	

TestAmerica we Gacora

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# **QC Association Summary**

I nie: G: u f nPwoper I omya Gs wro/ect Rt ite: I I Wh mitd wna Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

# 0 eneral Chemistry ©ontinue86

# Analysis Batch: 3923) 3

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanR A	3 ater	hv 4500 l n x	
v L 400-C72C4CF8	vetdoj Lnac⊞	Totan <b>R</b> A	3 ater	hv 4500 l n x	
M h 400-C72C4CRE	Mab I oGtronhamyre	Totan <b>R</b> A	3 ater	hv 4500 l n x	
v WM400-C72C4CRC	Mab I o Gronhamyne	TotanR A	3 ater	hv 4500 l n x	
400-151258-A-4 v h	v atri9 hyiBe	Totan <b>R</b> A	3 ater	hv 4500 l n x	
400-151258-A-4 v hD	v atri9 hyiBe Dfynicate	TotanR A	3 ater	hv 4500 l n x	

# Analysis Batch: 392) 9(

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanR A	3 ater	hv 4500 hO4 x	
v L 400-C72470R8	vetdoj LnacOB	TotanR A	3 ater	hv 4500 hO4 x	
M h 400-C72470Æ	Mab I o Gtronhamyne	TotanR A	3 ater	hv 4500 hO4 x	
v WM400-C72470FC	Mab I o Gronhamyre	TotanR A	3 ater	hv 4500 hO4 x	

# Fiel8 Service / Mol ile bal

# Analysis Batch: 393L1L

bal Sample 🏻	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-C	v 3 -1C	TotanR A	3 ater	Nieni hamyniGq	

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InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wna Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

#### Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-392265/1-A ^5

**Matrix: Water** 

Analysis Batch: 393106

**Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 392265** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
AGtimoGS	00010	g	000025	000010	mLR3		04R01R16 12:08	04R09R16 14:14	5
ArseGc	0 <b>\times</b> 00049	g	0 <b>0</b> 01C	0 <b>\(\pi\)</b> 00049	mLR3		04R01R16 12:08	04R09R16 14:14	5
Marif m	0 <b>\(\O)</b> 004B	g	000025	0 <b>10</b> 004B	mLR3		04R01R16 12:08	04R09R16 14:14	5
MerSmif m	0 <b>\(\pi\)</b> 000C4	g	000025	0 <b>0</b> 000C4	mLR3		04R01R16 12:08	04R09R16 14:14	5
MbroG	0 <b>\@</b> 21	g	0 <b>\@</b> 50	00021	mLR3		04R01R16 12:08	04R09R16 14:14	5
I aj mif m	0 <b>\(\pi\)</b> 000C4	g	0 <b>७</b> 025	0 <b>10</b> 000C4	mLR3		04R01R16 12:08	04R09R16 14:14	5
I ancif m	0UC	g	0 <b>\2</b> 5	0UC	mLR3		04R01R16 12:08	04R09R16 14:14	5
l dromif m	O <b>W</b> 011	g	0 <b>७</b> 025	0 <b>\@</b> 011	mLR3		04R01R16 12:08	04R09R16 14:14	5
l obant	O <b>W</b> 0040	g	0 <b>\@</b> 025	0 <b>\(\pi\)</b> 0040	mLR3		04R01R16 12:08	04R09R16 14:14	5
3eaj	0 <b>W</b> 00C5	g	0 <b>0</b> 01C	0 <b>0</b> 000C5	mLR3		04R01R16 12:08	04R09R16 14:14	5
3itdif m	O <b>W</b> 011	g	0 <b>७</b> 050	0 <b>\@</b> 011	mLR3		04R01R16 12:08	04R09R16 14:14	5
7 on Soje Gfm	0 <b>\times</b> 00065	g	<b>0\omega</b> 15	0 <b>\times</b> 00065	mLR3		04R01R16 12:08	04R09R16 14:14	5
heneGfm	0 <b>ს</b> 0024	g	0 <b>0</b> 01C	000024	mLR3		04R01R16 12:08	04R09R16 14:14	5
Tdanif m	0 <b>\times</b> 000065	g	0000050	0 <b>\times</b> 000065	mLR3		04R01R16 12:08	04R09R16 14:14	5

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

Lab Sample ID: LCS 400-392265/2-A **Matrix: Water** 

Analysis Batch: 393106							Prep Batch: 392265
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
A@dimo@S	0 <b>ω</b> 500	0 <b>७</b> 526		mLR3		109	60 - 120
ArseGc	<b>0\(\pi\)</b> 500	0 <b>\(\pi\)</b> 512		mLR3		102	60 - 120
Marif m	O <b>W</b> 500	0 <b>\omega</b> 505		mLR3		101	60 - 120
MerSmif m	O <b>W</b> 500	0 <b>\omega</b> 508		mLR3		101	60 - 120
MoroG	00100	0U04		mLR3		104	60 - 120
I aj mif m	O <b>W</b> 500	0 <b>\o</b> 515		mLR3		10C	60 - 120
I ancif m	5000	5102		mLR3		109	60 - 120
I dromif m	O <b>W</b> 500	0 <b>\mathcal{0}</b> 4B8		mLR3		BB	60 - 120
I obart	O <b>W</b> 500	0 <b>\(\Odd)</b> 4B5		mLR3		BB	60 - 120
3eaj	0 <b>ω</b> 500	0 <b>\(\pi\)</b> 512		mLR3		102	60 - 120
3itdif m	O <b>W</b> 500	0 <b>0</b> 50C		mLR3		101	60 - 120
7 on Stoje Gfm	O <b>W</b> 500	0 <b>\@</b> 514		mLR3		10C	60 - 120
heneGf m	0 <b>ω</b> 500	0 <b>\</b> 0466		mLR3		B6	60 - 120
Tdamif m	O <b>W</b> 100	0 <b>W</b> 0B69		mLR3		BB	60 - 120

Lab Sample ID: 400-151170-B-24-B MS ^5

**Matrix: Water** 

Analysis Batch: 393106

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable Prep Batch: 392265** 

Analysis Baton. 656166	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
A@dimo@S	000010	g	0\(\pi\)500	0 <b>\(\pi\)</b> 559		mLF3		111	85 - 125
ArseGc	0 <b>\omega</b> 0049	g	0 <b>७</b> 500	0 <b>\@</b> 51B		mLF3		104	85 - 125
Marif m	0 <b>W</b> C5		<b>0\omega</b> 500	0 <b>\odol</b> 660		mL <b>R3</b>		108	85 - 125
MerSmifm	0 <b>0</b> 000C4	g	0 <b>७</b> 500	0 <b>\o</b> 518		mLR3		10C	85 - 125
MbroG	0 <b>\@</b> 21	g	0000	0 <b>U</b> 11		mLF3		111	85 - 125
I aj mif m	0 <b>10</b> 00C4	g	<b>0\omega</b> 500	0 <b>\text{\$\text{\$0}}512</b>		mLF3		102	85 - 125
I ancif m	15		5000	201		mLR3		101	85 - 125
I dromif m	000069		<b>0\omega</b> 500	0 <b>\sqrt</b> 56B		mLR3		101	85 <sub>-</sub> 125

TestAmerica weGsacora

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TestAmerica Job ID: 400-151260-C

hDu: Asd woG

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-151170-B-24-B MS ^5

**Matrix: Water** 

Analysis Batch: 393106

InieCt: ufnPwoperIomyaCS

wro/ectRite: II. hmitd wra Gt

**Client Sample ID: Matrix Spike Prep Type: Total Recoverable** 

**Prep Batch: 392265** 

7 maryolo Datom coc roc	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
lobani	0 <b>\(\pi\)</b> 0040	g	0\(\Oddstar\)	0 <b>\omega</b> 504		mLR3		101	85 - 125
3eaj	0 <b>0</b> 000C5	g	000500	0 <b>\omega</b> 516		mLR3		104	85 - 125
3itdif m	0 <b>\@</b> 011	g	0 <b>७</b> 500	0 <b>\@</b> 958	JC	mLR3		1C1	85 - 125
7 on Stoje Gfm	0 <b>\o</b> 0065	g	0 <b>७</b> 500	0 <b>\omega</b> 508		mLR3		108	85 - 125
heneGf m	0000024	g	0.00500	000502		mLR3		100	85 - 125
Tdanif m	<b>0\(\Omega\)</b> 000065	g	O <b>W</b> 100	<b>0W100</b>		mLR3		100	85 - 125
	Analyte I obart 3eaj 3itdif m 7 or&bj e&f m hereGf m	Analyte         Result           I obart         0000040           3eaj         0000005           3itdif m         000011           7 or&bj eG m         000065           hereGf m         000024	Analyte         Result Qualifier           I obart         0000040         g           3eaj         0000005         g           3itdif m         000011         g           7 orSbj eG m         000005         g           hereGf m         0000024         g	Analyte         Result lobant         Qualifier Qualifier         Added Added           1 obant         000000000000000000000000000000000000	Analyte         Result         Qualifier         Added         Result           I obart         000040         g         00500         00504           3eaj         000005         g         00500         009516           3itdif m         00011         g         00500         00958           7 or&bj eG m         000065         g         00500         00508           hereGf m         000024         g         00500         00502	Analyte         Result lobant         Qualifier Qualifier         Added Added Added Added Added Qualifier         MS Qualifier           3eaj         0000025         g         000500         000516           3itdif m         000011         g         000500         000508           7 or8bj eG m         0000025         g         000500         000508           hereGf m         0000024         g         000500         000502	Analyte         Result lobant         Qualifier Qualifier         Added Added Added Added Added Result Plant         Qualifier Qualifier Plant         Added Plant         MS           3eaj         0000005         g         00500         00504         mLR3           3itdif m         000011         g         00500         00958         JC         mLR3           7 or8bj eG m         0000024         g         00500         009502         mLR3           hereGf m         0000024         g         00500         00502         mLR3	Analyte         Result lobant         Qualifier Qualifier         Added Added Added Added Added Result Qualifier         Unit Qualifier Description         Description           3eaj         0000005         g         000500         000516         mLR3           3itdif m         000011         g         000500         000508         JC         mLR3           7 on8bj eG m         0000024         g         000500         000508         mLR3         mLR3           hereGf m         0000024         g         000500         000502         mLR3         mLR3	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           I obart         000040         g         00500         00504         mLR3         101           3eaj         000005         g         000500         009516         mLR3         104           3itdif m         00011         g         000500         00958         JC         mLR3         1C1           7 or8bj eG m         000065         g         00500         009503         mLR3         108           hereGf m         000024         g         00500         009502         mLR3         100

Lab Sample ID: 400-151170-B-24-C MSD ^5

**Matrix: Water** 

Client Sample ID: Matrix Spike Duplicate **Prep Type: Total Recoverable** 

Analysis Batch: 393106									Prep Ba	ıtch: 39	2265
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Actimocs	000010	g	0 <b>ゆ</b> 500	0 <b>0</b> 54C		mLF3		10B	85 - 125	2	20
ArseGc	0 <b>७</b> 0049	g	<b>0\omega</b> 500	0 <b>\@</b> 521		mLF3		104	85 - 125	0	20
Marif m	0 <b>W</b> C5		<b>0\omega</b> 500	0 <b>\(\pi\)</b> 695		mLR3		104	85 - 125	2	20
MerSmif m	0 <b>0</b> 000C4	g	0 <b>യ</b> 500	0 <b>\@</b> 505		mLF3		101	85 - 125	2	20
MoroG	00021	g	01100	0U0B		mLR3		10B	85 - 125	2	20
I aj mif m	0 <b>७</b> 00C4	g	0 <b>७</b> 500	0 <b>10</b> 5C8		mLF3		108	85 - 125	5	20
I ancif m	15		5000	2014		mLR3		108	85 - 125	2	20
I dromif m	<b>0\( \pi\)</b> 069		<b>0\omega</b> 500	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	JC	mLR3		129	85 - 125	20	20
l obant	0 <b>७</b> 0040	g	0 <b>७</b> 500	0 <b>\@</b> 504		mLF3		101	85 - 125	0	20
3eaj	0 <b>0</b> 000C5	g	0 <b>യ</b> 500	0 <b>\(\pi\)</b> 516		mLR3		104	85 - 125	0	20
3itdif m	<b>0\omega</b> 011	g	<b>0\omega</b> 500	0 <b>0</b> 959	JC	mLR3		1C1	85 - 125	0	20
7 omSbjeGfm	0 <b>७</b> 0065	g	0 <b>७</b> 500	0 <b>0</b> 52B		mLF3		109	85 - 125	2	20
heneGfm	0 <b>0</b> 0024	g	0 <b>യ</b> 500	0 <b>0</b> 4B2		mLR3		B6	85 - 125	2	20
Tdannif m	<b>0\(\pi\)</b> 000065	g	0 <b>७</b> 100	0 <b>७</b> 101		mLF3		101	85 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-393404/14-A

**Matrix: Water** 

Analysis Batch: 393589

**Client Sample ID: Method Blank Prep Type: Total/NA** 

**Client Sample ID: Matrix Spike** 

Prep Batch: 393404

Analyte Result Qualifier PQL **MDL** Unit **Prepared** Analyzed 7 ercf rS 0W000888 0000020 00000080 mLR3 04R10R6 12:06 04R1R6 15:00

MB MB

Lab Sample ID: LCS 400-393404/15-A		Client Sample ID: Lab Control Sampl						
Matrix: Water							Prep Type: Total/NA	
Analysis Batch: 393589							<b>Prep Batch: 393404</b>	
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
7 ercf rS	0 <b>0</b> 0101	0000101		mLF3		100	60 - 120	

Lab Sample ID: 400-151280-B-1-C MS

**Matrix: Water** 

Prep Type: Total/NA **Analysis Batch: 393589** Prep Batch: 393404 Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 7 ercf rS <u>0</u> 00000080 g 0000201 0**0**001B6 mLR3 B6 60 - 120

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4/13/2018

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**RPD** 

20

I nie Gt: u f nPwoper I omya GS wro/ectRtite: II. hmitd wna Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

Lab Sample ID: 400-151280-B-1-D MSD

**Matrix: Water** 

Analyte

7 ercf rS

**Analysis Batch: 393589** 

Sample Sample Result Qualifier <u>ошооово</u> д

Spike Added 0000201

MSD MSD Result Qualifier

Unit 0**0**001BC mLR3

D %Rec B9 Limits 60 - 120

%Rec.

Client Sample ID: Method Blank

Client Sample ID: Matrix Spike Duplicate

RPD Limit 2

Prep Type: Total/NA

**Prep Batch: 393404** 

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-391575/1

**Matrix: Water** 

**Analysis Batch: 391575** 

MB MB

Result Qualifier Analyte TotanDissonvej honijs

O4 g

PQL 500

MDL Unit CU4 mLR3 Prepared

Analyzed Dil Fac 0CF28F16 1C:11

Prep Type: Total/NA

Prep Type: Total/NA

Lab Sample ID: LCS 400-391575/2

**Matrix: Water** 

**Analysis Batch: 391575** 

Analyte

TotanDissonvej horijs

Spike Added 2BC

LCS LCS Result Qualifier 260

Unit mLR3 D %Rec B9

Prepared

D %Rec

109

%Rec. Limits 86 - 122

**Client Sample ID: Lab Control Sample** 

RPD

Dil Fac

Lab Sample ID: 400-151170-A-23 DU

**Matrix: Water** 

**Analysis Batch: 391575** 

TotanDissonvej honijs

Sample Sample Result Qualifier 89

DU DU Result Qualifier 8900

PQL

200

Unit mLF3

**MDL** Unit

0190 mLR3

**RPD** Limit

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

**Client Sample ID: Duplicate** 

Client Sample ID: Method Blank

Analyzed

04R02R16 11:0B

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-392343/6

**Matrix: Water** 

**Analysis Batch: 392343** 

MR MR

Analyte Result Qualifier 1149

I dnorij e

Lab Sample ID: LCS 400-392343/7

**Matrix: Water Analysis Batch: 392343** 

Analyte

Lab Sample ID: MRL 400-392343/3

I drorij e

I drorij e

**Matrix: Water Analysis Batch: 392343** 

Analyte

Spike Added 2000

Spike

Added

000

MRL MRL Result Qualifier 248

C1 UB

LCS LCS

Result Qualifier

Unit mLR3

Unit

mLR3

D %Rec 12C

%Rec. Limits 50 - 150

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Lab Control Sample** 

%Rec.

Limits

B0 <sub>-</sub> 110

TestAmerica we Gsacora

InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wna Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

# Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: 400-151256-A-4 MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA
Analysis Batch, 202242	

Analysis Batch: 392343

	Sample	Sample	<b>Бріке</b>	IVIS	IVIS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I dnorij e	BUC	N	1000	1B <b>\&amp;</b>		mLR3		104	8C <sub>-</sub> 120	

Lab Sample ID: 400-151256-A-4 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
l dnorij e	BUC	N	1000	2018		mLR3		114	8C- 120	5	6

#### Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-392160/3	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 392160

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vrli orij e	0WC2	g	000	0 <b>0</b> 0C2	mLR3			0CR00R16 12:2B	1

Lab Sample ID: LCS 400-392160/4 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 392160

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Vrfi orij e	 4000	4U6		mLR3		105	B0 - 110	

Lab Sample ID: 400-151514-A-4 MS Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 392160

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Vrfi orii e	0118		1100	1129		ml F3		10B	85 - 125	

Lab Sample ID: 400-151514-A-4 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA **Analysis Batch: 392160** 

_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Vrfi orij e	8110		1000	1129		mLR3		10B	85 - 125	0	4

Lab Sample ID: 400-151335-B-2 DU **Client Sample ID: Duplicate Matrix: Water Prep Type: Total/NA** 

Analysis Ratch: 392160

Analysis balcii. 332 100									
_	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Vrfi orij e	0000	g	000002	g	mL <b>R3</b>	-		FI	4

# **QC Sample Results**

InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wra Gt TestAmerica Job ID: 400-151260-C

**Client Sample ID: Method Blank** 

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Lab Control Sample** 

hDu: Asd woQ

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-392490/6

**Matrix: Water** 

Analysis Batch: 392490

MB MB

Analyte Result Qualifier PQL MDL Unit D Prepared Analyzed Dil Fac hf nPate 500 14 mLR3 04R0CR16 0B:42 1**4** g

Lab Sample ID: LCS 400-392490/7

**Matrix: Water** 

**Analysis Batch: 392490** 

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit %Rec hf nPate BB B0 - 110 15**W** 14**U**B mLR3

Lab Sample ID: MRL 400-392490/3

**Matrix: Water** 

Analysis Batch: 392490

%Rec. Spike MRL MRL Added Result Qualifier Analyte Limits Unit D %Rec **5\(\O\)**0 hf mate 4554 I mLR3 B1 50 - 150

Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018

Date/Time: Date/Time

Company: Company:

Received in Laboratory by:

Date/Time:

Company:

Received by

45% 0.0%, 0.0% IR7

THREN DATE/TIME:

Company

Corrid

Cooler Temp. (°C): Obs'd:

Custody Seal No.:

용

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Custody Seals Intact:

Relinquished by

Company:

Company:

Months

Archive for

Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Skin Irritani

Non-Hazard | Flammable | Skin Irrita | Special Instructions/QC Requirements & Comments:

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification

TestAmerica Laboratories, Inc.

COCs

٥

Carrier Date:

Cheyenne Whitmire

☐ WORKING DAYS

TAT if different from Below

Phone

Pensacola, FL 32520

(850) 444-6427 xxx (xxx

1 Energy Place

**Gulf Power Company** 

FAX

Project Name: CCR Smith Plant

# O d

Site:

CALENDAR DAYS

1 week 2 days 1 day

Analysis Turnaround Time

Site Contact: Lab Contact:

RCRA

□ NPDES

MO [

Regulatory Program:

Project Manager:

Client Contact

Pensacola, FL 32514-7045 phone 850.474.1001 fax 850.474.4789

**TestAmerica Pensacola** 

3355 McLemore Drive

Tel/Fax:

Other:

COC No:

Sampler. Rick Hagendorfer

For Lab Use Only:

Walk-in Client: .ab Sampling:

Job / SDG No.

Sample Specific Notes:

Parameters

FieldSampling - Field Sampling

6020 - Sb, As, Ba, B, Be, Ca, Cd, Cr, Co, Pb, Li, Mo, Se, Ti, 7470A

SM4500\_CIE - Chloride, SM4500\_SO4\_E - Sulfate, 2540C -Total Dissolved Solids, 4500\_F\_C

9315\_R4226, 9320\_R4228, R4226R4226\_GFPC

(N \Y) GSM\SM mnoha9 Filtered Sample (Y/N)

# of Conf.

Matrix 3

Type (C=Comp, G=Grab) Sample

Sample Time

Sample Date

Sample Identification

MW-13

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1501

3-22-18

**TestAmerica** 

**Chain of Custody Record** 

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# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151280-3

SDG Number: Ash Pond

Login Number: 151280 List Source: TestAmerica Pensacola

List Number: 1

Creator: Whitmire, Cheyenne R

oroator. Trinamio, onoyomio it		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.5°C, 0.0°C,0.0°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Pro/ectsRite: CCh Rmitd Plant
TestAmerica Job ID: 400-151260-j
RDG: Asd Pon.

# Laboratory: TestAmerica Pensacola

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis report N

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	Rtate Pro3ram	4	40150	08-j 0-16
Ag AB	IROSEC 17025		L2471	02-22-20
Arizona	Rtate Pro3ram	9	AZ0710	01-12-19
Arkansas DEQ	Rtate Pro3ram	8	66-0869	09-01-16
California	ELAP	9	2510	0j -j 1-16 *
Flori. a	g ELAP	4	E61010	08-j 0-16
Geor3ia	Rtate Pro3ram	4	g SA	08-j 0-16
Illinois	g ELAP	5	200041	10-09-16
lowa	Rtate Pro3ram	7	j 87	06-01-16
Kansas	g ELAP	7	E-1025j	10-j 1-16
Kentucky (URT)	Rtate Pro3ram	4	5j	08-j 0-16
Kentucky (WW)	Rtate Pro3ram	4	960j 0	12-j 1-16
Louisiana	g ELAP	8	j 0978	08-j 0-16
Louisiana (DW)	g ELAP	8	LA170005	12-j 1-16
Marylan.	Rtate Pro3ram	j	2j j	09-j 0-16
Massacdusetts	Rtate Pro3ram	1	M-FL094	08-j 0-16
Micdi3an	Rtate Pro3ram	5	9912	08-j 0-16
g ew Jersey	g ELAP	2	FL008	08-j 0-16
g ortd Carolina (WW\$RW)	Rtate Pro3ram	4	j 14	12-j 1-16
Okladoma	Rtate Pro3ram	8	9610	06-j 1-16
Pennsylvania	g ELAP	j	86-00487	01-j 1-19
h do. e Islan.	Rtate Pro3ram	1	LAO00j 07	12-j 0-16
Routd Carolina	Rtate Pro3ram	4	98028	08-j 0-16
Tennessee	Rtate Pro3ram	4	Tg 02907	08-j 0-16
Texas	gELAP	8	T104704268-17-12	09-j 0-16
URDA	Fe. eral		Pj j 0-18-00172	05-24-19
Vir3inia	g ELAP	j	480188	08-14-16
Wasdin3ton	Rtate Pro3ram	10	C915	05-15-16
West Vir3inia DEP	Rtate Pro3ram	j	1j 8	08-j 0-16

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<sup>\*</sup> Accre. itation Scertification renewal pen. in3 - accre. itation Scertification consi. ere. vali. N

TestAmerica Pensacola



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-151280-4

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 4/20/2018 2:27:00 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 400-151280-4 SDG: Ash Pond

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# **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-4

SDG: Ash Pond

Job ID: 400-151280-4

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151280-4

### **RAD**

Method(s) PrecSep\_0: Radium 228 Prep Batch 160-358187: Insufficient sample volume was available to perform a sample duplicate (DUP,MS, MSD) for the following samples: MW-13 (400-151280-3). A laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-358185: Insufficient sample volume was available to perform a sample duplicate (DUP,MS, MSD) for the following samples: MW-13 (400-151280-3). A laboratory control sample/ laboratory control sample duplicate (LCS/ LCSD) were prepared instead to demonstrate batch precision.

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-4

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
9315	Radium-228 (GFPC)	SW648	TAL SL
9320	Radium-226 (GFPC)	SW648	TAL SL
Ra228_Ra226	Combined Radium-228 and Radium-226	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

### **Protocol References:**

None = None

SW648 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1968 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

## **Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 83045, TEL (314)296-6588

# **Sample Summary**

3 Gel t: n GOf oPer 3 omwal p f rodectjy ite: 33/ y mitSf al t TestAmerica Job ID: 400-151280-4

y Dn: AsSf ol h

L	ab Sample ID	Client Sample ID	Matrix	Collected	Received
4	00-151280-R	MW-1R	Water	0Fj22j18 15:01	0Rj2Rj18 17:00

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-4

SDG: Ash Pond

Client Sample ID: Wr -1M

Date Cclledte3: 0M22/18 15:01 Date Redei7e3: 0M2M18 1v:00 Lab Sample ID: 400-151280-M

Watxio: r atex

Wethc3: 9M15 - Ra	a3ium-226 (	(GFPC)	Ccunt	Tctal						
			Undext.	Undext.						
Analyte	Result	Qualifiex	(2σ+/-)	(2σ+/-)	RL	WDC	Unit	Рхерахе3	Analyze3	Dil Fad
Ra3ium-226	6.v1		0.421	0.736	1.00	0.0941	pCi/L	03/29/18 14:03	04/20/18 05:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	826		40 - 110					03/28/1: 14903	04/20/1: 05945	1

	(GFPC)	Ccunt Undext.	Tctal Undext.						
	,								
CILIT	Oualifiev	(2σ+/-)	(2σ+/-)	RL	WDC	Unit	Ржераже3	Analyze3	Dil Fad
	Qualifiex								Dillau
/.2v		0.600	0.899	1.00	0.371	pCi/L	03/29/18 14:47	04/05/18 14:51	1
ield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
826		40 - 110					03/28/1: 1494Y	04/05/1: 14951	1
806		40 - 110					03/28/1: 1494Y	04/05/1: 14951	1
Y	v.2v	Yield Qualifier 826	V.2v         0.600           Yield Reserved         Qualifier Limits           826         40 - 110	V.2v         0.600         0.899           Yield Reserved         Limits Augusta         Limits           826         40 - 110	V.2v     0.600     0.899     1.00       Yield Reserved     Qualifier Limits       826     40 - 110	V.2v         0.600         0.899         1.00         0.371           Yield 826         Limits 40 - 110         40 - 110	V.2V         0.600         0.899         1.00         0.371         pCi/L           Yield 826         Limits 40 - 110         40 - 110	V.2v         0.600         0.899         1.00         0.371         pCi/L         03/29/18 14:47           Yield Reserved         Qualifier Reserved         Limits August Augu	V.2v         0.600         0.899         1.00         0.371         pCi/L         03/29/18 14:47         04/05/18 14:51           Yield Reference         Limits         Prepared O3/28/1: 1494Y         Analyzed O4/05/1: 14951

Wethc3: Ra226 Ra	228 - Ccn	nbine3 Ra	3ium-226 a	n3 Ra3ium	1-228					
_			Ccunt Undext.	Tctal Undext.						
Analyte	Result	Qualifiex	(2σ+/-)	(2σ+/-)	RL	WDC	Unit	Рхерахе3	Analyze3	Dil Fad
Ccmbine3 Ra3ium 226 + 228	14.0		0.733	1.16	5.00	0.371	pCi/L		04/20/18 12:23	1

4/20/2018

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# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-4

SDG: Ash Pond

## **Qualifiers**

## Rad

Qualifier Q	ualifier Descriptior
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U Result is less than the sample detection limit.

# **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

**PQL Practical Quantitation Limit** 

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

# **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-4

SDG: Ash Pond

**Client Sample ID: MW-13** 

Date Collected: 03/22/18 15:01 Date Received: 03/23/18 17:00 Lab Sample ID: 400-151280-3

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/9 A	Prep	PrecSep-21			356165	03/28/16 14:03	TJT	TA7 S7
Total/9 A	Analysis	8315		1	3L1825	04/20/16 05:45	RTN	TA7 S7
Total/9 A	Prep	PrecSepM0			35616_	03/28/16 14:4_	TJT	TA7 S7
Total/9 A	Analysis	8320		1	358055	04/05/16 14:51	RTN	TA7 S7
Total/9 A	Analysis	Ra22LMRa226		1	3L204_	04/20/16 12:23	RTN	TA7 S7

### **Laboratory References:**

TA7 S7 = TestAmerica St. 7ouis, 13\_15 Rider Trail 9 orth, Earth City, NO L3045, TE7 (314)286-65LL

4/20/2018

# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-4

SDG: Ash Pond

# Rad

**Prep Batch: 358185** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151280-3	MW-13	Total/NA	Water	PrecSep-21	
MB 160-358185/16-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-358185/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-358185/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

# **Prep Batch: 358187**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151280-3	MW-13	Total/NA	Water	PrecSep_0	
MB 160-358187/16-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-358187/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-358187/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-4

SDG: Ash Pond

# Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-357175/16-A

**Matrix: Water** 

**Analysis Batch: 361925** 

Client Sample ID: Method Blank Prep Type: Total/NA

**Prep Batch: 357175** 

MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit **Prepared** Analyzed Dil Fac Radium-22U 0.08663 9 0.0481 0.0482 1.00 0.0U76 pCi/L 

Total

Count

MB MB

Carrier %Yield Qualifier Limits Ba Carrier 102 40 - 110

03/29/18 14:03 04/20/18 05:46

Prepared

**Client Sample ID: Lab Control Sample** 

Analyzed

Lab Sample ID: LCS 160-357175/1-A **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 361925 Prep Batch: 357175** 

Total

Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits Radium-22U 11.6 10.3U 1.11 1.00 0.0708 pCi/L 38 U6 <sub>-</sub> 187

LCS LCS

Carrier %Yield Qualifier Limits Ba Carrier 101 40 - 110

Lab Sample ID: LCSD 160-357175/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Water** 

**Analysis Batch: 361925** 

Prep Type: Total/NA

**Prep Batch: 357175** 

Total

Spike LCSD LCSD

Uncert. %Rec. R8R Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits R8R Limit Radium-22U 11.6 10.30 1.11 1.00 0.0774 pCi/L 32 U6 <sub>-</sub> 187 0.08

LCSD LCSD

Carrier %Yield Qualifier Limits Ba Carrier 103 40 - 110

# Method: 9320 - Radium-227 (GFPC)

Lab Sample ID: MB 160-35717E/16-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

Analysis Batch: 359056

/ wildig old Batolii ood	7000						i iop Batoiii t	001 11 <b>L</b>
_		Count	Total					
	MB MB	Uncert.	Uncert.					
Analyte	Result Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1271 9	0.166	0.166	1.00	0.81U pCi/L	08/23/16 14:47	04/05/16 14:45	1

MB MB Carrier **%Yield Qualifier** Limits Prepared Dil Fac Analyzed 40 - 110 Ba Carrier 102 03/29/18 14:47 04/05/18 14:45 Y Carrier 90.8 40 - 110 03/29/18 14:47 04/05/18 14:45

Dil Fac

# **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-4

SDG: Ash Pond

# Method: 9320 - Radium-227 (GFPC) (Continued)

Lab Sample ID: LCS 160-35717E/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 359056 Prep Batch: 35717E

			Total					
	Spike	LCS LCS	Uncert.				%Rec.	
Analyte	Added	Result Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	
Radium-226	6.42	6.808	0.378	1.00	0.840 pCi/L	33	5U <sub>-</sub> 140	

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	88.6		40 - 110

Lab Sample ID: LCSD 160-35717E/2-A **Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 359056 Prep Batch: 35717E Total

			iotai						
Spike	LCSD	LCSD	Uncert.				%Rec.		R8R
Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	R8R	Limit
6.42	7.65U		0.325	1.00	0.828 pCi/L	38	5U- 140	0.24	1
	Added	Added Result	Added Result Qual	Spike LCSD LCSD Uncert. Added Result Qual (2σ+/-)	Spike LCSD LCSD Uncert.  Added Result Qual (2σ+/-) RL	Spike LCSD LCSD Uncert.  Added Result Qual (2σ+/-) RL MDC Unit	Added Result Qual (2σ+/-) RL MDC Unit %Rec	Spike       LCSD       Uncert.       %Rec.         Added       Result       Qual       (2σ+/-)       RL       MDC       Unit       %Rec       Limits	SpikeLCSDUncert.%Rec.AddedResultQual(2σ+/-)RLMDCUnit%RecLimitsR8 R

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	90.1		40 - 110

# C

TestAmerica Pensacola 3355 McLemore Drive	Ch	Chain of Custody Record	TestAmerico THE LEADER IN ENVIRONMENTAL TESTING
Pensacola, FL 32514-7045	Regulatory Program: Dw DPDES	□ RGRA □ Other:	TestAmerica Laboratories, Inc.
מוסום שליים לשו הסיו לא לייססף פווסוות		Sife Contact: Date:	COC NO:
Client Contact	Project Manager.		2000 2000

Felipear   Company   Client Contact   Client Cont	SMA500_CIE - Chloride, SMA600_SO4_E - Sulfate, 2540C - Sansana SMA600_SO4_E - Sulfate, 2540C - Ch. Co. Date Small Dissolved Solids, 4500_F_C Fluoride  6020 - Sb, Re, Ba, B, Be, Ca, Ca, Ca, Cr, Co, Pb, Li, Mo, Se, Ti, 7470A - Field Sampling - Field Sampling FieldSampling - Field Sampling Parameters  Carrier	COC No:  of COCs  Sampler: Rick Hagendorfer  For Lab Use Only:  Lab Sampling:  Lab SDG No.:
Client Contact  Telifax: Analysis Turnaround Time  Tolleax: Analysis Turnaround Time  Sample Sample Identification  Sample Identification  Sample Identification  Sample Identification  Sample Sample Codes for Sample  Sample Identification  Sample Identification  Sample Sample Codes for Sample  Sample Identification  Sample Identification  Tolleax:  Sample Identification  Tolleax:  Sample Identification  Sample Identification  Tolleax:  Sample Identification  Sample Identification  Tolleax:  To	Cheyana SMA500_CIE - Chloride, SAM500_CIE - Sulfate, 2540C - Sulfate, 2540C - Sulfate, 2540C - Chinds, 4500_F_C Fluoride  Fluoride  Fluoride  Cr. Co, Pb, Li, Mo, Se, Ti, 7470A - Field Sampling  FieldSampling - Field Sampling  FieldSampling - Field Sampling  Parameters  Carrier  Car	mpler: Rick Hagendorfer rr Lab Use Only: alk-in Client: b Sampling:
Sample Identification Sample Identification Sample Sample Identification In week Sample Identification Sample Identification Sample Identification In week Sample Identification Sample Identification In week Sample Identification In week Sample Identification In week Sample Identification In week In	Field Sampling - Field Sampling Parameters	impler. Rick Hagendorfer rr Lab Use Only: alk-in Client: th Sampling:
Sample Identification  Sample Identification  Tari different from Below  Ta	RA226RA228_GFPC  SM4500_CIE - Chloride, SM4500_SO4_E - Sulfate, 2540C - Total Dissolved Solids, 4500_F-C Fluoride  GC20 - Sb, As, Ba, B, Be, Ca, Cd, Cr, Co, Pb, Li, Mo, Se, Ti, 7470A - FieldSampling - Field Sampling Parameters	rr Lab Use Only: alk-in Client: b Sampling: b / SDG No.:
Sample   Jack   Colembar Days   Colembar Day	Ra226Ra228_GFPC  SM4500_CIE - Chloride, SM4500_SOA_E - Sulfate, 2540 Total Dissolved Solids, 4500_F Fluoride  6020 - Sb, As, Ba, B, Be, Ca, C Cr, Co, Pb, Li, Mo, Se, Ti, 7470 Mercury  FieldSampling - Field Sampling Parameters	alk-in Client: Ib Sampling: Ib / SDG No.:
Phone FAX	Ra226Ra228_GFPC  SM4500_CIE - Chlorde, SM4500_SOA_E - Sulfate, SM500_SOA_E - Sulfa	b Sampling:
FAX  FAX  FAX  FAX  FAX    Time   Cample   Campl	RA226Ra228_GFPC SM4500_CIE - Chloride, SM4500_SOA_E - Sulfate Total Dissolved Solids, 4 Fluoride G020 - Sb, As, Ba, B, Be, Be, Cr, Co, Pb, Li, Mo, Se, Ti, Mercury FieldSampling - Field Sa Parameters	b Samping:
FAX  I week  Sample Sample Gadys  Lidy  Sample Gadys  Type  Date Time Gadys  FLU 3  HCI; 3= HZSO4; 4=HNO3; 5=NaOH; 6= Other  The Potson B Unknown  Interments & Comments:	RAS26RA228_GFPC SM4500_CIE - Chlorid SM4500_SO4_E - Sulfa Total Dissolved Solids Huoride 6020 - Sb, As, Ba, B, I, Huoride Aerury FieldSampling - Field Parameters	b / SDG No.:
entification  = HCI; 3= H2SO4; 4=HNO3; 5=NeOH; 6= Other Interments & Comments:    Continued	RA226Ra228_GFPC SM4500_CIE - Chic SM4500_SO4_E - 5 Total Dissolved So Fluoride 6020 - Sb, As, Ba, Cr, Co, Pb, Li, Mo, Mercury FieldSampling - Fiel Parameters	b / SDG No.:
Sample Sample Sample Sample Sample Sample (==con), Matrix Cond, Liday Sample (==con), Matrix Con, Liday Sample	Ra226Ra228_GS SM4500_CIE - C SM4500_SO4_E Total Dissolved Fluoride GC, Co, Pb, Li, N Mercury Mercury FieldSampling	
Sample Identification  Sample Identification  Sample Identification  Sample Identification  Sample Identification  3-22-18 15 01 (2-10 10 10 10 10 10 10 10 10 10 10 10 10 1	SAASOO_CIE SMASOO_SO Total Dissol Fluoride Cr, Co, Pb, I Mercury FieldSampli	
B benefitt	Ra226Ra SM4500 Total Dis Fluoride Cr, Co, P Mercury	
	SMAS TO CT, Mei	
	X	Sample Specific Notes:
	×	
$\forall$	Sample Disposal ( A fee may be assessed if samples are retained longer uran i morrur)	
int   Poison B   Unknown		Months
Special Instructions/QC Requirements & Comments:	Disposal by Lab	
	45%, 0.0%,	0.0% 0.0% 1R7
	Cooler Temp. (*C): Obs'd: Corr'd: Therm ID No.	No.:
s Intact: Yes No Custody Seal No.:   Date/Time:	0	Date/Time:
5-33/8 1700	Company	Date/Time.
Received by:	- Conspans	
Company: Date/Time:	Received in Laboratory by: Di	Date/Time:
1	Form No. CA-C	Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151260-4

SDG Number: Ash Pond

List Source: TestAmerica Pensacola

Login Number: 151280 List Number: 1

Creator: Whitmire, Cheyenne R

Creator: whitmire, Cheyenne R		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.58C, 0.08C,0.08C °R-I
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Oeld Sampler's name present on C7 CF	True	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ?Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Client: Gulf Power Company

Job Number: 400-151260-4 SDG Number: Ash Pond

Login Number: 151280
List Source: TestAmerica St. Louis
List Number: 2
List Creation: 03/27/18 01:48 PM

Creator: Taylor, Kristene N

Creator. Taylor, Kristerie N		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0,19.0
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Cield Sampler's name present on C7 CF	Oalse	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ? Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151260-4
SDG: Ash Pond

# Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	03-80-16
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	3	66-0369	09-01-16
California	ELAP	9	2510	08-81-16 *
Florida	NELAP	4	E61010	03-80-16
Georgia	State Program	4	N/A	03-80-16
Illinois	NELAP	5	200041	10-09-16
lowa	State Program	7	837	06-01-16
Kansas	NELAP	7	E-10258	10-81-16
Kentucky (UST)	State Program	4	58	03-80-16
Kentucky (WW)	State Program	4	96080	12-81-16
Louisiana	NELAP	3	80973	03-80-16
Louisiana (DW)	NELAP	3	LA170005	12-81-16
Maryland	State Program	8	288	09-80-16
Massachusetts	State Program	1	M-FL094	03-80-16
Michigan	State Program	5	9912	03-80-16
New Jersey	NELAP	2	FL003	03-80-16
North Carolina (WW/SW)	State Program	4	814	12-81-16
Oklahoma	State Program	3	9610	06-81-16
Pennsylvania	NELAP	8	36-00437	01-81-19
Rhode Island	State Program	1	LAO00807	12-80-16
South Carolina	State Program	4	93023	03-80-16
Tennessee	State Program	4	TN02907	03-80-16
Texas	NELAP	3	T104704263-17-12	09-80-16
USDA	Federal		P880-13-00172	05-24-19
Virginia	NELAP	8	430133	03-14-16
Washington	State Program	10	C915	05-15-16
West Virginia DEP	State Program	8	183	03-80-16

# Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

- Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	03-80-16 *
Arizona	State Program	9	AZ0618	12-06-16
California	State Program	9	2663	03-80-16 *
Connecticut	State Program	1	PH-0241	08-81-19
Florida	NELAP	4	E67369	03-80-16 *
Illinois	NELAP	5	200028	11-80-16
Iowa	State Program	7	878	12-01-16
Kansas	NELAP	7	E-10283	10-81-16
Kentucky (DW)	State Program	4	90125	12-81-16
L-A-B	DoD ELAP		L2805	04-03-19
Louisiana	NELAP	3	04060	03-80-16
Louisiana (DW)	NELAP	3	LA160017	12-81-16
Maryland	State Program	8	810	09-80-16
Michigan	State Program	5	9005	03-80-16
Missouri	State Program	7	760	03-80-16
Nevada	State Program	9	MO000542016-1	07-81-16

<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151260-4
SDG: Ash Pond

# **Laboratory: TestAmerica St. Louis (Continued)**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
New Jersey	NELAP	2	MO002	03-80-16 *
New York	NELAP	2	11313	08-81-19
North Dakota	State Program	6	R207	03-80-16
NRC	NRC		24-24617-01	12-81-22
Oklahoma	State Program	3	9997	06-81-16
Pennsylvania	NELAP	8	36-00540	02-26-19
South Carolina	State Program	4	65002001	03-80-16
Texas	NELAP	3	T104704198-17-11	07-81-16
US Fish & Wildlife	Federal		056446	06-81-16
USDA	Federal		P880-17-0026	02-02-20
Utah	NELAP	6	MO000542013-6	07-81-16
Virginia	NELAP	8	430280	03-14-16 *
Washington	State Program	10	C592	06-80-16
West Virginia DEP	State Program	8	861	06-81-16 *

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-151280-5

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 4/13/2018 4:58:38 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# **Case Narrative**

Client: Gulf Power Company Proæctj/ ite: CCS / mitRPlant TestAmerica Job ID: 400-151280-5

/ DG: AsR Ponh

Job ID: 400-151280-5

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151280-5

#### Metals

d etRohM() 020: TRe matri6 spixe j matri6 spixe huplicate MI / jd / D( recokeries for preparation batcRv922) 5 anh analytical batcRv9v10) were outsihe control limits. / ample matri6 interference anhjor non-Romogeneity are suspected because tRe associated laboratory control sample MC/ (recokery was witRin acceptance limits.

d etRohM() 020: TRe following sample was hiluteh to bring tRe concentration of target analytes witRin tRe calibration range: d W-14 M400-151280-4(. Elekateh reporting limits NSLs( are prokiheh.

d etRohM( 7470A: TRe metRoh blanx for preparation batcRv9v404 anh analytical batcRv9v589 containeh d ercury aboke tRe metRoh hetection limit. TRis target analyte concentration was less tRan tRe reporting limit NSL(; tRerefore, re-analysis of samples was not performeh.

## **General Chemistry**

d etRohM( / d 4500 CI- E: TRe metRoh blanx for analytical batcR v92v4v containeh cRorihe aboke tRe metRoh hetection limit. TRis target analyte concentration was less tRan tRe reporting limit N\$L(; tRerefore, re-e6traction anhjor re-analysis of samples was not performeh.

d etRohM( / d 4500 CI- E: TRe following sample was hiluteh to bring tRe concentration of target analytes witRin tRe calibration range: d W-14 M400-151280-4(. Elekateh reporting limits NSLs( are prokiheh.

d etRohM( / d 4500 / O4 E: TRe following sample was hilluten to bring tRe concentration of target analytes witRin tRe calibration range: d W-14 M400-151280-4(. Elekateh reporting limits NSLs( are prokiheh.

# **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-5

ba4 Sample ID: L00-151280-L

SDG: Ash Pond

# Client Sample ID: MW-1L

Analyte	Result Qualifier	PQb	MDb	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0041	0.0013	0.00046	mg/L	5	_	6020	Total
								Recoverable
Barium	0.051	0.0025	0.00049	mg/L	5		6020	Total
								Recoverable
Chromium	0.001M I	0.0025	0.0011	mg/L	5		6020	Total
								Recoverable
Lithium	0.0013 I	0.0050	0.0011	mg/L	5		6020	Total
								Recoverable
7 olybdenum	0.01M	0.015	0.00085	mg/L	5		6020	Total
								Recoverable
Boron - DL	12	2.0	0.84	mg/L	200		6020	Total
								Recoverable
Calcium - DL	250	10	5.0	mg/L	200		6020	Total
								Recoverable
Total Dissolved Solids	4800	50	34	mg/L	1		S7 2540C	Total/NA
Chloride	2000	80	24	mg/L	40		S7 4500 CI- E	Total/NA
Fluoride	0.0M0 I	0.10	0.032	mg/L	1		S7 4500 F C	Total/NA
Sulfate	590	100	28	mg/L	20		S7 4500 SO4 E	Total/NA
Field pH	6.8M			SU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-5

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
8020	Metals (ICP/MS)	SW648	TAL PEN
7470A	Mercury (CVAA)	SW648	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

#### **Protocol References:**

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW648 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1968 And Its Updates.

## **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (650)474-1001

TestAmerica Pensacola

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-5

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-151280-4	MW-14	Water	03/22/18 18:52	03/23/18 17:00

# **Client Sample Results**

3 Cel t: n COf oPer 3 omwal p f rodectjy ite: 33/ y mitSf @I t

Date Recei7ed: 03/23/18 1v:00

TestAmerica Job ID: 400-151280-5

y Dn : AsSf ol h

**Client Sample ID: MW-14** Lab Sample ID: 400-151280-4 Date Collected: 03/22/18 18:52

Matrix: Water

0R0010		0R0025	0R0010	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0.0041		0R0016	0 <b>₹</b> 00047	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0.051		0R0025	0 <b>₹</b> 00049	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0R00064	•	0R0025	0R00064	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0R00064		0 <b>₹</b> 0025	0R00064	m <b>Uj</b> g		04j01j18 12:0L	04j07j18 1L:69	
0.001v	T	0R0025	0R0011	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0R00040	•	0R0025	0R00040	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0 <b>₹</b> 00065		0 <b>₹</b> 0016	0 <b>₹</b> 00065	m <b>Uj</b> g		04j01j18 12:0L	04j07j18 1L:69	
0.0013	I	0R0050	0R0011	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0.01v		0R015	0R00085	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
0R00024		0R0016	0 <b>₹</b> 00024	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	:
0R000085	•	0 <b>₹</b> 00050	0R000085	m <b>U</b> jg		04j01j18 12:0L	04j07j18 1L:69	
		- DL PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
12		2R0	0R84	m <b>U</b> jg		04j01j18 12:0L	04j0Lj18 07:22	20
250		10	5R0	m <b>U</b> jg		04j01j18 12:0L	04j0Lj18 07:22	20
9 AA)								
Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
0R0000L0		0R00020	0R0000L0	m <b>U</b> jg		04j10j18 12:09	04j11j18 15:10	
Result	Qualifier	PQL			D	Prepared	Analyzed	Dil Fa
4800		50	64	m <b>U</b> jg			06j2Lj18 16:11	
2000		80	24	m <b>U</b> jg			04j02j18 11:5L	4
0.0v0	I	0F10	0₹062	m <b>U</b> jg			06j60j18 16:07	
5 <b>0</b> 0		100	28	m <b>U</b> jg			04j06j18 10:25	2
eld Sampling								
	0.0041 0.051 0R00064 0R00064 0.001v 0R00065 0.0013 0.01v 0R00024 0R000085  MS) - Total Regult 12 250 89AA) Result 0R0000L0  Result 4800 2000 0.0v0 560	0.0041 0.051 0.0064 0.001v I 0.00065 0.0013 I 0.01v 0.00024 0.000085  MS) - Total Reco7erable Result Qualifier 12 250  Result Qualifier 4800 2000 0.0v0 I 5G0	0.0041   0R016   0.051   0R025   0R0064   0R0025   0R0064   0R0025   0R0064   0R0025   0R0064   0R0025   0R0040   0R0025   0R0065   0R0016   0.0013   0R0050   0R0050   0R0024   0R0016   0R00085   0R00050   0R00050	0.0041	0.0041	0.0041	0.0041	0.0041

4/13/2018

# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-5

SDG: Ash Pond

# **Qualifiers**

## **Metals**

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.
1	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

# **General Chemistry**

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

# **Glossary**

ML

NC

ND

PQL

QC

**RER** RL

RPD

TEF

**TEQ** 

Minimum Level (Dioxin)

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Not Detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Not Calculated

**Quality Control** 

Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit

# **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-5

SDG: Ash Pond

Client Sample ID: MW-13

Date Collectex: 4d/55/12 12:05 Date Receivex: 4d/5d/12 17:44 Lab Sample ID: 344-101524-3

Matri8: Water

	Batch	Batch		Dilution	Batch	Preparex		
Prep Type	Type	Methox	Run	Factor	Number	or Analyzex	Analyst	Lab
Total Recoverable	Prep	3005A			392275	04/01/16 12:08	DN1	TAL PEN
Total Recoverable	Analysis	7020		5	393107	04/07/16 18:39	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		392275	04/01/16 12:08	DN1	TAL PEN
Total Recoverable	Analysis	7020	DL	200	393107	04/08/16 07:22	DRE	TAL PEN
Total/NA	Prep	8480A			393404	04/10/16 12:09	JAP	TAL PEN
Total/NA	Analysis	8480A		1	393569	04/11/16 15:10	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	391585	03/28/16 13:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		40	392343	04/02/16 11:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	392170	03/30/16 13:07	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	392490	04/03/16 10:25	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	393585	03/22/16 16:52	AW	TAL PEN

## **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (650)484-1001

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TestAmerica Job ID: 400-151260-5 SDG: Ash Pond

Project/Site: CCR Smith Plant

Client: Gulf Power Company

Metals

Prep Batch: 39227L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4 - DM	v W-14	Total RecoUerable	Water	3005A	
400-151260-4	v W-14	Total RecoUerable	Water	3005A	
v L 400-372285/1-A F5	v ethod LlanB	Total Reco\(\text{Lerable}\)	Water	3005A	
MCS 400-372285/2-A	Mab Control Sample	Total Reco\(\text{\text{e}}\)rable	Water	3005A	
400-1511E0-L-24-L v S F5	v atri9 SpiBe	Total Reco\(\text{Lerable}\)	Water	3005A	
400-1511E0-L-24-C v SD F5	v atri9 SpiBe Duplicate	Total RecoUerable	Water	3005A	

Analysis Batch: 3935(7

bal Sample 🏻	Client Sample <b></b> ☐	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total RecoUerable	Water	8020	372285
400-151260-4 - DM	v W-14	Total RecoUerable	Water	8020	372285
v L 400-372285/1-A F5	v ethod LlanB	Total RecoUerable	Water	8020	372285
MCS 400-372285/2-A	Mab Control Sample	Total RecoUerable	Water	8020	372285
400-1511E0-L-24-L v S F5	v atri9 SpiBe	Total RecoUerable	Water	8020	372285
400-1511E0-L-24-C v SD F5	v atri9 SpiBe Duplicate	Total Reco\u00c4rable	Water	8020	372285

**Prep Batch: 393) ()** 

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total/^ A	Water	E4E0A	
v L 400-373404/14-A	v ethod LlanB	Total/^ A	Water	E4E0A	
MCS 400-373404/15-A	Mab Control Sample	Total/^ A	Water	E4E0A	
400-151260-L-1-C v S	v atri9 SpiBe	Total/^ A	Water	E4E0A	
400-151260-L-1-D v SD	v atri9 SpiBe Duplicate	Total/^ A	Water	E4E0A	

**Analysis Batch: 393L49** 

bal Sample II	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total/^ A	Water	E4E0A	373404
v L 400-373404/14-A	v ethod LlanB	Total/^ A	Water	E4E0A	373404
MCS 400-373404/15-A	Mab Control Sample	Total/^ A	Water	E4E0A	373404
400-151260-L-1-C v S	v atri9 SpiBe	Total/^ A	Water	E4E0A	373404
400-151260-L-1-D v SD	v atri9 SpiBe Duplicate	Total/^ A	Water	E4E0A	373404

# **0** eneral Chemistry

Analysis Batch: 395L1L

bal Sample IT 400-151260-4	Client Sample IT v W-14	Prep xype Total/^ A	Matrid Water	Metho8 Sv 2540C	Prep Batch
v L 400-3715E5/1	v ethod LlanB	Total/^ A	Water	Sv 2540C	
MCS 400-3715E5/2	Mab Control Sample	Total/^ A	Water	Sv 2540C	
400-1511E0-A-23 Dk	Duplicate	Total/^ A	Water	Sv 2540C	

**Analysis Batch: 39257(** 

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total/^ A	Water	Sv 4500 N C	
v L 400-372180/3	v ethod LlanB	Total/^ A	Water	Sv 4500 N C	
MCS 400-372180/4	Mab Control Sample	Total/^ A	Water	Sv 4500 N C	
400-151514-A-4 v S	v atri9 SpiBe	Total/^ A	Water	Sv 4500 N C	
400-151514-A-4 v SD	v atri9 SpiBe Duplicate	Total/^ A	Water	Sv 4500 N C	
400-151335-L-2 Dk	Duplicate	Total/^ A	Water	Sv 4500 N C	

TestAmerica Pensacola

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# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-5

SDG: Ash Pond

# 0 eneral Chemistry ©ontinue86

# Analysis Batch: 3923) 3

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total/^ A	Water	Sv 4500 Cl- x	
v L 400-372343/8	v ethod LlanB	Total/^ A	Water	Sv 4500 Cl- x	
MCS 400-372343/E	Mab Control Sample	Total/^ A	Water	Sv 4500 Cl- x	
v RM400-372343/3	Mab Control Sample	Total/^ A	Water	Sv 4500 Cl- x	
400-151258-A-4 v S	v atri9 SpiBe	Total/^ A	Water	Sv 4500 Cl- x	
400-151258-A-4 v SD	v atri9 SpiBe Duplicate	Total/^ A	Water	Sv 4500 Cl- x	

# Analysis Batch: 392) 9(

bal Sample IT	Client Sample <b></b> ☐	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total/^ A	Water	Sv 4500 SO4 x	
v L 400-372470/8	v ethod LlanB	Total/^ A	Water	Sv 4500 SO4 x	
MCS 400-372470/E	Mab Control Sample	Total/^ A	Water	Sv 4500 SO4 x	
v RM400-372470/3	Mab Control Sample	Total/^ A	Water	Sv 4500 SO4 x	
400-151335-L-1 v S	v atri9 SpiBe	Total/^ A	Water	Sv 4500 SO4 x	
400-151335-L-1 v SD	v atri9 SpiBe Duplicate	Total/^ A	Water	Sv 4500 SO4 x	

# Fiel8 Service / Mol ile bal

# Analysis Batch: 393L1L

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-151260-4	v W-14	Total/^ A	Water	Nield Sampling	

TestAmerica Job ID: 400-151260-5 SDG: Ash Pond

Client: Gulf Power Company Project/Site: CCR Smith Plant

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-392265/1-A ^5 **Matrix: Water** 

Analysis Batch: 393106

Client Sample ID: Method Blank **Prep Type: Total Recoverable** 

**Prep Batch: 392265** 

, many one Date in Coo i co								op = atom	
-	MB	MB						-	
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		04/01/16 12:03	04/08/16 14:14	5
Arsenic	0.00048	U	0.0019	0.00048	mg/L		04/01/16 12:03	04/08/16 14:14	5
Marium	0.0004B	U	0.0025	0.0004B	mg/L		04/01/16 12:03	04/08/16 14:14	5
Meryllium	0.00094	U	0.0025	0.00094	mg/L		04/01/16 12:03	04/08/16 14:14	5
Moron	0.021	U	0.050	0.021	mg/L		04/01/16 12:03	04/08/16 14:14	5
Cadmium	0.00094	U	0.0025	0.00094	mg/L		04/01/16 12:03	04/08/16 14:14	5
Calcium	0.19	U	0.25	0.19	mg/L		04/01/16 12:03	04/08/16 14:14	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		04/01/16 12:03	04/08/16 14:14	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		04/01/16 12:03	04/08/16 14:14	5
Lead	0.00095	U	0.0019	0.00095	mg/L		04/01/16 12:03	04/08/16 14:14	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		04/01/16 12:03	04/08/16 14:14	5
7 olybdenum	0.00065	U	0.015	0.00065	mg/L		04/01/16 12:03	04/08/16 14:14	5
Selenium	0.00024	U	0.0019	0.00024	mg/L		04/01/16 12:03	04/08/16 14:14	5
Thallium	0.000065	U	0.00050	0.000065	mg/L		04/01/16 12:03	04/08/16 14:14	5
_									

Lab Sample ID: LCS 400-392265/2-A

**Matrix: Water** 

Analysis Batch: 393106

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

Prep Batch: 392265

Analysis Batch: 393106	Spike	LCS LC	cs		%Rec.
Analyte	Added	Result Q	ualifier Unit	D %Rec	Limits
Antimony	0.0500	0.0526	mg/L		60 - 120
Arsenic	0.0500	0.0512	mg/L	102	60 - 120
Marium	0.0500	0.0505	mg/L	101	60 - 120
Meryllium	0.0500	0.0503	mg/L	101	60 - 120
Moron	0.100	0.104	mg/L	104	60 - 120
Cadmium	0.0500	0.0515	mg/L	109	60 - 120
Calcium	5.00	5.92	mg/L	108	60 - 120
Chromium	0.0500	0.04B3	mg/L	BB	60 - 120
Cobalt	0.0500	0.04B5	mg/L	BB	60 - 120
Lead	0.0500	0.0512	mg/L	102	60 - 120
Lithium	0.0500	0.0509	mg/L	101	60 - 120
7 olybdenum	0.0500	0.0514	mg/L	109	60 - 120
Selenium	0.0500	0.0466	mg/L	B6	60 - 120
Thallium	0.0100	0.00B68	mg/L	BB	60 - 120

Lab Sample ID: 400-151170-B-24-B MS ^5

**Matrix: Water** 

Analysis Batch: 393106

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable Prep Batch: 392265** 

7 maryolo Batom 000 roo	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Antimony	0.0010	U	0.0500	0.0558		mg/L		111	35 - 125
Arsenic	0.00048	U	0.0500	0.051B		mg/L		104	35 - 125
Marium	0.095		0.0500	0.0660		mg/L		103	35 - 125
Meryllium	0.00094	U	0.0500	0.0513		mg/L		109	35 - 125
Moron	0.021	U	0.100	0.111		mg/L		111	35 - 125
Cadmium	0.00094	U	0.0500	0.0512		mg/L		102	35 - 125
Calcium	15		5.00	20.1		mg/L		101	35 - 125
Chromium	0.0068		0.0500	0.056B		mg/L		101	35 - 125

TestAmerica Pensacola

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TestAmerica Job ID: 400-151260-5 SDG: Ash Pond

35 - 125

35 - 125

100

100

mg/L

mg/L

Client: Gulf Power Company Project/Site: CCR Smith Plant

Method: 6020 - Metals (ICP/MS) (Continued)

0.00024 U

0.000065 U

Lab Sample ID: 400-151170-B-24-B MS ^5 Matrix: Water Applying Retails 202106									Client Sample ID: Matrix Spike Prep Type: Total Recoverable					
Analysis Batch: 393106	Sample	e Sample Spike MS MS							Prep Batch: 392265 %Rec.					
Analyte	•	Qualifier	Added		Qualifier	Unit	D	%Rec	Limits					
Cobalt	0.00040	U	0.0500	0.0504		mg/L		101	35 - 125					
Lead	0.00095	U	0.0500	0.0516		mg/L		104	35 - 125					
Lithium	0.0011	U	0.0500	0.0853	J9	mg/L		191	35 - 125					
7 olybdenum	0.00065	U	0.0500	0.0593		mg/L		103	35 - 125					

0.0500

0.0100

Lab Sample ID: 400-151170-B-24-C MSD ^5 **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total Recoverable Matrix: Water

0.0502

0.0100

Selenium

Thallium

Matrix: water							P	гер тур	be: Total i	Recove	rable
Analysis Batch: 393106									Prep Ba	atch: 39	32265
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.0010	U	0.0500	0.0549		mg/L		10B	35 - 125	2	20
Arsenic	0.00048	U	0.0500	0.0521		mg/L		104	35 - 125	0	20
Marium	0.095		0.0500	0.0685		mg/L		104	35 - 125	2	20
Meryllium	0.00094	U	0.0500	0.0505		mg/L		101	35 - 125	2	20
Moron	0.021	U	0.100	0.10B		mg/L		10B	35 - 125	2	20
Cadmium	0.00094	U	0.0500	0.0593		mg/L		103	35 - 125	5	20
Calcium	15		5.00	20.4		mg/L		103	35 - 125	2	20
Chromium	0.0068		0.0500	0.0313	J9	mg/L		128	35 - 125	20	20
Cobalt	0.00040	U	0.0500	0.0504		mg/L		101	35 - 125	0	20
Lead	0.00095	U	0.0500	0.0516		mg/L		104	35 - 125	0	20
Lithium	0.0011	U	0.0500	0.0858	J9	mg/L		191	35 - 125	0	20
7 olybdenum	0.00065	U	0.0500	0.052B		mg/L		108	35 - 125	2	20
Selenium	0.00024	U	0.0500	0.04B2		mg/L		B6	35 - 125	2	20
Thallium	0.000065	U	0.0100	0.0101		mg/L		101	35 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-393404/14-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Prep Batch: 393404

Analysis Batch: 393589

MB MB Analyte Result Qualifier PQL **MDL** Unit Prepared Analyzed 0.00020 04/10/16 12:06 04/11/16 15:00 7 ercury 0.0000333 I 0.000030 mg/L

Lab Sample ID: LCS 400-393404/15-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 393589** Prep Batch: 393404 LCS LCS Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits

Lab Sample ID: 400-151280-B-1-C MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

0.00101

7 ercury

**Analysis Batch: 393589** Prep Batch: 393404 Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits

7 ercury 0.000030 U 0.00201 0.001B6 60 - 120 mg/L B6

0.00101

TestAmerica Pensacola

60 - 120

100

mg/L

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Client: Gulf Power Company TestAmerica Job ID: 400-151260-5 Project/Site: CCR Smith Plant SDG: Ash Pond

Lab Sample ID: 400-151280-B-1-D MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 393589 Prep Batch: 393404** Sample Sample Spike MSD MSD %Rec. **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.000030 U 0.00201 0.001B9 B8 60 - 120 2 20 7 ercury mg/L

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-391575/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 391575** MB MB

Result Qualifier POI Analyte MDL Unit Analyzed Dil Fac Prepared Total Dissolved Solids 5.0 9.4 U 9.4 mg/L 09/23/16 19:11

Lab Sample ID: LCS 400-391575/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 391575

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec

Total Dissolved Solids 2B9 260 mg/L B8 36 - 122

Lab Sample ID: 400-151170-A-23 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 391575** 

Sample Sample DU DU RPD Result Qualifier Result Qualifier Unit **RPD** Limit **Total Dissolved Solids** 38 38.0 mg/L

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-392343/6 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 392343** 

MR MR Analyte Result Qualifier PQL **MDL** Unit Prepared Dil Fac **Analyzed** Chloride 1.48 2.0 0.80 mg/L 04/02/16 11:0B

Lab Sample ID: LCS 400-392343/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit %Rec Limits Chloride 90.0 91.B 108 B0 <sub>-</sub> 110 mg/L

Lab Sample ID: MRL 400-392343/3 **Client Sample ID: Lab Control Sample** 

**Matrix: Water** 

**Analysis Batch: 392343** Spike MRL MRL %Rec.

Added Analyte Result Qualifier Unit D %Rec Limits Chloride 2.00 2.43 mg/L 129 50 - 150

TestAmerica Pensacola

Prep Type: Total/NA

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-5 SDG: Ash Pond

# Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: 400-151256-A-4 MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 392343	

	Sample	Sample	эріке	INIO	IVIO				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	B.9	N	10.0	1B.3		mg/L		104	39 - 120	 

Lab Sample ID: 400-151256-A-4 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392343** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	B.9	N	10.0	20.3		mg/L		114	39 - 120	5	6

# Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-392160/3	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

**Analysis Batch: 392160** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vluoride	0.092	U	0.10	0.092	mg/L			09/90/16 12:2B	1

Lab Sample ID: LCS 400-392160/4 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** Analysis Batch: 392160

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Vluoride	4.00	4.16		mg/L		105	B0 - 110	

Lab Sample ID: 400-151514-A-4 MS Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 392160

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Vluoride	0.13		1.00	1 28		ma/l		10B	35 - 125	

Lab Sample ID: 400-151514-A-4 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA Analysis Batch: 392160

• • • • • • • • • • • • • • • • • • • •	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Vluoride	0.13		1.00	1.28		mg/L		10B	35 - 125	0	4

Lab Sample ID: 400-151335-B-2 DU **Client Sample ID: Duplicate Matrix: Water Prep Type: Total/NA** 

Analysis Ratch: 392160

Allalysis Datcil. 332 100									
	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Vluoride	0.092	U	 0.092	U	mg/L			FC	4

# QC Sample Results

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151260-5

SDG: Ash Pond

# Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-392490/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392490** 

MB MB Analyte Result Qualifier PQL **MDL** Unit Analyzed Dil Fac D **Prepared** Sulfate 1.4 U 5.0 1.4 mg/L 04/09/16 0B:42

Lab Sample ID: LCS 400-392490/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392490** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec BB Sulfate 15.0 14.B mg/L B0 - 110

Lab Sample ID: MRL 400-392490/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 392490

Spike MRL MRL %Rec. Added Analyte Result Qualifier Limits Unit D %Rec Sulfate 5.00 4.54 I mg/L B1

Lab Sample ID: 400-151335-B-1 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 392490** 

Spike MS MS Sample Sample %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Sulfate 8.B 10.0 13.8 103 33 - 126 mg/L

Lab Sample ID: 400-151335-B-1 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 392490

Spike MSD MSD %Rec. **RPD** Sample Sample Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits RPD Limit Sulfate 8.B 10.0 13.3 mg/L 103 33 - 126

# **Chain of Custody Record**

**TestAmerica** 

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514-7045

phone 850.474.1001 fax 850.474.4789	Regulatory Program:	☐ DW ☐ NPDES	RCRA	Other:			TestAmerica Laboratories, Inc.
Client Contact	Project Manager:		Site Contact:			Date:	COC No:
Gulf Power Company	Tel/Fax:		Lab Contact: Chevenne Whitmire	evenne Whitmire		Carrier	) of the COCs
1 Energy Place	Analysis Turnaround Time	d Time		o' - :			Hacen
Pensacola, FL 32520	☐ CALENDAR DAYS ☐ W	WORKING DAYS		Cq'	би		For ab lea Only
(850) 444-6427 Phone	from B		_	. 600a	ilqı		Walkin Client
(xxx) xxx-xxxx FAX	2 weeks		S 28	16) , 4!	neś		The state of the s
CCR Smith Plant			( Y )	sbilts B , B	S PIF		Lab Sampling:
Site:	2 days		EbC 150 2D	oS     So	∌i∃ ·		
PO#			5 8 6 '9 W / S	lved St. E			SOO SOO NO.
Sample Identification	Sample Sample (C-Comp.) Date Time G-Graph	Matrix # of	Filtered Sai Perform MS Pa226Ra22 Pa226Ra22	SM4500_SG Total Disso S020 - Sb, A Cr, Co, Pb,	lqms2blei- srefemsrs <sup>c</sup>		Comments Consists Makes
MW-14	8 1852	(m) 3	K	X			Campia Chacille Notes.
Pa							
ge 1							
f 19							
Precentation lead: 4= los 2= UCI: 3= U2504: 4=UNO3: 5=NAOU; 6= O44.	- No. 17. 0.49.1						
Possible Hazard Identification:	=NaOH; b= Other						
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.	List any EPA Waste Codes for th	e sample in the		osal ( A ree may be	assessed if sample	Sample Lisposal ( A ree may be assessed ir samples are retained longer than 1 month)	nth)
Non-Hazard Flammable Skin Irritant	☐ Poison B ☐ Unl	Unknown	Return to Client	Cllent		Disposal by Lab	or Months
Special instructions/QC Requirements & Comments:							
[						4.5% 0.0%	2,0.0% /R.7
Custody Seals Intact: Yes No	Custody Seal No.:		000	Cooler Te	Cooler Temp. (°C): Obs'd:		Therm ID No.:
My Confidence of the Confidenc	Company:	3-25-18 1700		(Introduction	1	Company	Date/Time: 19, 1718
Kelinquished by	Company:	Date/Time:	Received by:			Company:	
reeinquished by:	Company:	Date/Time:	Received in Laboratory by:	aboratory by:		Company:	Date/Time:
5/2018						Form No.	Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151260-5

SDG Number: Ash Pond

Login Number: 151280 List Source: TestAmerica Pensacola

List Number: 1

Creator: Whitmire, Cheyenne R

oreator. Willume, oneyenne K		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.58C, 0.08C,0.08C °R-I
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Oeld Sampler's name present on C7 CF	True	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ? Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-151260-5
SDG: Ash Pond

## **Laboratory: TestAmerica Pensacola**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Alabama         State Program         4           ANAB         ISO/IEC 17025           Arizona         State Program         9           Arkansas DEQ         State Program         3           California         ELAP         9           Florida         NELAP         4           Georgia         State Program         4           Illinois         NELAP         5	40150     03-80-16       L2471     02-22-20       AZ0710     01-12-19       66-0369     09-01-16       2510     08-81-16 *       E61010     03-80-16       N/A     03-80-16       200041     10-09-16       837     06-01-16       E-10258     10-81-16       58     03-80-16       20044 10	,
Arizona State Program 9 Arkansas DEQ State Program 3 California ELAP 9 Florida NELAP 4 Georgia State Program 4	AZ0710 01-12-19 66-0369 09-01-16 2510 08-81-16 * E61010 03-80-16 N/A 03-80-16 200041 10-09-16 837 06-01-16 E-10258 10-81-16 58 03-80-16	
Arkansas DEQ State Program 3 California ELAP 9 Florida NELAP 4 Georgia State Program 4	66-0369 09-01-16 2510 08-81-16 * E61010 03-80-16 N/A 03-80-16 200041 10-09-16 837 06-01-16 E-10258 10-81-16 58 03-80-16	;
California ELAP 9 Florida NELAP 4 Georgia State Program 4	2510 08-81-16 * E61010 03-80-16 N/A 03-80-16 200041 10-09-16 837 06-01-16 E-10258 10-81-16 58 03-80-16	
Florida NELAP 4 Georgia State Program 4	E61010 03-80-16 N/A 03-80-16 200041 10-09-16 837 06-01-16 E-10258 10-81-16 58 03-80-16	
Georgia State Program 4	N/A 03-80-16 200041 10-09-16 837 06-01-16 E-10258 10-81-16 58 03-80-16	
	200041 10-09-16 837 06-01-16 E-10258 10-81-16 58 03-80-16	
Illinois NELAP 5	837 06-01-16 E-10258 10-81-16 58 03-80-16	
	E-10258 10-81-16 58 03-80-16	
lowa State Program 7	58 03-80-16	
Kansas NELAP 7		
Kentucky (UST) State Program 4	00000 40.04.40	
Kentucky (WW) State Program 4	96080 12-81-16	
Louisiana NELAP 3	80973 03-80-16	
Louisiana (DW) NELAP 3	LA170005 12-81-16	
Maryland State Program 8	288 09-80-16	
Massachusetts State Program 1	M-FL094 03-80-16	
Michigan State Program 5	9912 03-80-16	
New Jersey NELAP 2	FL003 03-80-16	
North Carolina (WW/SW) State Program 4	814 12-81-16	
Oklahoma State Program 3	9610 06-81-16	
Pennsylvania NELAP 8	36-00437 01-81-19	
Rhode Island State Program 1	LAO00807 12-80-16	
South Carolina State Program 4	93023 03-80-16	
Tennessee State Program 4	TN02907 03-80-16	
Texas NELAP 3	T104704263-17-12 09-80-16	
USDA Federal	P880-13-00172 05-24-19	
Virginia NELAP 8	430133 03-14-16	
Washington State Program 10	C915 05-15-16	
West Virginia DEP State Program 8	183 03-80-16	

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-151280-6

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Chayenaxwhitmin

Authorized for release by: 4/20/2018 2:27:52 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Case Narrative**

Client: Gulf Power Company Pro/ectSRite: CCh Rmitd Plant TestAmerica Job ID: 400-151280-j

RDG: Asd PonM

Job ID: 400-151280-6

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-151280-6

#### **RAD**

( etdoMys\_PrecRepB0: h aMum 228 Prep 6 atcd 1j 0-358187: Insufficient sample volume was available to perform a sample Muplicate )DUP,( R, ( RD\_ for tde following samples: ( W-14 )400-151280-4 . A laboratory control sampleSlaboratory control sample Muplicate )LCRS LCRD were prepareMinsteaMto Memonstrate batcd precision.

( etdoM)s\_PrecRep-21: h aMum 22j Prep 6 atcd 1j 0-358185: Insufficient sample volume was available to perform a sample Muplicate )DUP,( R, ( RD\_for tde following samples: ( W-14 )400-151280-4. A laboratory control sampleSlaboratory control sample Muplicate )LCRS LCRD\_were prepareMinsteaMto Memonstrate batcd precision.

# **Method Summary**

I rite Gt: u f riPwop er I omya Gs wro/ect Rhite: I I Wh mitd wra Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

Method	Method Description	Protocol	Laboratory
9315	Waj if m-22C (u Fwl )	h8 64C	TAL hL
9320	Waj if m-226 (u Fwl )	h8 64C	TAL hL
Wa22C_Wa226	I ombiGej Waj if m-22CaG Waj if m-226	TAL-hTL	TAL hL
wrechey_0	wreyaratioG wreciyitate heyaratioG	NoŒ	TAL hL
wrechey-21	wreyaratioG wreciyitate heyaratioG(21-DaSIGu rop td)	NoŒ	TAL hL

#### **Protocol References:**

NoGe = NoGe

h8 64C = "Test Metdoj s For EvanfatiQg horij 8 aste, wdSsicanR demicanMetdoj s", Tdirj Ej itioG, November 196CAQ Its Uyj ates.

TAL-hTL = TestAmerica Laboratories, ht. Lof is, FacinitShtaQ arj OyeratiQ wrocej f re.

#### **Laboratory References:**

TAL hL = TestAmerica ht. Lof is, 13715 Wj er TrainNortd, Eartd I itS, MO C3045, TEL (314)296-65CC

4/20/2018

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**b** 

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-151280-6

SDG: Ash Pond

La	b Sample ID	Client Sample ID	Matrix	Collected	Received
40	0-151280-4	MW-14	Water	03/22/18 18:52	03/23/18 17:00

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-6

SDG: Ash Pond

**Client Sample ID: MW-14** 

Date Collected: 03/22/18 18:52 Date Recei7ed: 03/23/18 1v:00

Lab Sample ID: 400-151280-4

**Matrix: Water** 

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.18		0.233	0.305	1.00	0.0717	pCi/L	03/29/18 14:03	04/20/18 05:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/29/18 14:03	04/20/18 05:46	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.60		0.362	0.434	1.00	0.313	pCi/L	03/29/18 14:47	04/05/18 14:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/29/18 14:47	04/05/18 14:51	1
Y Carrier	90.1		40 - 110					03/29/18 14:47	04/05/18 14:51	1

_			Count	nd Radium Total	1-220					
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	4.v8		0.431	0.530	5.00	0.313	pCi/L		04/20/18 12:23	1

## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-151280-6

SDG: Ash Pond

#### **Qualifiers**

#### Rad

Qualifier	Qualifier Description
-----------	-----------------------

U Result is less than the sample detection limit.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

**PQL Practical Quantitation Limit** 

QC **Quality Control** 

Relative Error Ratio (Radiochemistry) **RER** 

RLReporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

#### **Lab Chronicle**

Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant

TestAmerica Job ID: 400-151260-j

RDG: Asd Pon3

Client Sample ID: MW-13

Date Collectex: 4d/55/12 12:05 Date Receivex: 4d/5d/12 17:44 Lab Sample ID: 344-101524-3

Matri8: Water

	Batch	Batch		Dilution	Batch	Preparex		
Prep Type	Type	Methox	Run	Factor	Number	or Analyzex	Analyst	Lab
Total & A	Prep	PrecRep-21			856165	08\$27\$16 14:08	TJT	TA9 R9
Total & A	Analysis	7815		1	8j 1725	04\$20\$16 05:4j	hTN	TA9 R9
Total & A	Prep	PrecRepM0			85616_	08\$27\$16 14:4_	TJT	TA9 R9
Total\$ A	Analysis	7820		1	857055	04\$05\$16 14:51	hTN	TA9 R9
Total\$.A	Analysis	h a22j Mh a226		1	8j 204_	04\$20\$16 12:28	hTN	TA9 R9

#### **Laboratory References:**

TA9 R9 = TestAmerica Rt. 9ouis, 18\_15 h i3er Trail L ortd, Eartd City, N O j 8045, TE9 (814)276-65j j

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# **QC Association Summary**

I nieGt: ufnPwoperIomyaGS wro/ectRtite:IIWhmitdwnaGt TestAmerica Job ID: 400-151280-C

hDu: Asd woG

#### Rad

**Prep Batch: 358185** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151280-4	M3 -14	TotariNA	3 ater	wrech ey-21	
MB 100-658185RC-A	Metdoj BnaGk	Totar <b>R</b> IA	3 ater	wrech ey-21	
LI h 100-658185₹1-A	Lab I oGronhamyre	Totar <b>R</b> IA	3 ater	wrech ey-21	
LI hD 100-658185R2-A	Lab I octronhamyne Dfy	TotanRNA	3 ater	wrechey-21	

#### **Prep Batch: 358187**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-151280-4	M3 -14	TotariRIA	3 ater	wrechey_0	
MB 100-658187RC-A	Metdoj BnaGk	Totan RNA	3 ater	wrechey_0	
LI h 100-658187Fl-A	Lab I oGronhamyne	Totar <b>R</b> NA	3 ater	wrechey_0	
LI hD 100-658187F2-A	Lab I o@ronhamyne Df y	TotarRNA	3 ater	wrechey_0	

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I nie Gt: u f nPwoper I omya GS wro/ectRtite: I I U h mitd wna Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

#### Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-357175/16-A

Lab Sample ID: LCS 160-357175/1-A

**Matrix: Water** 

**Matrix: Water** 

**Analysis Batch: 361925** 

Client Sample ID: Method Blank Prep Type: Total/NA

**Prep Batch: 357175** 

_			Count	Total					
	MB	MB	Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-22C	0.08663	9	0.0481	0.0482	1.00	0.0C76 yl iRL	08R23R16 14:08	04R20R16 05:4C	1

MB MB

**%Yield Qualifier** Carrier Limits Ba Carrier 102 40 - 110

03/29/18 14:03 04/20/18 05:46

Prepared

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

**Prep Batch: 357175** 

Analyzed

**Analysis Batch: 361925** Total Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits Uaj if m-22C 11.6 10.3C 1.11 1.00 0.0708 yl iRL 38 C6 <sub>-</sub> 187

LCS LCS

Carrier %Yield Qualifier Limits Ba Carrier 101 40 - 110

Lab Sample ID: LCSD 160-357175/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Water** 

**Analysis Batch: 361925** 

Prep Type: Total/NA

**Prep Batch: 357175** 

Total

Spike LCSD LCSD Uncert. %Rec. R8R Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits R8R Limit Uaj if m-22C 11.6 10.30 1.11 1.00 0.0774 yl iRL 32 O6 <sub>-</sub> 187 0.08

LCSD LCSD

Carrier %Yield Qualifier Limits Ba Carrier 103 40 - 110

#### Method: 9320 - Radium-227 (GFPC)

Lab Sample ID: MB 160-35717E/16-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

Analysis Batch: 359056

Analysis Baton, oo	0000						i icp Batcii.	301 11 L
_		Count	Total					
	MB MB	Uncert.	Uncert.					
Analyte	Result Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-226	0.1271 9	0.166	0.166	1.00	0.81C vI iR.	08R23R16 14:47	04R05R16 14:45	

MB MB Carrier **%Yield Qualifier** Limits Prepared Dil Fac Analyzed Ba Carrier 102 40 - 110 03/29/18 14:47 04/05/18 14:45 Y Carrier 90.8 40 - 110 03/29/18 14:47 04/05/18 14:45

Dil Fac

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Prep Batch: 35717E

# **QC Sample Results**

I rie G: u f rPwop er I omya Gs wro/ectRtite: I I U h mitd wra Gt TestAmerica Job ID: 400-151260-C

hDu: Asd woG

#### Method: 9320 - Radium-227 (GFPC) (Continued)

Lab Sample ID: LCS 160-35717E/1-A

Matrix: Water

Analysis Batch: 359056

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 35717E

				ı otai				
	Spike	LCS	LCS	Uncert.				%Rec.
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits
Uaj if m-226	6.42	6.808		0.378	1.00	0.840 yl iRL	33	5C- 140

	LCS L	.00	
Carrier	%Yield Q	Qualifier Limit	its
Ba Carrier	101	40 - 1	110
Y Carrier	88.6	40 - 1	110

Lab Sample ID: LCSD 160-35717E/2-A

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 359056

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 35717E

				Total						
	Spike	LCSD	LCSD	Uncert.				%Rec.		R8R
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	R8R	Limit
Uaj if m-226	6.42	7.65C		0.325	1.00	0.828 yl iRL	38	5C- 140	0.24	1

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	90.1		40 - 110

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Form No. CA-C-WI-002, Rev. 4.16, dated 3/20/2018

# Chain of Custody Record

**TestAmerica** 

	514_7045	

TestAmerica Pensacola 3355 McLemore Drive

Pensacola, FL 32514-7045 phone 850.474.1001 fax 850.474.4789	Regulatory Program:	□ DW □ NPDES	RCRA	Other:		TestAmerica Laboratories. Inc	
Cllent Contact	Project Manager:		Site Contact:		Date:	COC No:	-
Gulf Power Company	Tel/Fax:		Lab Contact: Chevenne Whitmire	litrire	Carrier	1 of 1 COCs	_
1 Energy Place	Analysis Turnaround Time		5			Haden	_
Pensacola, FL 32520	☐ CALENDAR DAYS ☐ WO	☐ WORKING DAYS		A0.		Fort ah Use Only	_
(850) 444-6427 Phone	TAT if different from Below		52	<b>17</b> L		Walk-in Client	_
(xxx) xxx-xxxx FAX	2 weeks		1 / / I	<u>'H</u>		Lab Sampling:	_
Project Name: CCR Smith Plant	1 week		() C Orid Sulf	'əg			-
Site:	2 days	.,	Е - 3 СРИ 350 320	,oM		ON SOS / dol.	_
PO#	1 day		D 8: 6 '9	6ui 1 '!7			_
Sample Handiland	Sample Sample (CECOMP.	* (	erform MS 315_Ra22 M4500_SC M4500_SC M4500_SC	020 - Sb, Pb, r, Co, Pb, ercury eldSampl arameters		9	
		_	8 8 8	W C		Sample Specific Notes:	_
HI- MW	3-3/2-18 1852 (-	6w 3	X	X			_
							_
F							_
<sup>o</sup> ag							_
e 1							_
20							_
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Preservation Used: 1≈ Ice, 2≈ HCl; 3≈ H2SO4; 4=HNO3; 5=NaOH; 6= Other	=NaOH; 6= Other						_
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sar Comments Section if the lab is to dispose of the sample.	ist any EPA Waste Codes for the	sample in the	Sample Disposal ( A fi	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	les are retained longer than	1 month)	
Non-Hazard Flammable Skin Irritant	Poison B Unknown	)Wn	Return to Client		Dienocal by Lab	Archive for Months	
Special Instructions/QC Requirements & Comments:					1		
Custody Seals Intact: Tves No	Custody Seal No.:		< <	Cooler Temp. (°C): Obs'd:	Corr'd:	) ) )	
Relinquished by:	Company:	Date/Time:	Received by:	11.	Company	Date/Time: 10	
Relinquished by		Date/Time:	Received by:		Company:	2	
Adjudnished by:	Company:	Date/Time:	Received in Laboratory by:	by:	Company:	Date/Time:	

**d**/2018

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151260-S

DAG Number: s hd Pon/

Login Number: 151280 List Source: TestAmerica Pensacola

List Number: 1

Creator: Whitmire, Cheyenne R

oreator. Williame, Oneyenne K		
Question	Answer	Comment
c a/ ioavti' ity wahnkt vdev <e a="" ah="" bav<.="" by="" ey="" hur'="" ih="Rg" meahure="" metert<="" or="" roun="" td=""><td>NRs</td><td></td></e>	NRs	
, de voolerk vuhto/ y heal8if prehent8ih intavtT	, rue	
Dample vuhto/ y healh8if prehent8are intavtT	NRs	
, de vooler or hampleh / o not appear to da' e been vompromihe/ or tampere/ witdT	, rue	
Dampleh were revei' e/ on iveT	, rue	
Cooler , emperature ih avveptableT	, rue	
Cooler , emperature ih revor/ e/ T	, rue	475°C8070°C8070°C lc -7
COC ih prehentT	, rue	
COC ih fille/ out in in< an/ le. ibleT	, rue	
COC ih fille/ out witd all pertinent informationT	, rue	
Ih tde Fiel/ Damplerkh name prehent on COC?	, rue	
, dere are no / ihvrepanvieh between tde vontainerh revei' e/ $$ an/ $$ tde COCT $$	, rue	
Dampleh are revei' e/ witdin Hol/ in. , ime (exvlu/ in. tehth witd imme/ iate H, h) $$	, rue	
Dample vontainerh da' e le. ible labelhT	, rue	
Containerh are not bro <en lea⊲in.="" or="" t<="" td=""><td>, rue</td><td></td></en>	, rue	
Dample vollevtion / ateRimeh are pro' i/ e/ T	, rue	
s ppropriate hample vontainerh are uhe/ T	, rue	
Dample bottleh are vompletely fille/ T	, rue	
Dample Preher' ation Verifie/ T	, rue	
, dere ih huffivient ' olTfor all requehte/ analyheh8invlTany requehte/ MDRMDAh	, rue	
Containerh requirin. zero dea/ hpave da' e no dea/ hpave or bubble ih =Smm (1R/")T	NRs	
Multipdahiv hampleh are not prehentT	, rue	
Dampleh / o not require hplittin. or vompohitin. T	, rue	
c ehi/ ual Cdlorine Cdev <e t<="" td=""><td>NRs</td><td></td></e>	NRs	

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# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-151260-S

DAG Number: s hd Pon/

Login Number: 151280
List Source: TestAmerica St. Louis
List Number: 2
List Creation: 03/27/18 01:48 PM

Creator: Taylor, Kristene N

Creator: Taylor, Kristene N		
Question	Answer	Comment
c a/ ioavti' ity wahnkt vdev <e a="" ah="" bav<.="" by="" ey="" hur'="" ih="Rg" meahure="" metert<="" or="" roun="" td=""><td>, rue</td><td></td></e>	, rue	
, de voolerk vuhto/ y heal8if prehent8ih intavtT	, rue	
Dample vuhto/ y healh8if prehent8are intavtT	NRs	
, de vooler or hampleh / o not appear to da' e been vompromihe/ or tampere/ witd $\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	, rue	
Dampleh were revei' e/ on iveT	NRs	
Cooler , emperature ih avveptableT	, rue	
Cooler , emperature ih revor/ e/ T	, rue	197081970
COC ih prehentT	, rue	
COC ih fille/ out in in< an/ le. ibleT	, rue	
COC ih fille/ out witd all pertinent informationT	, rue	
Ih tde Fiel/ Damplerkh name prehent on COC?	Falhe	
, dere are no / ihvrepanvieh between tde vontainerh revei' e/ an/ tde $\ensuremath{COCT}$	, rue	
Dampleh are revei' e/ witdin Hol/ in. , ime (exvlu/ in. tehth witd imme/ iate H, h)	, rue	
Dample vontainerh da' e le. ible labelhT	, rue	
Containerh are not bro <en lea≺in.="" or="" t<="" td=""><td>, rue</td><td></td></en>	, rue	
Dample vollevtion / ateRimeh are pro' i/ e/ T	, rue	
s ppropriate hample vontainerh are uhe/ T	, rue	
Dample bottleh are vompletely fille/ T	, rue	
Dample Preher' ation Verifie/ T	, rue	
, dere ih huffivient ' olTfor all requehte/ analyheh8invlTany requehte/ MDRMDAh	, rue	
Containerh requirin. zero dea/ hpave da' e no dea/ hpave or bubble ih =Smm (1♣")T	NRs	
Multipdahiv hampleh are not prehentT	, rue	
Dampleh / o not require hplittin. or vompohitin. T	, rue	

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# **Accreditation/Certification Summary**

Client: Gulf Power Company TestAmerica Job ID: 400-151260-j Pro/ectsRite: CCh Rmitd Plant RDG: Asd Pon.

#### Laboratory: TestAmerica Pensacola

All accre. itations ertifications del. by tdis laboratory are liste. Ng ot all accre. itations ertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	Rtate Pro3ram	4	40150	0j -80-16
Ag AB	IROSEC 17025		L2471	02-22-20
Arizona	Rtate Pro3ram	9	AZ0710	01-12-19
Arkansas DEQ	Rtate Pro3ram	j	66-0j 69	09-01-16
California	ELAP	9	2510	08-81-16 *
Flori. a	g ELAP	4	E61010	0j -80-16
Geor3ia	Rtate Pro3ram	4	g SA	0j -80-16
Illinois	g ELAP	5	200041	10-09-16
Iowa	Rtate Pro3ram	7	8j 7	06-01-16
Kansas	g ELAP	7	E-10258	10-81-16
Kentucky (URT)	Rtate Pro3ram	4	58	0j -80-16
Kentucky (WW)	Rtate Pro3ram	4	96080	12-81-16
Louisiana	g ELAP	j	8097j	0j -80-16
Louisiana (DW)	g ELAP	j	LA170005	12-81-16
Marylan.	Rtate Pro3ram	8	288	09-80-16
Massacdusetts	Rtate Pro3ram	1	M-FL094	0j -80-16
Micdi3an	Rtate Pro3ram	5	9912	0j -80-16
g ew Jersey	g ELAP	2	FL00j	0j -80-16
g ortd Carolina (WW\$RW)	Rtate Pro3ram	4	814	12-81-16
Okladoma	Rtate Pro3ram	j	9610	06-81-16
Pennsylvania	g ELAP	8	j 6-004j 7	01-81-19
h do. e Islan.	Rtate Pro3ram	1	LAO00807	12-80-16
Routd Carolina	Rtate Pro3ram	4	9j 02j	0j -80-16
Tennessee	Rtate Pro3ram	4	Tg 02907	0j -80-16
Texas	gELAP	j	T10470426j -17-12	09-80-16
URDA	Fe. eral		P880-1j -00172	05-24-19
Vir3inia	g ELAP	8	4j 01j j	0j -14-16
Wasdin3ton	Rtate Pro3ram	10	C915	05-15-16
West Vir3inia DEP	Rtate Pro3ram	8	18j	0j -80-16

#### Laboratory: TestAmerica St. Louis

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	Rtate Pro3ram	10	MO00054	0i -80-16 *
Arizona	Rtate Pro3ram	9	AZ0618	12-06-16
California	Rtate Pro3ram	9	266j	0j -80-16 *
Connecticut	Rtate Pro3ram	1	PH-0241	08-81-19
Flori. a	g ELAP	4	E67j 69	0j -80-16 *
Illinois	g ELAP	5	200028	11-80-16
lowa	Rtate Pro3ram	7	878	12-01-16
Kansas	g ELAP	7	E-1028j	10-81-16
Kentucky (DW)	Rtate Pro3ram	4	90125	12-81-16
L-A-B	DoD ELAP		L2805	04-0j -19
Louisiana	g ELAP	j	04060	0j -80-16
Louisiana (DW)	g ELAP	j	LA160017	12-81-16
Marylan.	Rtate Pro3ram	8	810	09-80-16
Micdi3an	Rtate Pro3ram	5	9005	0j -80-16
Missouri	Rtate Pro3ram	7	760	0j -80-16
geva. a	Rtate Pro3ram	9	MO000542016-1	07-81-16

<sup>\*</sup> Accre. itation Sertification renewal pen. in3 - accre. itation Sertification consi. ere. vali. N

TestAmerica Pensacola

# **Accreditation/Certification Summary**

Client: Gulf Power Company

TestAmerica Job ID: 400-151260-j

Pro/ect\$Rite: CCh Rmitd Plant

RDG: Asd Pon.

#### Laboratory: TestAmerica St. Louis (Continued)

All accre. itations&ertifications del. by tdis laboratory are liste. Ng ot all accre. itations&ertifications are applicable to tdis reportN

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
g ew Jersey	gELAP	2	MO002	0j -80-16 *
g ew York	g ELAP	2	11j 1j	08-81-19
g ortd Dakota	Rtate Pro3ram	6	h 207	0j -80-16
ghC	ghC		24-24617-01	12-81-22
Okladoma	Rtate Pro3ram	j	9997	06-81-16
Pennsylvania	g ELAP	8	j 6-00540	02-26-19
Routd Carolina	Rtate Pro3ram	4	65002001	0j -80-16
Texas	g ELAP	j	T104704198-17-11	07-81-16
UR Fisd & Wil. life	Fe. eral		056446	06-81-16
URDA	Fe. eral		P880-17-0026	02-02-20
Utad	g ELAP	6	MO00054201j -6	07-81-16
Vir3inia	g ELAP	8	4j 0280	0j -14-16 *
Wasdin3ton	Rtate Pro3ram	10	C592	06-80-16
West Vir3inia DEP	Rtate Pro3ram	8	861	06-81-16 *

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<sup>\*</sup> Accre. itation Scertification renewal pen. in3 - accre. itation Scertification consi. ere. vali. N

TestAmerica Pensacola

# Geosyntec consultants

180A Market Place Boulevard Knoxville, TN 37922 PH 865.330.0037 www.geosyntec.com

Final Review: JK Caprio 9/7/18

#### Memorandum

Date: August 28, 2018

To: Carl Eldred

From: Chris Pracheil

CC: H. Parthasarathy and J. Caprio

Subject: Stage 2A Data Validations - Level II Data Deliverables -

TestAmerica Laboratories, Inc. Job Numbers 400-151256-1, 400-151256-2, 400-151256-8, 400-151280-1, 400-151280-2, 400-151280-3,

400-151280-4, 400-151280-5 and 400-151280-6

**SITE: Plant Smith** 

#### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eleven aqueous samples, three field duplicate samples, two field blanks and two equipment blanks collected from March 20 to 23, 2018, as part of the Plant Smith CCR sampling event.

The samples were analyzed at TestAmerica Pensacola (TA Pensacola), Pensacola, Florida, for the following analytical tests:

- Metals by EPA Methods 3005A/6020
- Mercury by EPA Method 7470A
- Chloride by Standard Methods (SM) 4500 Cl
- Fluoride by SM 45000 F
- Sulfate by SM 4500 SO<sub>4</sub>
- Total Dissolved Solids by SM 2540 C

The samples were analyzed at TestAmerica St. Louis (TA St. Louis), Earth City, MO for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Combine Radium 226 + 228 by Calculation

#### **EXECUTIVE SUMMARY**

The samples were handled, prepared and measured in the same manner under similar prescribed conditions.

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- National Functional Guidelines for Inorganic Superfund Data Review, August 2014 (OSWER 9355.0-131, EPA 540-R-013-001);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

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

Laboratory ID	Client ID
400-151256-1	MW-12
400-151256-2	MW-03
400-151256-3	DUP-01
400-151256-4	MW-02
400-151256-5	MW-07
400-151256-6	MW-06
400-151256-8	MW-10
400-151256-10	FB-01
400-151256-11	EB-01

Laboratory ID	Client ID
400-151256-12	MW-08
400-151256-15	MW-09
400-151256-16	EB-02
400-151256-17	FB-02
400-151256-18	DUP-04
400-151280-1	MW-11
400-151280-2	DUP-02
400-151280-3	MW-13
400-151280-4	MW-14

The samples were received within 0-6°C, with the following exceptions. The samples that were sent to TA St. Louis were received at 19.0°C and 22.0°C, since these samples were being analyzed

for radium-226 and radium-228 and did not require cooling, no qualifications were applied to the data.

No sample preservation issues were noted by the laboratory.

#### 1.0 METALS

The samples were analyzed by EPA methods 3005A/6020 (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ⊗ Field Blank
- ✓ Equipment Blank
- ⊗ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the sample set is 100%.

#### 1.2 **Holding Time**

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding time was met for the sample analyses.

Final Review: JK Caprio 9/7/18

#### 1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 392227 and 392265). Metals were not detected in the method blanks above the method detection limits (MDLs).

#### 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample MW-12. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exception.

The MS recovery of lithium was high and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample MW-12. Therefore, the concentrations of lithium in the associated samples were J qualified as estimated.

One batch MS/MSD pair was also reported for the metals data. Since these were batch QC, the results do not affect the samples in this data set and no qualifications were applied to the data based on the batch QC.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
MW-12	Lithium	0.016	NA	0.016	J	M+
MW-03	Lithium	0.016	NA	0.016	J	M+
DUP-01	Lithium	0.015	NA	0.015	J	M+
MW-02	Lithium	0.012	NA	0.012	J	M+
MW-07	Lithium	0.0023	I	0.0023	J	M+
MW-06	Lithium	0.019	NA	0.019	J	M+
EB-01	Lithium	0.0014	I	0.0014	J	M+
FB-01	Lithium	0.0015	I	0.0015	J	M+
EB-01	Lithium	0.0014	I	0.0014	J	M+
MW-08	Lithium	0.011	NA	0.011	J	M+
MW-10	Lithium	0.0065	NA	0.0065	J	M+
MW-09	Lithium	0.0056	NA	0.0056	J	M+
EB-02	Lithium	0.0011	Ι	0.0011	J	M+
FB-02	Lithium	0.0017	Ι	0.0017	J	M+
DUP-04	Lithium	0.0056	NA	0.0056	J	M+

mg/L- milligram per liter

NA-not applicable

I-the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

<sup>\*-</sup>Validation qualifiers are defined in Attachment 1 at the end of this report

<sup>\*\*-</sup>Reason codes are defined in Attachment 2 at the end of this report

#### 1.5 Laboratory Control Sample (LCS)

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

#### 1.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs, with the following exceptions.

Lithium and selenium were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-01 and lithium was detected at an estimated concentration, greater than the MDL and less the RL in FB-02. Therefore, the concentrations of lithium and selenium in the associated samples that were less than five times the field blank concentrations were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
		110,000 (111,000)	19	11000110 (111g/ 23)	Q	0040
MW-07	Lithium	0.0023	I	0.0023	U*	BF
EB-01	Lithium	0.0014	I	0.0014	U*	BF
MW-10	Lithium	0.0065		0.0065	U*	BF
MW-14	Lithium	0.0013	I	0.0013	U*	BF
MW-09	Lithium	0.0056	NA	0.0056	U*	BF
EB-02	Lithium	0.0011	I	0.0011	U*	BF
DUP-04	Lithium	0.0056		0.0056	U*	BF
MW-03	Selenium	0.00069	I	0.00069	U*	BF
DUP-01	Selenium	0.00024	I	0.00024	U*	BF
MW-07	Selenium	0.00062	I	0.00062	U*	BF
MW-06	Selenium	0.00037	I	0.00037	U*	BF
MW-11	Selenium	0.00066	I	0.00066	U*	BF
DUP-02	Selenium	0.00065	I	0.00065	U*	BF
FB-01	Selenium	0.00045	I	0.00045	U*	BF
MW-08	Selenium	0.0003	I	0.0003	U*	BF

mg/L- milligram per liter

NA-not applicable

I-the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

#### 1.7 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs, with the following exceptions.

Lithium was detected at an estimated concentration, greater than the MDL and less the RL in EB-01 and EB-02. Since the lithium concentrations in the equipment blanks were U\* qualified as not detected due to equipment blank contamination, no additional qualifications were applied to the lithium data.

#### 1.8 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-04. Acceptable precision [(RPD  $\leq$  20% or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-11 and MW-09, respectively, with the following exception.

The concentration of chromium was less than 5 times the reporting limit for DUP-02 and the difference between the concentrations of chromium in the field duplicate pair using samples DUP-02 and MW-11 was greater than the RL. Therefore the concentrations of chromium in samples DUP-02 and MW-11 were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result (mg/L)	Validation Qualifier	Reason Code
DUP-02	Chromium	0.0061	NA	27	0.0061	J	FD
MW-11	Chromium	0.068	NA		0.068	J	FD

mg/L- milligram per liter NA-not applicable

#### **Sensitivity**

The samples were reported to the MDLs. Elevated non-detect results were reported due to the dilutions analyzed.

#### 1.9 <u>Electronic Data Deliverables (EDDs) Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

#### 2.0 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 2.2 Holding Time

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding time was met for the sample analyses.

#### 2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 392228, 393327 and 393404). Mercury was not detected in the method blanks above the MDL, with the following exception.

Mercury was detected at an estimated concentration, greater than the MDL and less than the RL in the method blank for batch 393404. Since mercury was not detected in the associated samples, no qualifications were applied to the data.

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

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample MW-11. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

Two batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 2.5 <u>Laboratory Control Sample</u>

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

#### 2.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Mercury was not detected in the field blanks above the MDLs.

#### 2.7 **Equipment Blank**

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

#### 2.8 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-04. Acceptable precision [(RPD < 20% or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-11 and MW-09, respectively.

Final Review: JK Caprio 9/7/18

#### 2.9 Sensitivity

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

#### 2.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

#### 3.0 ANIONS

The samples were analyzed for chloride by SM 4500 Cl, fluoride by SM 4500 F and sulfate by SM 4500 SO<sub>4</sub>.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 3.1 Overall Assessment

The anion data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 3.2 Holding Times

The holding time for anion analyses of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Nine method blanks were reported (chloride batches 392314, 392343 and 392625; fluoride batches 391874, 392128 and 392160; sulfate batches 391402, 391563 and 392490). Anions were not detected in the method blanks above the MDLs, with the following exceptions.

Chloride was detected at estimated concentrations, greater than the MDL and less than the RL, in the method blanks for batches 392314, 392343 and 392625. Therefore, the concentrations of chloride in the associated samples that were less than five times the method blank concentrations were U\* qualified as not detected at the reported values.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
EB-01	Chloride	0.96	ΙV	0.96	U*	BL
FB-01	Chloride	0.81	ΙV	0.81	U*	BL
EB-02	Chloride	0.90	ΙV	0.90	U*	BL
FB-02	Chloride	0.74	ΙV	0.74	U*	BL

mg/L- milligram per liter

I-the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit V-indicates that the analyte was detected above the method detection limit in the sample and the associated method blank and the value of 10 times the blank value was equal to or greater than the associated sample value

#### 3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported, using samples MW-02 and MW-03 for the chloride data. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

In addition, one batch MS/MSD pairs was reported for the chloride data, three batch MS/MSD pairs were reported for the fluoride data and three batch MS/MSD pairs were reported for the sulfate data. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 3.5 <u>Laboratory Control Sample</u>

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

## 3.6 <u>Laboratory Duplicate</u>

One sample set specific laboratory duplicate was reported for the fluoride data, using sample MW-07. The RPD result was within the laboratory and SOP specified acceptance criteria.

#### 3.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Anions were not detected in the field blanks above the MDLs, with the following exceptions.

Chloride was detected at an estimated concentration, greater than the MDL and less the RL in FB-01 and FB-02. Since the concentrations of chloride in FB-01 and FB-02 were U\* qualified as not detected at the reported concentration due to method blank contamination, no qualifications were applied to the chloride data based on the field blank concentrations.

#### 3.8 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Anions were not detected in the equipment blanks above the MDLs, with the following exception.

Chloride was detected at an estimated concentration, greater than the MDL and less the RL in EB-01 and EB-02. Since the concentrations of chloride in EB-01 and EB-02 were U\* qualified as not detected at the reported concentration due to method blank contamination, no qualifications were applied to the chloride data based on the equipment blank concentrations.

#### 3.9 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02and DUP-04. Acceptable precision [(RPD < 20% or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-11 and MW-09, respectively.

#### 3.10 Sensitivity

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

#### 3.11 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

#### 4.0 TOTAL DISSOLVED SOLIDS

The samples were analyzed for total dissolved solids (TDS) by SM 2540C.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ⊗ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 4.1 Overall Assessment

The TDS data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### **4.2 Holding Times**

The holding time for TDS analyses of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported (batches 391316, 391438, 391566, 391575 and 391578). TDS was not detected in the method blanks above the MDL.

#### 4.4 <u>Laboratory Control Sample</u>

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

#### 4.5 <u>Laboratory Duplicate</u>

Five batch laboratory duplicates were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 4.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. TDS was not detected in the field blanks above the MDLs.

#### 4.7 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. TDS was not detected in the equipment blanks above the MDLs.

#### 4.8 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-04. Acceptable precision [(RPD < 20% or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-11 and MW-09, respectively, with the following exceptions.

The TDS field duplicate RPDs for field duplicate pairs MW-03 and DUP-01 and MW-09 and DUP-04 were high and outside the SOP specified acceptance criteria. Therefore, the concentrations of TDS in samples MW-03, DUP-01, MW-09 and DUP-04 were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result (mg/L)	Validation Qualifier	Reason Code
DUP-01	Total Dissolved Solids	54	NA	127	54	J	FD
MW-03	Total Dissolved Solids	12	NA		12	J	FD
DUP-04	Total Dissolved Solids	2900	NA	52	2900	J	FD
MW-09	Total Dissolved Solids	1700	NA		1700	J	FD

mg/L- milligram per liter NA-not applicable

#### 4.9 Sensitivity

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

#### 4.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs

#### 5.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and combine radium 226+228 by calculation.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Field Blank
- ✓ Equipment Blank

- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 5.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### **5.2 Holding Times**

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 5.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the radium-226 data (batches 357975 and 358185). Two method blanks were reported for the radium-228 data (batches 357987 and 358187). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

#### 5.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported with the data.

#### 5.5 <u>Laboratory Control Sample</u>

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

#### 5.6 <u>Laboratory Duplicate</u>

One batch laboratory duplicate was reported for the radium-226 data and one batch laboratory duplicate was reported for the radium-228 data. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 5.7 <u>Tracers and Carriers</u>

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### 5.8 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Radium was not detected in the field blanks above the MDCs.

#### 5.9 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Radium was not detected in the equipment blanks above the MDCs.

#### 5.10 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-04. Acceptable precision [(RER  $(2\sigma) \ge 3$ ] was demonstrated between the field duplicates and original samples MW-03, MW-11 and MW-09, respectively.

#### 5.11 **Sensitivity**

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

#### **5.12** Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

\* \* \* \* \*

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# ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY

Assigned by Geosyntec's Data Validation Team per the SOP

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious analytical efficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the staple and meet quality control criteria. The analyte may or may not be present in the sample.

Final Review: JK Caprio 9/7/18

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# ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BE	Equipment blank contamination. The result should be
	considered "not-detected."
BF	Field blank contamination. The result should be considered
	"not-detected."
BL	Laboratory blank contamination. The result should be considered
	"not-detected."
FD	Field duplicate imprecision.
M+	MS and/or MSD recoveries outside of acceptance limits. The
	result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result
	may be biased low.

Final Review: JK Caprio 9/7/18

Date: 2018-06-08 08:29:36

10 ft 13.13 ft Total Volume Pumped	PP PE .17 in 42 ft 35 ft 400 mL/min 0.2774638 L 300 sec 57.4 in 18 L	Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length  Pump placement from TOC  Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0" 0° 0' 0" 424893 Hach 2100Q 2 in 40 ft 13.13 ft	Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN Turbidity Make/Model Well ID Well ID Well diameter Well Total Depth Screen Length Depth to Water
	0.27 / 4638 L 300 sec	lotal System Volume Calculated Sample Rate	2 m 40 ft	neter al Depth
2 in Total System Volume 40 ft Calculated Sample Rate	400 mL/min	Final Pumping Rate	MW-06	
MW-06 Final Pumping Rate 2 in Total System Volume 40 ft Calculated Sample Rate		Pumping Information:		rmation:
Pumping Information: MW-06 Final Pumping Rate 2 in A0 ft Calculated Sample Rate	35 ft	Pump placement from TOC	Hach 2100Q	' Make/Model
Hach 2100Q Pump placement from TOC  Pumping Information:  MW-06 Final Pumping Rate  2 in Total System Volume 40 ft Calculated Sample Rate			424893	Z
424893  Hach 2100Q  Pump placement from TOC  Pumping Information:  Final Pumping Rate  2 in  2 in  40 ft  Calculated Sample Rate			0 .0 00	de
00 0' 0" 424893  Hach 2100Q  Pumping Information:  MW-06  Z in  Calculated Sample Rate  2 in  Calculated Sample Rate			"0 <sub>0</sub> 0 0	
00 0' 0" 00 0' 0" 424893  Hach 2100Q  Pumping Information: Final Pumping Rate 2 in 2 in 40 ft  Calculated Sample Rate	42 ft	Tubing Length	Smith Plant	ле
Smith Plant Tubing Length 0º 0' 0" 0º 0' 0" 424893 Hach 2100Q Pumping Information: Final Pumping Rate 2 in 2 in 40 ft Calculated Sample Rate	.17 in	Tubing Diameter	Smith CCR	lame
Smith CCR Smith Plant 0º 0' 0" 0º 0' 0" 424893 Hach 2100Q Pumping Information: Final Pumping Rate 2 in 2 in 40 ft Calculated Sample Rate	PE	Tubing Type	RDH Env	/ Name
RDH Env Smith CCR Smith Plant 0º 0' 0" 0º 0' 0" 424893 Hach 2100Q Pumping Information: Final Pumping Rate 2 in 2 in 40 ft Calculated Sample Rate	ЬР	Pump Model/Type	Rick Hagendorfer	Name
Rick Hagendorfer Pump Model/Type RDH Env Smith CCR Smith Plant 00 0' 0" 00 0' 0" 424893 Hach 2100Q Hach 2100Q WW-06 Z in Final Pumping Rate Calculated Sample Rate		Pump Information:		formation:

	ORP mV	+/- 10	-122.21	-116.33	-113.47	-111.14	-109.56	2.86	2.33	1.59
	RDO mg/L	+/- 0.2	0.27	0.26	0.23	0.21	0.18	-0.03	-0.03	-0.02
	DTW ft		17.51	17.68	17.85	17.99	18.07			
	/cm Turb NTU	+/- 5	4.92	4.69	3.76	3.46	2.60		83.17	
	SpCond µS	+/- 5%	9469.37	9585.58	9727.44	9810.61	9900.00	141.86	83.17	89.39
	Hd	+/- 0.2	5.39	5.34	5.30	5.27	5.25	-0.04	-0.02	-0.02
			23.56	23.58	23.61	23.61	23.64	0.03	0.00	0.03
ation Summary	Elapsed		1500.06	1800.02	2100.01	2403.01	2703.00			
npling Stabiliz	Time Elapsed		08:04:24	08:09:24	08:14:23	08:19:26	08:24:26			
Low-Flow Sai		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 0829. Dup-03 fake sample time 0605. PC 81.

Date: 2018-06-08 10:10:25

PP PE .17 in 42 ft	35.0 ft	400 mL/min 0.2774638 L 300 sec 11.4 in 16 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0" 424893	Hach 2100Q	MW-07 2 in 40 ft 10 ft 11.49 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

	ORP mV	+/- 10	-204.57	-204.54	-204.42	-204.92	-204.93	0.12	-0.50	-0.02
	RDO mg/L	+/- 0.2	0.08	0.07	0.07	0.07	90.0	-0.01	-0.00	-0.00
	DTW ft		12.45	12.45	12.45	12.45	12.45			
	/cm Turb NTU	4/- 5	9.30	8.08	6.39	3.82	2.74			
	SpCond µS	+/- 2%	5698.01	5714.71	5704.09	5713.89	5716.54	-10.62	9.80	2.65
	Hd	+/- 0.2	6.28	6.29	6.30	6.30	6.31	0.01	0.01	0.01
	•	+/- 0.2	23.34	23.34	23.34	23.36	23.38	-0.00	0.02	0.02
ation Summary	Time Elapsed		1199.97	1499.97	1799.97	2099.97	2399.97			
mpling Stabiliz	Time		09:47:47	09:52:47	09:57:47	10:02:47	10:07:47			
Low-Flow Sa		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 1011. FB-02 sample time 0912. EB-02 sample time 0917. PC 84.

Date: 2018-06-07 13:15:09

	ЬР	PE	.17 in	45 ft				38.0 ft		400 mL/min	0.290854 L	300 sec	88.4 in	20 L	
Pump Information:	Pump Model/Type	Tubing Type	Tubing Diameter	Tubing Length				Pump placement from TOC	Pumping Information:	Final Pumping Rate	Total System Volume	Calculated Sample Rate	Stabilization Drawdown	Total Volume Pumped	
	Rick Hagendorfer	RDH Env	Smith CCR	Smith Plant	,,0,0,0	.0 0 0 0	424893	Hach 2100Q		MW-08	2 in	43 ft	10 ft	16.95 ft	
Project Information:	Operator Name	Company Name	Project Name	Site Name	Latitude	Longitude	Sonde SN	Turbidity Make/Model	Well Information:	Well ID	Well diameter	Well Total Depth	Screen Length	Depth to Water	

	ORP mV	+/- 10	-109.16	-108.68	-108.41	-109.03	-108.62	0.27	-0.63	0.41
	RDO mg/L	+/- 0.2	60.0	0.08	0.08	0.08	0.08	-0.00	-0.00	-0.00
	DTW ft		23.71	23.96	24.15	24.29	24.41			
	cm Turb NTU	4/- 5	2.82	1.94	3.02	1.79	1.91		10.66	
	SpCond µS/	+/- 2%	11470.37	11449.78	11453.13	11463.79	11432.56	3.35	10.66	-31.23
	Hd	+/- 0.2	4.72	4.72	4.72	4.73	4.73	0.00	0.01	0.00
		+/- 0.2	24.32	24.37	24.43	24.46	24.54	0.05	0.03	0.08
ation Summary	Time Elapsed		1802.02	2102.02	2402.02	2702.02	3002.02			
mpling Stabiliz	Time		12:50:14	12:55:14	13:00:14	13:05:14	13:10:14			
Low-Flow Sa		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 1314. Dup-02 fake sample time 0700. FB-01 sample time 1150. EB-01 sample time 1155. PC 87.

Date: 2018-06-07 17:21:11

PP PE .17 in 34 ft	28.0 ft	400 mL/min 0.2417564 L 300 sec 19.4 in 10 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	424893 Hach 2100Q	MW-09 2 in 33 ft 10 ft 10.84 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

Low-Flow Sa	ımpling Stabiliz	ation Summary							
	Time	Time Elapsed		Hd	SpCond µS/	/cm Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 2%	5% +/- 5		+/- 0.2	+/- 10
Last 5	16:57:24	300.02	25.71	6.63	7559.77	2.22	11.98	0.11	-250.73
Last 5	17:02:24	600.02	25.53	6.56	7775.95	1.86	12.48	60.0	-244.07
Last 5	17:07:24	900.02	25.32	6.54	7808.23	1.23	12.53	0.07	-240.65
Last 5	17:12:24	1199.96	25.28	6.54	7789.89	1.31	12.56	0.07	-238.33
Last 5	17:17:24	1499.96	25.33	6.52	7835.13	1.38	12.58	90.0	-236.60
Variance 0			-0.21	-0.02	32.28			-0.01	3.42
Variance 1			-0.04	-0.01	-18.34			-0.01	2.32
Variance 2			90.0	-0.02	45.24			-0.00	1.74

Notes Sample time 1721. PC 87.

Date: 2018-06-07 19:48:01

			ORP mV	+/- 10	-144.01 -143.42	-142.71 -141.37	-141.77 0.71	1.34	-0.40
PP PE .17 in 35 ft	28.0 ft	400 mL/min 0.2462198 L 300 sec 14.8 in 42 L	RDO mg/L	+/- 0.2	0.09	ග ට ට ට	0.00	-0.00	-0.00
σ σ <i>τ</i> . ω	2	40054	DTW ft		8.28	8 .2 8 .2 8 .2 8 .2	8.28		
ıformation: 1odel/Type Type Diameter Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU	4/- 5	4.52	4.16 3.69	3.36		
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Informatio Final Pumping Rate Total System Volum Calculated Sample Stabilization Drawd Total Volume Pump	SpCond µS	+/- 2%	9531.92 9543.84	9573.73	9571.51 29.89	4.49	-6.71
			Hd	+/- 0.2	5.34	5.35 3.45	5.35 0.01	-0.01	0.01
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	424893 Hach 2100Q	t	Temp C	+/- 0.2	24.64 24.51	24.38 24.28	24.23 -0.12	-0.10	-0.05
Rick Hag RDH Env Smith CC Smith Pla 0° 0' 0"	424893 Hach 21	MW-10 2 in 33 ft 10 ft 7.01 ft	Low-Flow Sampling Stabilization Summary Time Elapsed		5099.97 5399.97	5699.97 5999.92	6299.92		
mation: ne me e	ke/Model	tion: "r spth th ter	mpling Stabiliz Time		19:26:23 19:31:23	19:36:23 19:41:23	19:46:23		
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sa	Stabilization	Last 5 Last 5	Last 5 Last 5	Last 5 Variance 0	Variance 1	Variance 2

Notes Sample time 1948. Sunset 82. Grab Samples

Date: 2018-06-07 08:45:05

			ORP mV +/- 10 -323.94 -323.55 -322.85 -323.15 -322.60 0.70 -0.30
PP PE 17 in 35 ft	28.0 ft	400 mL/min 0.2462198 L 300 sec 42 in 12 L	RDO mg/L +/- 0.2 0.03 0.04 0.04 0.05 0.00 0.00
H H 15. 88	28	900 301	DTW ft 12.12 12.43 12.72 12.72
rmation: lel/Type se meter ngth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU +/- 5% +/- 5% 5823.71 3.15 6215.23 4.04 6426.44 4.86 6532.87 5.83 6607.80 5.87 211.21 74.92
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Informatio Final Pumping Rate Total System Volum Calculated Sample Stabilization Drawd Total Volume Pump	SpCond µS +/- 5% 5823.71 6215.23 6426.44 6532.87 6607.80 211.21 106.43 74.92
			pH +/- 0.2 6.53 6.48 6.43 6.40 6.39 -0.05 -0.03
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	424893 Hach 2100Q	F + + #	Temp C +/- 0.2 27.75 25.73 25.60 25.60 25.68 -0.13 0.17
Rick Hae RDH Env Smith C Smith PI 0° 0' 0" 0"	424893 Hach 21	MW-11 2 in 33 ft 10 ft 9.10 ft	ation Summary Elapsed 599.96 899.96 1199.96 1499.96
nation: ne me	ce/Model	tion: r pth :h er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 08:22:39 599.96 Last 5 08:37:39 1199.96 Last 5 08:37:39 1499.96 Variance 0 Variance 1 Variance 2
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1

Notes Sample time 0845. Sunny 81.

Date: 2018-06-07 11:21:47

			ORP mV	+/- 10	-306.85	-308.55 -308.55 -307.98	0.27	-0.03	0.56
PP PE .17 in 45 ft	38.0 ft	400 mL/min 0.290854 L 300 sec 64.6 in 14 L	RDO mg/L	+/- 0.2	0.06	0.0 0.0 0.0 0.0	-0.00	-0.00	-0.00
G G C	38	04 0 30 8 44 44	DTW ft		19.29 19.62	19.98 20.05			
nation: sl/Type e neter gth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU	+/-5	0.75	0.45 0.36			
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump place	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Ra Stabilization Drawdow Total Volume Pumped	SpCond µS/	+/- 5%	14382.71 14411.33	14480.07 14489.31 14599.21	68.73	9.24	109.90
			Ha	+/- 0.2	6.86 6.87 7.00	0.00 0.87 0.87	-0.00	0.00	-0.01
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	424893 Hach 2100Q	MW-13 2 in 43 ft 10 ft 14.69 ft	y Temp C	+/- 0.2	24.85 24.90	24.89 24.89 24.82	0.09	-0.10	-0.06
S S S S S S S S S S S S S S S S S S S	424 Had	MW-7 2 in 43 ft 10 ft 14.69	Low-Flow Sampling Stabilization Summary Time Elapsed	-	900.02	1800.02 1800.02 2100.02			
mation: me ame e	ke/Model	tion: er epth th ter	ampling Stabiliz Time		10:58:50 11:03:50	11:08:30 11:13:50 11:18:50			
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sa	Stabilization	Last 5 Last 5	Last 5 Last 5 Last 5	Variance 0	Variance 1	Variance 2

Notes Sample time 1122. PC 84.

Date: 2018-06-07 14:42:39

PP PE .17 in 43 ft	36.0 ft	400 mL/min 0.2819272 L 300 sec 9.4 in 8 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	0° 0' 0" 424893 Hach 2100Q	MW-14 2 in 41 ft 10 ft 22.04 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude	Longitude Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

	ORP mV	+/- 10	-275.02	-274.10	-271.91	-270.94		0.92	2.19	0.97
	RDO mg/L	+/- 0.2	0.14	0.10	0.09	0.08		-0.03	-0.02	-0.01
	DTW ft		22.95	22.95	22.97	22.98				
	/cm Turb NTU	+/- 5% +/- 5	1.62	1.10	0.94	0.87				
		+/- 5%	7454.45	7543.39	7639.30	7654.07		88.94	95.90	14.77
		+/- 0.2	06.9	06.9	6.89	6.88		0.00	-0.01	-0.01
	Temp C	+/- 0.2	25.54	25.05	24.96	25.01		-0.49	-0.09	0.05
ation Summary	Time Elapsed		300.02	600.02	900.02	1200.02				
mpling Stabiliz	Time		14:23:13	14:28:13	14:33:13	14:38:13				
Low-Flow Sa		Stabilization	Last 5	Last 5	Last 5	Last 5	Last 5	Variance 0	Variance 1	Variance 2

Notes Sample time 1442. PC 86.

Date: 2018-06-06 14:10:05

										ORP mV	+/- 10	-60.79	-//.25	-78.25	01.8/-	-16.46	-1.00	-0.85
	<u>2</u> .	<b>:</b> ±		) ft		400 mL/min 0.2149758 L 300 sec 21 in 10 L			RDO mg/L	+/- 0.2	0.11	0.0	0.07	0.00	-0.04	-0.01	-0.01	
	PP PE	28 ft 28 ft 21.0 ft 400 m 0.2149 300 se 21 in 10 L				101		DTW ft		5.41	5.80	5.86	5. 8. 8.					
rmation:	del/Type pe	Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC		nformation:	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped						1.76	1.56	1.78 1.63				
Pump Information:	Pump Model/Type Tubing Type			Pump plac						SpCond µS/cmTurb NTU	+/- 2%	233.13	235.00	239.30	240.91	1.87	4.30	1.61
										Hd	+/- 0.2	6.41	6.43	6.46	6.4/	0.02	0.03	0.01
	Rick Hagendorfer RDH Env Smith CCP	RDH Env Smith CCR Smith Plant 0° 0' 0" 0° 0' 0" 424893 Hach 2100Q	93 2100Q		02	¥		Temp C	+/- 0.2	23.10	22.80	22.76	22.70	-0.30	-0.04	-0.06		
	Rick RDH		Hach		MW-02	26 ft 10 ft	4.01 ft	ition Summary	Elapsed		300.05	899.50	1199.51	1499.51				
nation:	le Je	n Φ	Model		on:	ë £			Low-Flow Sampling Stabilization Summary	Time		13:45:09	13:55:08	14:00:08	14:05:08			
Project Information:	Operator Name Company Name	Site Name Latitude	Longitude Sonde SN	Turbidity Make/Model	Well Information:	Well ID	Well Total Dek Screen Length	Depth to Water	Low-Flow San		Stabilization	Last 5	Last 5	Last 5	Last 5 Last 5	Variance 0	Variance 1	Variance 2

Notes Sample time 1410. PC 83.

Date: 2018-06-06 19:01:42

Project Information:		Pump Information:	
Operator Name Company Name	Rick Hagendorfer RDH Fnv	Pump Model/Type Tubing Type	PP PF
Project Name	Smith CCR	Tubing Diameter	.17 in
Site Name	Smith Plant	Tubing Length	35 ft
Latitude	0,00		
Longitude	.0 0 0 0.0		
Sonde SN	424893		
Turbidity Make/Model	Hach 2100Q	Pump placement from TOC	28.0 ft
Well Information:		Pumping Information:	
Well ID	MW-03	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.2462198 L
Well Total Depth	33 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.02 in
Depth to Water	5.49 ft	Total Volume Pumped	50 L
Low-Flow Sampling Stabilization Summary	nmarv		

	ORP mV	+/- 10	31.60	30.80	30.01	29.34	28.77	-0.80	-0.66	-0.57
	RDO mg/L	+/- 0.2	0.05	90.0	0.05	0.07	90.0	-0.01	0.02	-0.01
	DTW ft		5.71	5.71	5.72	5.72	5.72			
	S/cm Turb NTU	+/- 2	16.30	15.70	15.00	13.80	13.50			
	SpCond µ	+/- 2%	49.34	49.51	49.38	49.41	49.33	-0.14	0.03	-0.07
	Hd	+/- 0.2	4.97	4.97	4.96	4.96	4.96	-0.01	-0.00	-0.00
	Temp C	+/- 0.2	22.44	22.43	22.40	22.40	22.40	-0.03	-0.00	-0.00
ation Summary	Time Elapsed		6299.90	06.6659	06.6689	7199.89	7499.90			
npling Stabiliz	Time		18:36:11	18:41:11	18:46:11	18:51:11	18:56:11			
Low-Flow Sar		Stabilization	Last 5	Variance 0	Variance 1	Variance 2				

Notes Sample time 1902. Dup-01 fake sample time 0600. PC 85.

Date: 2018-06-06 16:06:27

			ORP mV	+/- 10	-25.13 -26.72	-28.18	-29.55 -31.25	-1.46	-1.37	-1.70	
ï. <del>I.</del>	27 ft	400 mL/min 0.2417564 L 300 sec 85 in 20 L	I/om Oda	+/- 0.2	0.06	0.05	0.05	0.00	-0.00	-0.00	
9P 77.	27	040 00.0 00.0 00.0 00.0	# MTC	:	16.10 16.45	16.68	16.92				
rmation: lel/Type oe imeter ngth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	Sond 118/cm Tirb NTL	+/- 5	6.81 7.45	3.97	3.86 9.02 9.02				
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Informatic Final Pumping Rate Total System Volum Calculated Sample Stabilization Drawd Total Volume Pump	on puodus	+/- 5%	1019.02 992.45	977.14	966.86 954.51	-15.30	-10.28	-12.35	
			I	+/- 0.2	6.07	90.9	6.05 6.04	-0.01	-0.01	-0.01	
Rick Hagendorfer RDH Env Smith CCR Smith Plant 0° 0' 0"	424893 Hach 2100Q	-12 t t 3 ft	Temp	·	23.43	23.29	23.25 23.19	0.00	-0.05	-0.06	
Rick Hag RDH En Smith C Smith PI 0° 0' 0"	424893 Hach 21	MW-12 2 in 32 ft 10 ft 9.83 ft	ation Summary Flanced	1 2 5 0 0	1800.02 2100.02	2399.91	2699.91 3004.91				dy 85.
nation: ne ne	:e/Model	ion: pth h	Low-Flow Sampling Stabilization Summary Time	)	15:42:58 15:47:58	15:52:58	15:57:58 16:03:03				es Sample time 1606. Cloudy 85.
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar	Stabilization	Last 5 Last 5	Last 5	Last 5 Last 5	Variance 0	Variance 1	Variance 2	Notes Sample ti

**Grab Samples** 



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-154881-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

Revision: 1

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Cheyroaxwhitmin

Authorized for release by: 9/18/2018 11:11:16 AM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# 6

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	0	

#### Case Narrative

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Job ID: 400-154881-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-154881-2

#### **RAD**

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370673: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-14 (400-154881-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370673: Sample aliguots 400-154881-1,2,3,4,5,6,7, and 10 were reduced due to potential matrix interference. Samples were yellow, murky, and had strong odors similar to that of sulfur. Sample aliquots 400154881-8,9,11,12,13,14,15,16,17,18,19, and 20 were reduced due to potential matrix interference. Samples were murky and had strong odors similar to that of sulfur. MW-14 (400-154881-2).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370670: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-14 (400-154881-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370670: Sample aliquots 400-154881-1,2,3,4,5,6,7, and 10 were reduced due to potential matrix interference. Samples were yellow, murky, and had strong odors similar to that of sulfur. Sample aliquots 400154881-8,9,11,12,13,14,15,16,17,18,19, and 20 were reduced due to potential matrix interference. Samples were murky and had strong odors similar to that of sulfur, MW-14 (400-154881-2).

#### Metals

Method(s) 6020: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-14 (400-154881-2). Elevated reporting limits (RLs) are provided.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-14 (400-154881-2). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 403304 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-14 (400-154881-2), (400-154880-B-3), (400-154880-B-3 MS) and (400-154880-B-3 MSD). Elevated reporting limits (RLs) are provided.

Revised to reported a lower dilution.

3

TestAmerica Pensacola 9/18/2018 (Rev. 1)

#### **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

ba4 Sample ID: L00-15L221-8

SM 4500 F C

Field Sampling

SM 4500 SO4 E Total/NA

30

1

SDG: Ash Pond

Total/NA

Total/NA

## Client Sample ID: MW-1L

Fluoride

Sulfate

Field pH

Analyte	Result	Qualifier	PQb	MDb	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0051		0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.051		0.0025	0.00049	mg/L	5		6020	Total
						_			Recoverable
Molybdenum	0.016		0.015	0.00085	mg/L	5		6020	Total
<u></u>						<u>.</u> .			Recoverable
Selenium	0.00041	1	0.0013	0.00024	mg/L	5		6020	Total
_					_				Recoverable
Boron - DL	12		2.0	0.84	mg/L	200		6020	Total
					_				Recoverable
Calcium - DL	260		10	5.0	mg/L	200		6020	Total
									Recoverable
Total Dissolved Solids	4200		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	2200		120	36	mg/L	60		SM 4500 CI- E	Total/NA

0.10

150

0.032 mg/L

42 mg/L

SU

0.080 I

590

6.88

#### **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
Field Sampling	Field Sampling	EPA	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

#### **Protocol References:**

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001 TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

4

**5** 

7

10

11

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4

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-154881-2	MW-14	Water	06/07/18 14:42	06/08/18 13:50

Client: Gulf Power Company Project/Site: CCR Smith Plant

**Total Dissolved Solids** 

Chloride

Fluoride

**Sulfate** 

Field pH

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Client Sample ID: MW-14

Date Collected: 06/07/18 14:42 Date Received: 06/08/18 13:50

Method: 6020 - Metals (ICP/MS) - Total Recoverable

4200

2200

0.080 I

590

6.88

Lab Sample ID: 400-154881-2

**Matrix: Water** 

06/13/18 18:25

07/02/18 09:43

07/02/18 11:24

07/02/18 15:16

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0051		0.0013	0.00046	mg/L		06/22/18 11:58	06/25/18 22:02	5
Barium	0.051		0.0025	0.00049	mg/L		06/22/18 11:58	06/25/18 22:02	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		06/22/18 11:58	06/25/18 22:02	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		06/22/18 11:58	06/25/18 22:02	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		06/22/18 11:58	06/25/18 22:02	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/22/18 11:58	06/25/18 22:02	5
Molybdenum	0.016		0.015	0.00085	mg/L		06/22/18 11:58	06/25/18 22:02	5
Selenium	0.00041	I	0.0013	0.00024	mg/L		06/22/18 11:58	06/25/18 22:02	5
- Method: 6020 - Metals (ICP/MS	) - Total Re	coverable	- DL						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	12		2.0	0.84	mg/L		06/22/18 11:58	06/25/18 20:10	200
Calcium	260		10	5.0	mg/L		06/22/18 11:58	06/25/18 20:10	200
General Chemistry									
Analyte		Qualifier	PQL		Unit	D	Prepared	Analyzed	Dil Fac

Method: 9315 - R	adium-226 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.74		0.617	0.664	1.00	0.418	pCi/L	06/15/18 16:02	07/11/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	63.8		40 - 110					03/12/18 13:09	05/11/18 19:96	1

50

120

0.10

150

34 mg/L

36 mg/L

42 mg/L

0.032 mg/L

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.14		0.493	0.531	1.00	0.583	pCi/L	06/15/18 17:02	07/11/18 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	63.8		40 - 110					03/12/18 15:09	05/11/18 06:4Y	1
7 Carrier	55.0		40 - 110					03/12/18 15:09	05/11/18 06:4Y	1

Method: Ra226_Ra2	228 - Con	nbined Radiu	um-226 ai Count Uncert.	nd Radium Total Uncert.	-228						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit		Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	4.88		0.790	0.850	5.00	0.583	pCi/L			07/12/18 17:53	1
Method: Field Samp	oling - Fie		Qualifier	PQ	L	MDL Unit	t	D	Prepared	Analyzed	Dil Fac

SU

TestAmerica Pensacola

06/07/18 14:42

60

30

#### **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154221-8

SDG: Ash Pond

#### **Qualifiers**

#### **Metals**

Qualifier	Qualifier Description
3	Indicates that the compound was analyEed for but not detectedv
1	The reported ; alue is between the laboratory method detection limit and the laboratory practical . uantitation limit

#### **General Chemistry**

Qualifier	Qualifier Description
Jk	Ustimated ; aluez; alue may not be accuratev Spiqe reco; ery or RPD outside of criteriav
I	The reported; alue is between the laboratory method detection limit and the laboratory practical. uantitation limit
3	Indicates that the compound was analyEed for but not detectedv
Rad	
Qualifier	Qualifier Description
3	Result is less than the sample detection limity

#### Glossary

These commonly used abbreviations may or may not be present in this report.
Listed under the "D" column to designate that the result is reported on a dry weight basis
Percent Reco; ery
Contains Free Li. uid
Contains No Free Li. uid
Duplicate Urror Ratio (normaliEed absolute difference)
Dilution Factor
Detection Limit (DoD/DOU)
Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
Decision Le; el Concentration (Radiochemistry)
Ustimated Detection Limit (Dioxin)
Limit of Detection (DoD/DOU)
Limit of Quantitation (DoD/DOU)
Minimum Detectable Acti; ity (Radiochemistry)
Minimum Detectable Concentration (Radiochemistry)

MDC MDL ML

Method Detection Limit Minimum Le; el (Dioxin)

NC Not Calculated

NDNot Detected at the reporting limit (or MDL or UDL if shown)

PQL Practical Quantitation Limit

QC **Quality Control** 

**RUR** Relati; e Urror Ratio (Radiochemistry)

Reporting Limit or Re. uested Limit (Radiochemistry) RL

**RPD** Relati; e Percent Difference, a measure of the relati; e difference between two points

TUF Toxicity U. ui; alent Factor (Dioxin) TUQ Toxicity U. ui; alent Quotient (Dioxin)

TestAmerica Pensacola

#### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Client Sample ID: MW-14

Lab Sample ID: 400-154881-2

**Matrix: Water** 

	Collected:		
Date	Received:	06/08/18	13:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	200	402495	06/25/18 20:10	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 22:02	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	403212	07/02/18 09:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403221	07/02/18 11:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:16	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 12:29	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404432	06/07/18 14:42	CDH	TAL PEN

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001 TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

**Metals** 

**Prep Batch: 402138** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2 - DL	MW-14	Total Recoverable	Water	3005A	
400-154881-2	MW-14	Total Recoverable	Water	3005A	
MB 400-402138/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-402138/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-154881-B-7-B MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-154881-B-7-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 402495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2 - DL	MW-14	Total Recoverable	Water	6020	402138
400-154881-2	MW-14	Total Recoverable	Water	6020	402138
MB 400-402138/1-A ^5	Method Blank	Total Recoverable	Water	6020	402138
LCS 400-402138/2-A	Lab Control Sample	Total Recoverable	Water	6020	402138
400-154881-B-7-B MS ^5	Matrix Spike	Total Recoverable	Water	6020	402138
400-154881-B-7-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	402138

**General Chemistry** 

Analysis Batch: 400948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	MW-14	Total/NA	Water	SM 2540C	
MB 400-400948/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-400948/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-154880-B-3 DU	Duplicate	Total/NA	Water	SM 2540C	

**Analysis Batch: 403212** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	MW-14	Total/NA	Water	SM 4500 CI- E	
MB 400-403212/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-403212/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-154880-B-4 MS	Matrix Spike	Total/NA	Water	SM 4500 CI- E	

**Analysis Batch: 403221** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	MW-14	Total/NA	Water	SM 4500 F C	
MB 400-403221/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-403221/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-154742-B-4 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-154742-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-154881-A-7 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 403304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	MW-14	Total/NA	Water	SM 4500 SO4 E	
MB 400-403304/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-403304/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-403304/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-154880-B-3 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-154880-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

TestAmerica Pensacola

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## **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

#### Rad

#### **Prep Batch: 370670**

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
1	400-154881-2	MW-14	Total/NA	Water	PrecSep-21	
	MB 160-370670/23-A	Method Blank	Total/NA	Water	PrecSep-21	
	LCS 160-370670/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
	LCSD 160-370670/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

#### **Prep Batch: 370673**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	MW-14	Total/NA	Water	PrecSep_0	
MB 160-370673/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-370673/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-370673/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

#### Field Service / Mobile Lab

#### **Analysis Batch: 404432**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	MW-14	Total/NA	Water	Field Sampling	

Client: Gulf Power Company

Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

3

#### Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-402138/1-A ^5

Matrix: Water

Analysis Batch: 402495

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 402138

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/22/18 11:58	06/25/18 18:44	5
Barium	0.00049	U	0.0025	0.00049	mg/L		06/22/18 11:58	06/25/18 18:44	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		06/22/18 11:58	06/25/18 18:44	5
Boron	0.021	U	0.050	0.021	mg/L		06/22/18 11:58	06/25/18 18:44	5
Calcium	0.13	U	0.25	0.13	mg/L		06/22/18 11:58	06/25/18 18:44	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		06/22/18 11:58	06/25/18 18:44	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		06/22/18 11:58	06/25/18 18:44	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/22/18 11:58	06/25/18 18:44	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		06/22/18 11:58	06/25/18 18:44	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		06/22/18 11:58	06/25/18 18:44	5

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Arsenic	0.0500	0.0515		mg/L		103	80 - 120	
Barium	0.0500	0.0487		mg/L		97	80 - 120	
Beryllium	0.0500	0.0486		mg/L		97	80 - 120	
Boron	0.100	0.0977		mg/L		98	80 - 120	
Calcium	5.00	4.94		mg/L		99	80 - 120	
Chromium	0.0500	0.0502		mg/L		100	80 - 120	
Cobalt	0.0500	0.0506		mg/L		101	80 - 120	
Lithium	0.0500	0.0531		mg/L		106	80 - 120	
Molybdenum	0.0500	0.0488		mg/L		98	80 - 120	
Selenium	0.0500	0.0525		ma/L		105	80 - 120	

Lab Sample ID: 400-154881-B-7-B MS ^5

Matrix: Water

Analysis Batch: 402495

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 402138

Analysis Batch: 402495	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	0.00046	U	0.0500	0.0534		mg/L		107	75 - 125
Barium	0.017		0.0500	0.0679		mg/L		102	75 - 125
Beryllium	0.00034	U	0.0500	0.0494		mg/L		99	75 - 125
Boron	0.027	1	0.100	0.131		mg/L		104	75 - 125
Calcium	32		5.00	38.0		mg/L		115	75 - 125
Chromium	0.0029		0.0500	0.0544		mg/L		103	75 - 125
Cobalt	0.00040	U	0.0500	0.0528		mg/L		106	75 - 125
Lithium	0.0051		0.0500	0.0518		mg/L		93	75 - 125
Molybdenum	0.00085	U	0.0500	0.0483		mg/L		97	75 - 125
Selenium	0.00024	Ü	0.0500	0.0519		mg/L		104	75 - 125

Lab Sample ID: 400-154881-B-7-C MSD ^5						Client Sample ID: Matrix Spike Duplicate					
Matrix: Water						Prep Type: Total Recoverable					
Analysis Batch: 402495			Prep Batch: 40213				02138				
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.00046	U	0.0500	0.0528		mg/L		106	75 - 125	1	20

TestAmerica Pensacola

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TestAmerica Job ID: 400-154881-2

Client: Gulf Power Company Project/Site: CCR Smith Plant

SDG: Ash Pond

#### Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-154881 Matrix: Water Analysis Batch: 402495	-B-7-C MS	D ^5				Client	ke Dupl Recove atch: 40	rable			
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.017		0.0500	0.0647		mg/L		95	75 - 125	5	20
Beryllium	0.00034	U	0.0500	0.0480		mg/L		96	75 - 125	3	20
Boron	0.027	I	0.100	0.129		mg/L		102	75 - 125	1	20
Calcium	32		5.00	37.0		mg/L		96	75 - 125	2	20
Chromium	0.0029		0.0500	0.0542		mg/L		103	75 - 125	0	20
Cobalt	0.00040	U	0.0500	0.0521		mg/L		104	75 - 125	2	20
Lithium	0.0051		0.0500	0.0514		mg/L		93	75 - 125	1	20
Molybdenum	0.00085	U	0.0500	0.0480		mg/L		96	75 - 125	1	20
Selenium	0.00024	U	0.0500	0.0521		mg/L		104	75 - 125	0	20

#### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-400948/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA Analysis Batch: 400948

MR MR PQL Result Qualifier **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids 5.0 06/13/18 18:25 3.4 U 3.4 mg/L

Lab Sample ID: LCS 400-400948/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 400948

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Dissolved Solids	 293	266		mg/L		91	78 - 122	 

Lab Sample ID: 400-154880-B-3 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 400948

•	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	700		 696		mg/L		 0	5

#### Method: SM 4500 CI- E - Chloride, Total

Lab Sample ID: MB 400-403212/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403212** 

MB MB Result Qualifier PQL Analyte MDL Unit **Prepared** Analyzed Dil Fac Chloride 0.60 U 2.0 0.60 mg/L 07/02/18 08:55

Lab Sample ID: LCS 400-403212/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403212

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chloride 30.0 31.5 mg/L 105 90 - 110

TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: 400-154880-B-4 MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA
Analysis Ratch: 403212	

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	43		10.0	49.8	J3	mg/L		71	73 - 120	

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-403221/3	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Patch, 402224	

Analysis Batch: 403221

MB MB PQL Analyte Result Qualifier MDL Unit Prepared Analyzed Dil Fac 0.10 Fluoride 0.032 U 0.032 mg/L 07/02/18 10:13

Lab Sample ID: LCS 400-403221/4	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 403221	

	Spike	LUS	LUS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride	 4.00	3.94		mg/L		99	90 - 110	

Lab Sample ID: 400-154742-B-4 MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 403221

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride	0.032	U	1 00	1 04		ma/l	_	104	75 - 125	 

Lab Sample ID: 400-154742-B-4 MSD	Client Sample ID: Matrix Spike Duplicate
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 403221

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Fluoride	0.032	U	1.00	1.04		ma/L		104	75 - 125		4

Lab Sample ID: 400-154881-A-7 DU	Client Sample ID: Duplicate
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 403221

Allaryold Batolii 400221									
	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Fluoride	0.19		 0.190		mg/L			0	4

Method: SM 4500 SO4 E - Sulfate, Total

_	
Lab Sample ID: MB 400-403304/6	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 403304

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			07/02/18 14:47	1

TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

#### Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: LCS 400-403304/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 15.0 Sulfate 16.0 mg/L 107 90 - 110

Lab Sample ID: MRL 400-403304/3

Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Spike MRL MRL %Rec. Added Limits Analyte Result Qualifier Unit %Rec Sulfate 5.00 5.56 mg/L 111 50 - 150

Lab Sample ID: 400-154880-B-3 MS

**Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304 Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec

Sulfate 390 300 385 J3 77 - 128 mg/L

Client Sample ID: Matrix Spike Duplicate Lab Sample ID: 400-154880-B-3 MSD Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 403304

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Sulfate 390 300 386 J3 77 - 128 mg/L n

#### Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-370670/23-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Prep Batch: 370670** 

**Analysis Batch: 374837** 

MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ MDC Unit RL Prepared Analyzed Dil Fac

Total

Radium-226 0.03659 U 0.228 0.228 1.00 0.444 pCi/L 06/15/18 16:02 07/11/18 14:24

MB MB Carrier Qualifier Limits

Count

%Yield Prepared Analyzed Dil Fac Ba Carrier 06/15/18 16:02 07/11/18 14:24 104 40 - 110

Lab Sample ID: LCS 160-370670/1-A Client Sample ID: Lab Control Sample

**Matrix: Water** Prep Type: Total/NA **Analysis Batch: 374837** Prep Batch: 370670

Total

LCS LCS %Rec. Spike Uncert. Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits

Radium-226 15.7 17.09 2.12 1.00 0.361 pCi/L 109 68 - 137 LCS LCS

Carrier %Yield Qualifier Limits Ba Carrier 100 40 - 110

TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

TestAmerica Job ID: S

- 3

#### Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-370670/2-A Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 374837** Prep Batch: 370670 Total Spike LCSD LCSD Uncert. %Rec. **RER** Added **Analyte** Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits **RER** Limit Radium-226 15.7 15.22 1.94 1.00 0.380 pCi/L 0.46 LCSD LCSD Carrier %Yield Qualifier I imits Ba Carrier 101 40 - 110

#### Method: 9320 - Radium-228 (GFPC)

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Lab Sample ID: MB 160-370673/23-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA Analysis Batch: 374835 Prep Batch: 370673 Count Total Uncert. Uncert. MB MB Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit Prepared Analyzed Dil Fac Radium-228 06/15/18 17:02 07/11/18 09:46 0.4235 U 0.365 0.367 1.00 0.583 pCi/L MB MB Carrier %Yield Qualifier Limits Prepared Analyzed Dil Fac Ba Carrier 104 40 - 110 06/15/18 17:02 07/11/18 09:46

 Ba Carrier
 104
 40 - 110
 06/15/18 17:02
 07/11/18 09:46
 1

 Y Carrier
 69.2
 40 - 110
 06/15/18 17:02
 07/11/18 09:46
 1

 Lab Sample ID: LCS 160-370673/1-A
 Client Sample ID: Lab Control Sample Matrix: Water

**Analysis Batch: 374836 Prep Batch: 370673** Total Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits Radium-228 10.9 11.13 1.32 1.00 0.497 pCi/L 56 - 140 102

 LCS
 LCS

 Carrier
 %Yield
 Qualifier
 Limits

 Ba Carrier
 100
 40 - 110

 Y Carrier
 85.6
 40 - 110

Lab Sample ID: LCSD 160-370673/2-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 374836

Total Spike LCSD LCSD Uncert. %Rec. **RER** Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits RER Limit Radium-228 10.9 9.499 1.26 1.00 0.645 pCi/L 87 56 - 140 0.63

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	65.0		40 - 110

TestAmerica Pensacola

Prep Batch: 370673

#### **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

#### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-78700-A-6 DU

**Matrix: Water** 

**Analysis Batch: 375258** 

Client	Sample	ID:	<b>Duplicate</b>
	Pren Ty	/ne	· Total/NA

Total Sample Sample DU DU Uncert. RER Limit Result Qual Result Qual  $(2\sigma + / -)$ RL MDC Unit Analyte RER 0.210 U 0.80 0.5506 0.223 5.00 0.307 pCi/L Combined

Radium 226 +

228

2255 Malorator Pensacora	:			Toct A morion
Pensacola, 17.325110 Discourse Anna Englishment	Chain of Custody Record	tody Record		
		Lab PM:	Camer Tracking No(s):	COC No:
Client Codest	20	Whitmire, Cheyenne R		400-74588-29346.2
Kristi Mitchell	250-336-0192	E-waii: cheyenne.whitmire@testamericainc.com		Page: Page of
Company: Guff Power Company		Analysis Re		Job #:
Address: RiN 721 One Energy Disco	Due Date Requested:	_		Preservation Codes:
City	TAT Requested (days):	AOTA (V)		
State	1	Se II.		C - 2n Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
Phone: 850-444-6427(Tel)	Po #: Purchase Order not required	SB_GFF		
Email: krmitche@southernco.com	WO#.	28 492 28 492 28 609 00)		
Project Name:	Project #:	0 1005 1 005 1 005 1 005	\$190	K-EDTA
Stee:	40008609 SSOW#:	(Yes, doilos, dide, dide, dide, di	letnoo	Other:
Ash Pond		350 350 3 20 3 20 CPI		
Sample Identification	Sample Type Sample (C=comp,	Matrix (Warmer of Control of Cont	nedmivN listo	
	X	ation Code: XXN D D		Special Instructions/Note:
Mrs -14	J ZW1 81-7-2	2		
		Water		
		Window		
		Water		
		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month	assessed if samples are refair	ned longer than 1 month)
Skin Irritant	Poison B Unknown TRadiological		Disposal By Lab	Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:		
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
and	6-8-78 (130	SW. Kereved by	Lagener 06/8/18	Georgiany H
Halmanston over the Manual Conference of Refinements of the Acon Angelogy of the Refinement of the Acon Angelogy of the Refinements of the Acon Angelogy of	05:181/8/00 00/8/18	Received Ing.		1350
			Date/Time:	Сотрану
Custody Seals Intact: Custody Seal No.:  A Yes A No		Cooler Temperature(s) °C and Other Remarks:	Remarks:	

**TestAmerica** 

TestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-154221-6 SDG Number: Ash Pond

List Source: TestAmerica Pensacola

Login Number: 154881 List Number: 1

Creator: Perez. Trina M

Creator: Perez, Trina M		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.08C,0.08C,0.08C,0.08C,0.08C R-I
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Cield Sampler's name present on C7 CF	True	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ? Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>N/A</td><td></td></zmm>	N/A	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-154221-6 SDG Number: Ash Pond

Login Number: 154881 List Source: TestAmerica St. Louis
List Number: 2 List Creation: 06/12/18 05:09 PM

Creator: Press, Nicholas B

Creator: Press, Nicholas B		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	12
C7 C is present.	True	
C7 C is filled out in ink and legible.	True	
C7 C is filled out with all pertinent information.	True	
°s the Oeld Sampler's name present on C7 CF	Oalse	
There are no discrepancies between the containers received and the C7 C.	True	
Samples are received within ? olding Time He( cluding tests with immediate ? Tsx	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation ) erified.	True	
There is sufficient vol. for all reVuested analyses, incl. any reVuested q S/q SDs	True	
Containers reVuiring Mero headspace have no headspace or bubble is <zmm 4"x<="" h="" td=""><td>True</td><td></td></zmm>	True	
q ultiphasic samples are not present.	True	
Samples do not reVuire splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Client: Gulf Power Company Project/Site: CCR Smith Plant

#### **Laboratory: TestAmerica Pensacola**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-18
lowa	State Program	7	367	08-01-18 *
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-18 *
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

#### Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-18 *

<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

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#### **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-154881-2
SDG: Ash Pond

#### **Laboratory: TestAmerica St. Louis (Continued)**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18 *
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-18 *
West Virginia DEP	State Program	3	381	10-31-18 *

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-154881-3

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

Revision: 1

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 9/7/2018 10:35:04 AM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

## **Table of Contents**

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Project/Site: CCR Smith Plant

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#### Case Narrative

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-3

SDG: Ash Pond

Job ID: 400-154881-3

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-154881-3

#### **RAD**

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370673: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-13 (400-154881-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370673: Sample aliguots 400-154881-1,2,3,4,5,6,7, and 10 were reduced due to potential matrix interference. Samples were yellow, murky, and had strong odors similar to that of sulfur. Sample aliquots 400154881-8,9,11,12,13,14,15,16,17,18,19, and 20 were reduced due to potential matrix interference. Samples were murky and had strong odors similar to that of sulfur. MW-13 (400-154881-3).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370670: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-13 (400-154881-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370670: Sample aliquots 400-154881-1,2,3,4,5,6,7, and 10 were reduced due to potential matrix interference. Samples were yellow, murky, and had strong odors similar to that of sulfur. Sample aliquots 400154881-8,9,11,12,13,14,15,16,17,18,19, and 20 were reduced due to potential matrix interference. Samples were murky and had strong odors similar to that of sulfur. MW-13 (400-154881-3).

#### Metals

Method(s) 6020: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-154881-3). Elevated reporting limits (RLs) are provided.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-154881-3). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-154881-3). Elevated reporting limits (RLs) are provided.

Report revised to add missing QC.

3

## **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154221-8

Lab Sample ID: 400-154881-3

Field Samplin3

SDG: Ash Pond

## **Client Sample ID: MW-13**

Field pH

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.001L		0.0018	0.0004L	m3/g	5	_	L0v0	Total
									Reco6erable
Barium	0.029		0.00v5	0.00049	m3/g	5		L0v0	Total
									Reco6erable
githium	0.v0		0.0050	0.0011	m3/g	5		L0v0	Total
									Reco6erable
Molybdenum	0.04v		0.015	0.00025	m3/g	5		L0v0	Total
-									Reco6erable
Selenium	0.00081	1	0.0018	0.000v4	m3/g	5		L0v0	Total
			_						Reco6erable
Boron - Dg	15		v.0	0.24	m3/g	v00		L0v0	Total
o. 1									Reco6erable
Calcium - Dg	L70		10	5.0	m3/g	v00		L0v0	Total
Total Discoland Colida	2,400		100	25	m2/a	4		CM vE40C	Reco6erable
Total Dissol6ed Solids	2v00		180		m3/g	1		SM v540C	Total/NA
Chloride	4800		v00	L0	m3/g	100		SM 4500 CI- E	Total/NA
Fluoride	0.050	I	0.10	0.08v	m3/g	1		SM 4500 F C	Total/NA
Sulfate	240		150	4v	m3/g	80		SM 4500 SO4 E	Total/NA

L.2L

SU

Total/NA

## **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDO

G: Ash Pond	
-------------	--

Method Method Description		Protocol	Laboratory
60MD	( etals )ICP/( SL	SW846	TAE PN,
S( M540C	SolidsvTotal DissolFed )TDSL	S(	TAE PN,
S( 4500 CI- N	ChloridevTotal	S(	TAE PN,
S( 4500 O C	Quoride	S(	TAE PN,
S( 4500 S94 N	SulfatevTotal	S(	TAE PN,
3215	Radium-M6)GOPCL	SW846	TAESE
32M0	Radium-MMB )GOPCL	SW846	TAESE
RaMM6_RaMM8	Combined Radium-M/6 and Radium-M/8	TAE-STE	TAESE
Oeld Sampling	Cield Sampling	NPA	TAE PN,
2005A	PreparationvTotal RecoFerable or DissolFed (etals	SW846	TAE PN,
PrecSep_0	PreparationvPrecipitate Separation	, one	TAESE
PrecSep-M1	PreparationvPrecipitate Separation )MI-Day In-GrowthL	, one	TAESE

#### **Protocol References:**

NPA = US NnFironmental Protection Agency

, one = , one

S( = "Standard ( ethods Oor The Nxamination 9 f Water And Wastewater"

SW846 = "Test ( ethods Cor NFaluating Solid WastevPhysical/Chemical ( ethods"vThird Nditionv, oFember 1386 And Its Updates.

TAE-STE = TestAmerica EaboratoriesvSt. EouisvOacility Standard 9 perating Procedure.

#### **Laboratory References:**

TAE PN, = TestAmerica Pensacolav2255 ( cEemore DriFevPensacolavOE 2M514vTNE )850L474-1001 TAE SE = TestAmerica St. Eouisv12715 Rider Trail, orthvNarth Cityv( 9 62045vTNE)214LM88-8566

## **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-154881-2	MW-12	Water	06/07/18 11:33	06/08/18 12:50

2

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Lab Sample ID: 400-154881-2

Matrix: Water

Client Sample ID: MW-12
Date Collected: 06/07/18 11:vv
Date Recei3ed: 06/08/18 12:50

Field pH

Method: 60v0 - Metals (ICP/MS) - Total Reco3erable

Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
0.0016		0.0012	0.00043	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.08G		0.00L5	0.0004B	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.00024	7	0.00L5	0.00024	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.0011	7	0.00L5	0.0011	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.00040	7	0.00L5	0.00040	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.v0		0.0050	0.0011	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.04v		0.015	0.00085	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
0.00021	I .	0.0012	0.000L4	m6/g		03/LL/18 11:58	03/L5/18 LL:09	5
15 670	Qualifier	L.0 10	0.84	m6/g	Б	03/LL/18 11:58 03/LL/18 11:58	03/L5/18 L0:14 03/L5/18 L0:14	L00
670		10	5.0	m6/g		03/LL/18 11:58	03/L5/18 L0:14	L00
Popult	Qualifier	BOI	MDI	Unit	n	Bronorod	Anglyzad	
Result	Qualifier	PUL		Unit	ע	Prepared	Analyzed	Dil Foo
							00/40/40 40 : =	Dil Fac
8v00		120	85	m6/g			03/12/18 18:L5	1
8v00 4200			85	m6/g m6/g			03/12/18 18:L5 09/0L/18 10:43	Dil Fac 1 100
		120	85	m6/g				1
	0.0016 0.08G 0.00024 0.0011 0.00040 0.v0 0.04v 0.00021 (S) - Total Result 15 670	0.08G 0.00024 7 0.0011 7 0.00040 7 0.v0 0.04v 0.00021 I (S) - Total Reco3erable Result Qualifier	0.0016         0.0012           0.08G         0.00L5           0.00024         7         0.00L5           0.0011         7         0.00L5           0.00040         7         0.0050           0.04v         0.015         0.0012           0.00021         I         0.0012           IS) - Total Reco3erable - DL         Result         Qualifier         PQL           15         L.0         670         10	0.0016         0.0012         0.00043           0.08G         0.00L5         0.00048           0.00024         7         0.00L5         0.00024           0.0011         7         0.00L5         0.0011           0.00040         7         0.00L5         0.00040           0.04v         0.015         0.00085           0.00021         0.0012         0.000L4           IS) - Total Reco3erable - DL         Result Qualifier PQL MDL           15         L.0         0.84           670         10         5.0	0.0016         0.0012         0.00043         m6/g           0.08G         0.00L5         0.0004B         m6/g           0.00024         7         0.00L5         0.00024         m6/g           0.0011         7         0.00L5         0.0011         m6/g           0.00040         7         0.00L5         0.00040         m6/g           0.04V         0.015         0.00085         m6/g           0.00021         0.00012         0.000L4         m6/g           IS) - Total Reco3erable - DL         Result Qualifier PQL MDL Unit           15         L.0         0.84 m6/g           670         10         5.0 m6/g	0.0016         0.0012         0.00043         m6/g           0.08G         0.00L5         0.0004B         m6/g           0.00024         7         0.00L5         0.00024         m6/g           0.0011         7         0.00L5         0.0011         m6/g           0.00040         7         0.00L5         0.00040         m6/g           0.04v         0.015         0.00085         m6/g           0.00021         0.00012         0.000L4         m6/g           IS) - Total Reco3erable - DL           Result         Qualifier         PQL         MDL         Unit         D           15         L.0         0.84         m6/g           670         10         5.0         m6/g	0.0016         0.0012         0.00043         m6/g         03/LL/18 11:58           0.08G         0.00L5         0.00048         m6/g         03/LL/18 11:58           0.00024         7         0.00L5         0.00024         m6/g         03/LL/18 11:58           0.0011         7         0.00L5         0.0011         m6/g         03/LL/18 11:58           0.00040         7         0.00L5         0.00040         m6/g         03/LL/18 11:58           0.04V         0.0050         0.0011         m6/g         03/LL/18 11:58           0.00021         1         0.0012         0.00024         m6/g         03/LL/18 11:58           IS) - Total Reco3erable - DL         MDL         Unit         D         Prepared           Result         Qualifier         PQL         MDL         Unit         D         Prepared           670         10         5.0         m6/g         03/LL/18 11:58	0.0016         0.0012         0.00043         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.08G         0.00L5         0.0004B         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.00024         7         0.00L5         0.00024         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.0011         7         0.00L5         0.0011         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.00040         7         0.00L5         0.00040         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.v0         0.0050         0.0011         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.04v         0.015         0.00085         m6/g         03/LL/18 11:58         03/L5/18 LL:09           0.00021         I         0.0012         0.000L4         m6/g         03/LL/18 11:58         03/L5/18 LL:09           IS) - Total Reco3erable - DL         MDL         Unit         D         Prepared         Analyzed           15         L.0         0.84         m6/g         03/LL/18 11:58         03/L5/18 L0:14

Method: G215 - F	Radium-vv6 (	9 FPC)	Count Uncert.	Total Uncert.					
Analyte Radium-vv6	Result 8.G8	Qualifier	(vσ+/-) 1.1L	(vσ+/-) 1.28	<b>RL</b> 1.00	 Unit pCi/g	Prepared 03/15/18 13:0L	Analyzed 09/11/18 1L:LB	Dil Fac
<b>Carrier</b> Ba Carrier	% <b>Yield</b> 6. <b>½</b>	Qualifier	Limits 40 - 110				<b>Prepared</b> 03/12/18 13:09	<b>Analyzed</b> 05/11/18 19:96	Dil Fac

Method: G2v0 - F	Radium-vv8 (	(9 FPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(vσ+/-)	(vσ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-vv8	5.G5		0.913	0.B01	1.00	0.53B	pCi/g	03/15/18 19:0L	09/11/18 0B:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	6. Y2		40 - 110					03/12/18 15:09	05/11/18 06:44	1
7 Carrier	5. Y3		40 - 110					03/12/18 15:09	05/11/18 06:44	1

Dil Fac
1

S7

TestAmerica Pensacola

03/09/18 11:LL

6.86

## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-3

SDG: Ash Pond

#### **Qualifiers**

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

#### **General Chemistry**

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
1	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.
Rad	
Qualifier	Qualifier Description

## **Glossary**

LOQ

MDA

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)

Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) MDC MDL Method Detection Limit MLMinimum Level (Dioxin) NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Result is less than the sample detection limit.

PQL Practical Quantitation Limit

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

Limit of Quantitation (DoD/DOE)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

TestAmerica Pensacola

#### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant

Date v ecei3ed: 56/52/12 14:85

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Lab Sample ID: 055-180221-4 **Client Sample ID: MW-14** Date Collected: 56/57/12 11:RR

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	vun	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	2005A	DL		406128	03/66/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	3060	DL	600	406495	03/65/18 60:14	DRE	TAL PEN
Total Recoverable	Prep	2005A			406128	03/66/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	3060		5	406495	03/65/18 66:0M	DRE	TAL PEN
Total/NA	Analysis	S7 6540C		1	400948	03/12/18 18:65	RRC	TAL PEN
Total/NA	Analysis	S7 4500 CI- E		100	402616	OM06/18 10:43	RRC	TAL PEN
Total/NA	Analysis	S7 4500 F C		1	402661	OM06/18 11:6M	BAB	TAL PEN
Total/NA	Analysis	S7 4500 SO4 E		20	402204	OM06/18 15:60	RRC	TAL PEN
Total/NA	Prep	PrecSep-61			2M03M0	03/15/18 13:06	JLC	TAL SL
Total/NA	Analysis	9215		1	2M482M	0M11/18 16:69	RT7	TAL SL
Total/NA	Prep	PrecSep_0			2M03M2	03/15/18 1M06	JLC	TAL SL
Total/NA	Analysis	9260		1	2M4823	0M11/18 09:44	RT7	TAL SL
Total/NA	Analysis	Ra663_Ra668		1	2M5658	0M16/18 1M52	RT7	TAL SL
Total/NA	Analysis	Field Sampling		1	404426	03/0M18 11:66	CDH	TAL PEN

#### Laboratory v eferences:

TAL PEN = TestAmerica Pensacola, 2255 7 cLemore Drive, Pensacola, FL 26514, TEL (850)4M4-1001 TAL SL = TestAmerica St. Louis, 12M15 Rider Trail North, Earth City, 7 O 32045, TEL (214)698-8533

## **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

**Metals** 

Prep Batch: 402138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total RecoLerable	Water	2005A	
400-154881-2 - DM	3 W-12	Total RecoLerable	Water	2005A	
3 v 400-40B128/1-A ^5	3 ethod v lank	Total RecoLerable	Water	2005A	
MCS 400-40B128/B-A	Mab Control Sample	Total RecoLerable	Water	2005A	
400-154881-v-7-v 3 S ^5	3 atrix Spike	Total RecoLerable	Water	2005A	
400-154881-v-7-C 3 SD ^5	3 atrix Spike Duplicate	Total RecoLerable	Water	2005A	

**Analysis Batch: 402495** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2 - DM	3 W-12	Total RecoLerable	Water	60B0	40B128
400-154881-2	3 W-12	Total RecoLerable	Water	60B0	40B128
3 v 400-40B128/1-A ^5	3 ethod v lank	Total RecoLerable	Water	60B0	40B128
MCS 400-40B128/B-A	Mab Control Sample	Total RecoLerable	Water	60B0	40B128
400-154881-v-7-v 3 S ^5	3 atrix Spike	Total RecoLerable	Water	60B0	40B128
400-154881-v-7-C 3 SD ^5	3 atrix Spike Duplicate	Total RecoLerable	Water	60B0	40B128

**General Chemistry** 

Analysis Batch: 400948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	S3 B540C	
3 v 400-400948/1	3 ethod v lank	Total/NA	Water	S3 B540C	
MCS 400-400948/B	Mab Control Sample	Total/NA	Water	S3 B540C	
400-154880-v-2 DU	Duplicate	Total/NA	Water	S3 B540C	

Analysis Batch: 403212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	S3 4500 CI- E	
3 v 400-402B1B/6	3 ethod v lank	Total/NA	Water	S3 4500 CI- E	
MCS 400-402B1B/7	Mab Control Sample	Total/NA	Water	S3 4500 CI- E	
400-154880-v-4 3 S	3 atrix Spike	Total/NA	Water	S3 4500 CI- E	
400-154880-v-4 3 SD	3 atrix Spike Duplicate	Total/NA	Water	S3 4500 CI- E	

**Analysis Batch: 403221** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	S3 4500 F C	
3 v 400-402BB1/2	3 ethod v lank	Total/NA	Water	S3 4500 F C	
MCS 400-402BB1/4	Mab Control Sample	Total/NA	Water	S3 4500 F C	
400-15474B-v-4 3 S	3 atrix Spike	Total/NA	Water	S3 4500 F C	
400-15474B-v-4 3 SD	3 atrix Spike Duplicate	Total/NA	Water	S3 4500 F C	
400-154881-A-7 DU	Duplicate	Total/NA	Water	S3 4500 F C	

Analysis Batch: 403304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	S3 4500 SO4 E	
3 v 400-402204/6	3 ethod v lank	Total/NA	Water	S3 4500 SO4 E	
MCS 400-402204/7	Mab Control Sample	Total/NA	Water	S3 4500 SO4 E	
3 RM400-402204/2	Mab Control Sample	Total/NA	Water	S3 4500 SO4 E	
400-154880-v -2 3 S	3 atrix Spike	Total/NA	Water	S3 4500 SO4 E	
400-154880-v-2 3 SD	3 atrix Spike Duplicate	Total/NA	Water	S3 4500 SO4 E	

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## **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

### Rad

**Prep Batch: 370670** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	PrecSep-B1	
3 v 160-270670/B2-A	3 ethod v lank	Total/NA	Water	PrecSep-B1	
MCS 160-270670/1-A	Mab Control Sample	Total/NA	Water	PrecSep-B1	
MCSD 160-270670/B-A	Mab Control Sample Dup	Total/NA	Water	PrecSep-B1	

#### **Prep Batch: 370673**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	PrecSep_0	
3 v 160-270672/B2-A	3 ethod v lank	Total/NA	Water	PrecSep_0	
MCS 160-270672/1-A	Mab Control Sample	Total/NA	Water	PrecSep_0	
MCSD 160-270672/B-A	Mab Control Sample Dup	Total/NA	Water	PrecSep_0	

#### Field Service / Mobile Lab

#### **Analysis Batch: 404432**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	3 W-12	Total/NA	Water	Field Sampling	

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-3 SDG: Ash Pond

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-402138/1-A ^5

**Matrix: Water** 

**Analysis Batch: 402495** 

Client Sample ID: Method Blank **Prep Type: Total Recoverable** Prep Batch: 402138

	MB	MR							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/22/18 11:58	06/25/18 18:44	5
Barium	0.00049	U	0.0025	0.00049	mg/L		06/22/18 11:58	06/25/18 18:44	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		06/22/18 11:58	06/25/18 18:44	5
Boron	0.021	U	0.050	0.021	mg/L		06/22/18 11:58	06/25/18 18:44	5
Calcium	0.13	U	0.25	0.13	mg/L		06/22/18 11:58	06/25/18 18:44	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		06/22/18 11:58	06/25/18 18:44	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		06/22/18 11:58	06/25/18 18:44	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/22/18 11:58	06/25/18 18:44	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		06/22/18 11:58	06/25/18 18:44	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		06/22/18 11:58	06/25/18 18:44	5

Lab Sample ID: LCS 400-402138/2-A

**Matrix: Water** 

**Analysis Batch: 402495** 

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

Prep Batch: 402138

LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec Arsenic 0.0500 0.0515 mg/L 103 80 - 120 Barium 0.0500 0.0487 mg/L 97 80 - 120 Beryllium 0.0500 0.0486 97 80 - 120 mg/L 80 - 120 Boron 0.100 0.0977 98 mg/L Calcium 5.00 99 80 - 120 4.94 mg/L 0.0500 100 Chromium 0.0502 mg/L 80 - 120Cobalt 0.0500 0.0506 mg/L 101 80 - 120 Lithium 0.0500 0.0531 mg/L 106 80 - 120 Molybdenum 0.0500 0.0488 mg/L 98 80 - 120 Selenium 0.0500 0.0525 mg/L 105 80 - 120

Lab Sample ID: 400-154881-B-7-B MS ^5

**Matrix: Water** 

**Analysis Batch: 402495** 

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** 

Prep Batch: 402138 Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Arsenic 0.00046 0.0500 0.0534 75 - 125 П mg/L 107 Barium 0.017 0.0500 0.0679 102 75 - 125 mg/L Beryllium 0.00034 U 0.0500 0.0494 99 75 - 125 mg/L Boron 0.027 0.100 0.131 mg/L 104 75 - 125 Calcium 32 5.00 38.0 mg/L 115 75 - 125 Chromium 0.0500 0.0544 103 75 - 125 0.0029 mg/L 0.0500 75 - 125 Cobalt 0.00040 U 0.0528 mg/L 106 Lithium 0.0051 0.0500 0.0518 mg/L 93 75 - 125 Molybdenum 0.00085 U 0.0500 0.0483 mg/L 97 75 - 125 0.0500 75 - 125 Selenium 0.00024 U 0.0519 104 mg/L

Lab Sample ID: 400-154881-B-7-C MSD ^5

**Matrix: Water** 

<b>Analysis</b>	Batch:	402495	

Analysis Baton. 402430	Sample	Sample	Spike	MSD
Analyte	Result	Qualifier	Added	Result
Arsenic	0.00046	U	0.0500	0.0528

MSD	
Qualifier	Un
	mg

nit D %Rec q/L 106

**Prep Type: Total Recoverable** Prep Batch: 402138 %Rec. **RPD** RPD Limits Limit

Client Sample ID: Matrix Spike Duplicate

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TestAmerica Job ID: 400-154881-3 SDG: Ash Pond

Client: Gulf Power Company Project/Site: CCR Smith Plant

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-154881 Matrix: Water	ab Sample ID: 400-154881-B-7-C MSD ^5 latrix: Water								Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable							
Analysis Batch: 402495	Sample	Sample	Spike	MSD	MSD				Prep Ba %Rec.							
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit					
Barium	0.017		0.0500	0.0647		mg/L		95	75 - 125	5	20					
Beryllium	0.00034	U	0.0500	0.0480		mg/L		96	75 - 125	3	20					
Boron	0.027	l	0.100	0.129		mg/L		102	75 - 125	1	20					
Calcium	32		5.00	37.0		mg/L		96	75 - 125	2	20					
Chromium	0.0029		0.0500	0.0542		mg/L		103	75 - 125	0	20					
Cobalt	0.00040	U	0.0500	0.0521		mg/L		104	75 - 125	2	20					
Lithium	0.0051		0.0500	0.0514		mg/L		93	75 - 125	1	20					
Molybdenum	0.00085	U	0.0500	0.0480		mg/L		96	75 - 125	1	20					
Selenium	0.00024	Ü	0.0500	0.0521		mg/L		104	75 - 125	0	20					

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-400948/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 400948

	MB	IVIB						
Analyte	Result	Qualifier	PQL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4 mg/L			06/13/18 18:25	1

Lab Sample ID: LCS 400-400948/2 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 400948** Spike LCS LCS %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits 293 Total Dissolved Solids 266 78 - 122 mg/L 91

Lab Sample ID: 400-154880-B-3 DU

**Matrix: Water** 

Analysis Batch: 400948									
-	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Total Dissolved Solids	700		696		mg/L			0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-403212/6 Client Sample ID: Method Blank **Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 403212

	INIR	INIR

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			07/02/18 08:55	1

Lab Sample ID: LCS 400-403212/7 Client Sample ID: Lab Control Sample **Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 403212

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	30.0	31.5		mg/L		105	90 - 110	

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**Client Sample ID: Duplicate** 

Prep Type: Total/NA

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-3

SDG: Ash Pond

Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: 400-154880-B-4 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403212** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Chloride 10.0 43 49.8 J3 mg/L 73 - 120

Lab Sample ID: 400-154880-B-4 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403212** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits **Analyte** Result Qualifier **RPD** Limit Unit %Rec Chloride 43 10.0 49.5 J3 mg/L 67 73 - 120

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-403221/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403221** 

MB MB Analyte Result Qualifier PQL **MDL** Unit Prepared Analyzed Dil Fac Fluoride 0.032 U 0.10 0.032 mg/L 07/02/18 10:13

Lab Sample ID: LCS 400-403221/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403221** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec Fluoride 4.00 3.94 mg/L 99 90 - 110

Lab Sample ID: 400-154742-B-4 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403221** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Fluoride 0.032 U 1.00 1.04 104 75 - 125 mg/L

Lab Sample ID: 400-154742-B-4 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403221** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Analyte Unit %Rec Limit Fluoride 0.032 U 1.00 1.04 75 - 125 mg/L 104 0

Lab Sample ID: 400-154881-A-7 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 403221** 

Sample Sample DU DU **RPD** Analyte Result Qualifier Result Qualifier Unit D **RPD** Limit Fluoride 0.19 0.190 mg/L

TestAmerica Pensacola

Client: Gulf Power Company TestAmerica Job ID: 400-154881-3 Project/Site: CCR Smith Plant

SDG: Ash Pond

### Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-403304/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

MB MB Analyte Result Qualifier PQL **MDL** Unit Analyzed Dil Fac D Prepared 5.0 07/02/18 14:47 Sulfate 14 II 1.4 mg/L

Lab Sample ID: LCS 400-403304/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Spike LCS LCS %Rec. Added Limits **Analyte** Result Qualifier Unit %Rec Sulfate 15.0 16.0 mg/L 107 90 - 110

Lab Sample ID: MRL 400-403304/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Spike MRL MRL %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Sulfate 5.00 5.56 mg/L 50 - 150

Lab Sample ID: 400-154880-B-3 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

Sulfate

Analysis Batch: 403304

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Sulfate 390 300 385 J3 77 - 128 mg/L

Lab Sample ID: 400-154880-B-3 MSD

390

**Matrix: Water** 

Analysis Batch: 403304 Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit

300

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-370670/23-A **Client Sample ID: Method Blank** Prep Type: Total/NA **Matrix: Water Analysis Batch: 374837** Prep Batch: 370670

386 J3

mg/L

Count Total

MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL **MDC** Unit Prepared Analyzed Dil Fac Radium-226 0.03659 U 0.228 0.228 1.00 0.444 pCi/L 06/15/18 16:02 07/11/18 14:24 MB MB

Carrier **%Yield Qualifier** I imits Prepared Analyzed Dil Fac 40 - 110 Ba Carrier 104 06/15/18 16:02 07/11/18 14:24

Client Sample ID: Matrix Spike Duplicate

77 - 128

Prep Type: Total/NA

Client: Gulf Power Company TestAmerica Job ID: 400-154881-3 Project/Site: CCR Smith Plant SDG: Ash Pond

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

## Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-370670/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 374837** Prep Batch: 370670 Total Spike LCS LCS Uncert. %Rec. **Analyte** Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits Radium-226 15.7 17.09 2.12 1.00 0.361 pCi/L 109 68 - 137 LCS LCS

Carrier %Yield Qualifier Limits Ba Carrier 100 40 - 110

Lab Sample ID: LCSD 160-370670/2-A

**Matrix: Water** 

				Total							
	Spike	LCSD L	LCSD	Uncert.					%Rec.		RER
Analyte	Added	Result C	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	RER	Limit
Radium-226	15.7	15.22		1.94	1.00	0.380	pCi/L	97	68 - 137	0.46	1
Radium-226	15.7	15.22		1.94	1.00	0.380	pCi/L	97	68 - 137	0.46	

LCSD LCSD %Yield Qualifier Carrier Limits Ba Carrier 101 40 - 110

### Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-370673/23-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA **Analysis Batch: 374835** Prep Batch: 370673 Count Total

	MB	MB	Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4235	U	0.365	0.367	1.00	0.583	pCi/L	06/15/18 17:02	07/11/18 09:46	1
	MB	MB								

Carrier **%Yield Qualifier** Limits Prepared Analyzed Dil Fac Ba Carrier 104 06/15/18 17:02 07/11/18 09:46 40 - 110 Y Carrier 69.2 40 - 110 06/15/18 17:02 07/11/18 09:46

Lab Sample ID: LCS 160-370673/1-A

Ma

An

Chefit Sample ID. Lab Control Sample
Prep Type: Total/NA
Prep Batch: 370673

			Total					
	Spike	LCS LCS	Uncert.				%Rec.	
Analyte	Added	Result Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	
Radium-228	10.9	11.13	1.32	1.00	0.497 pCi/L	102	56 - 140	

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	85.6		40 - 110

TestAmerica Pensacola

## **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-3

SDG: Ash Pond

## Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-370673/2-A

**Matrix: Water** 

**Analysis Batch: 374836** 

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** 

**Prep Batch: 370673** 

				iotai						
	Spike	LCSD	LCSD	Uncert.				%Rec.		RER
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	RER	Limit
Radium-228	10.9	9.499		1.26	1.00	0.645 pCi/L	87	56 - 140	0.63	1
		Analyte Added	Analyte Added Result	Analyte Added Result Qual	Spike         LCSD         LCSD         Uncert.           Analyte         Added         Result         Qual         (2σ+/-)	Analyte Added Result Qual (2σ+/-) RL	Spike LCSD LCSD Uncert.  Analyte Added Result Qual (2σ+/-) RL MDC Unit	Spike LCSD LCSD Uncert.  Analyte Added Result Qual (2σ+/-) RL MDC Unit %Rec	Spike LCSD LCSD Uncert. %Rec. Analyte Added Result Qual (2σ+/-) RL MDC Unit %Rec Limits	Spike LCSD LCSD Uncert. %Rec. Analyte Added Result Qual (2σ+/-) RL MDC Unit %Rec Limits RER

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	65.0		40 - 110

	lescamenca rensacola						TOLLA	
	3355 McLemore Drive	Chain of Custody Record	tody Rec	ord			T SU	ESIATHETICO
		- 1					W110 SERVER 11 10	85,990,8074 - 17,561
	Client Information	Sampler Sampler	Lab PM: Whitmire,	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s)	lo(s):	COC No: 400-74588-29346.2	
	Client Contact: Kristi Mitchell		E-Mail: cheyenne,	E-Mail: cheyenne.whitmire@testamericainc.com	Ę		Page:	
	Company. Gulf Power Company			Analysis	s Requested		Job #	
	Address: BIN 731 One Energy Place	Due Date Requested:					10	:01
	City: Pensacola	TAT Requested (days):			W V O		A - HCt. B - NgOH	M - Hexane N - None
	Slate, Zip: FL, 32520			Dd.		_		C - ASNAO2 P - Na2O4S G - Na2SO3
	Phone: 850-444-6427(Tel)	Po #: Purchase Order not required		S 8				R - Na2S2O3 S - HZSO4
	Email: krmitche@southemco.com	WO#:	fol	SeB93			H - Astronbic Acid I - Ice J - Di Water	T - TSP Dodecahydrate U - Acetone V - MCAA
	Project Name: CCR Smith Plant	Project #:	4 20 =	0500 188'S	_	e 16 nie	K-EDTA L-EDA	W - pH 4-5 Z - other (specify)
	Sile: Ash Pond	SSOW#:	aVI OS	hiorida, solida, solida, 6		f cont	Other:	
			Matrix (virushe, orsold,	Dissolved 5 Dissolved 5 EB - AD - EB - I GV		o TedmirM		
	Sample identification	Sample Date Time G=grab)	ST-There, A-Att	SAME TOUR MONE 9315.	25	IntoT		Special Instructions/Note:
_		Preserv	ation Code:					V
)	Mw.13	4 2211 81-6	Water	XXXX	7	2		
_ 4			Water					
0 -6			Water					
00			Water					
						125		
							2.1	
						742		
	Possible Hazard Identification  Non-Hazard	Poison B Unknown Radiological		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	ay be assessed if sam	Imples are retail	tained longer than 1	month)
	Other (specify)			Special Instructions/QC Requirements:	uirements:		inve ro	Months
	Empty Kit Relinquished by:	Date:	Time;	iò	Method of Shipment:	Shipment		
	Reinquished by: fmy ffff	Date/fine:	Company CLOH EM.	Received by:	asindonky	Date/Time:	1 8	Company
0/7/	Reinguished by Hadywoov Rev	Date: 1/8 (50	Smoon	Received by:		Date/Time:	1350	Company Den
204			Company	vaceivez dy.		Date/Time:		Сотралу
0 /5	Custody Seals Intact: Custody Seal No.:  Δ Yes Δ No			Cooler Temperature(s) °C and Other Remarks:	Öther Remarks:			
2								SINCE NO CANADA

**TestAmerica** 

lestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-154881-3 SDG Number: Ash Pond

List Source: TestAmerica Pensacola

Login Number: 154881 List Number: 1

Creator: Perez, Trina M

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 0.0°C, 0.0°C, 0.0°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Gulf Power Company

Job Number: 400-154881-3 SDG Number: Ash Pond

Login Number: 154881 List Source: TestAmerica St. Louis
List Number: 2 List Creation: 06/12/18 05:09 PM

Creator: Press, Nicholas B

oreator. I ress, Micholas B		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

N/A

Residual Chlorine Checked.

TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Client: Gulf Power Company Project/Site: CCR Smith Plant

#### Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	State Program	4	40150	06-20-13
ANA9	ISB/IOC 1E075		L74E1	07-77-70
Arizona	State Program	3	AZ0E10	01-17-13
Arkansas DOQ	State Program	6	88-0683	03-01-18 F
California	State Program	3	7510	06-20-13
( lorida	NOLAP	4	O81010	06-20-13
Georgia	State Program	4	O81010 )( L*	06-20-13
Illinois	NOLAP	5	700041	10-03-18
lowa	State Program	E	26E	08-01-18 F
Kansas	NOLAP	Ë	O-10752	10-21-18
Kentucky )UST*	State Program	4	52	06-20-13
Kentucky )WW*	State Program	4	38020	17-21-18
Louisiana	NOLAP	6	203E6	06-20-13
Louisiana )DW*	NOLAP	6	LA1E0005	17-21-18
Maryland	State Program	2	722	03-20-13
Massachusetts	State Program	1	M-( L034	06-20-13
Michigan	State Program	5	3317	06-20-13
New Jersey	NOLAP	7	(L006	06-20-13
North Carolina )WW/SW*	State Program	4	214	17-21-18
Bklahoma	State Program	6	3810	08-21-13
Pennsylvania	NOLAP	2	68-0046E	01-21-13
Rhode Island	State Program	1	LAB0020E	17-20-18
South Carolina	State Program	4	36076	06-20-18 F
Tennessee	State Program	4	TN0730E	06-20-13
Texas	NOLAP	6	T104E04786-18-14	03-20-18
US ( ish & Wildlife	( ederal		LO058448-0	0E-21-13
USDA	( ederal		P220-18-00148	05-1E-71
Virginia	NOLAP	2	460166	06-14-13
Washington	State Program	10	C315	05-15-13
West Virginia DOP	State Program	2	126	06-20-13

#### Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MB 00054	06-20-13
ANA9	DoD OLAP		L7205	04-06-13
Arizona	State Program	3	AZ0812	17-08-18
California	State Program	3	7886	06-20-13
Connecticut	State Program	1	PH-0741	02-21-13
( lorida	NOLAP	4	O8E683	06-20-13
Illinois	NOLAP	5	700072	11-20-18
Iowa	State Program	E	2E2	17-01-18
Kansas	NOLAP	E	O-10726	10-21-18
Kentucky )DW*	State Program	4	30175	17-21-18
Louisiana	NOLAP	6	04080	06-20-13
Louisiana )DW*	NOLAP	6	LA18001E	17-21-18
Maryland	State Program	2	210	03-20-13
Michigan	State Program	5	3005	06-20-18 F
Missouri	State Program	Е	E80	06-20-18 F

FAccreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

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## **Accreditation/Certification Summary**

Client: Gulf Power Company

Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

## **Laboratory: TestAmerica St. Louis (Continued)**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
Nevada	State Program	3	MB 000547018-1	0E-21-13
New Jersey	NOLAP	7	MB 007	06-20-13
New York	NOLAP	7	11616	02-21-13
North Dakota	State Program	8	R70E	06-20-13
NRC	NRC		74-7481E-01	17-21-77
Bklahoma	State Program	6	333E	08-21-13
Pennsylvania	NOLAP	2	68-00540	07-78-13
South Carolina	State Program	4	85007001	06-20-13
Texas	NOLAP	6	T104E04132-18-17	0E-21-13
US ( ish & Wildlife	( ederal		058448	0E-21-13
USDA	( ederal		P220-1E-0078	07-07-70
Utah	NOLAP	8	MB 000547016-8	0E-21-18 F
Virginia	NOLAP	2	460720	06-14-13
Washington	State Program	10	C537	08-20-18 F
West Virginia DOP	State Program	2	281	10-21-18 F

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## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-154881-5

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 7/16/2018 5:56:35 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

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**Have a Question?** 



Visit us at: www.testamericainc.com The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Gulf Power Company Project/Site: CCR Smith Plant

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#### Case Narrative

Client: Gulf Power Company Pro2ectj/ ite: CCS / mitRPlant TestAmerica Job ID: 400-154881-5

/ DG: AsR Ponh

Job ID: 400-154881-5

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-154881-5

#### **RAD**

d etRohM( Prec/ ep) 0: Sahium 8 Prep BatcR160-370673: Insufficient sample volume was available to perform a sample huplicate MDUP( for tRe following samples: d W-11 M400-154881-5(. A laboratory control sample) laboratory control sample huplicate MLC/ jLC/ D( were prepareh insteah to hemonstrate batcR precision.

d etRohM( Prec/ep) 0: Sahium 8 Prep BatcR160-370673: / ample aliquots 400-154881-1, ,3,4,5,6,7, anh 10 were rehuceh hue to potential matrix interference. / amples were yellow, murky, anh Rah strong ohors similar to tRat of sulfur. / ample aliquots 400154881-8,9,11,1 ,13,14,15,16,17,18,19, anh 0 were rehuceh hue to potential matrix interference. / amples were murky anh Rah strong ohors similar to tRat of sulfur. d W-11 M400-154881-5(.

d etRohM( Prec/ ep- 1: Sahium 6 Prep BatcR 160-370670; Insufficient sample volume was available to perform a sample huplicate MDUP( for tRe following samples: d W-11 M400-154881-5(. A laboratory control sample) laboratory control sample huplicate MLC/ jLC/ D( were prepareh insteah to hemonstrate batcRprecision.

d etRohM( Prec/ ep- 1: Sahium 6 Prep BatcR 160-370670: / ample aliquots 400-154881-1, ,3,4,5,6,7, anh 10 were rehuceh hue to potential matrix interference. / amples were yellow, murky, anh Rah strong ohors similar to tRat of sulfur. / ample aliquots 400154881-8,9,11,1 ,13,14,15,16,17,18,19, anh 0 were rehuceh hue to potential matrix interference. / amples were murky anh Rah strong ohors similar to tRat of sulfur. d W-11 M00-154881-5(.

#### Metals

d etRohM( 60 0: TRe following sample was hilluten to bring tRe concentration of target analytes witRin tRe calibration range: d W-11 M400-154881-5(. Elevateh reporting limits N\$Ls( are proviheh.

#### **General Chemistry**

d etRohM( / d 4500 CI- E: TRe following sample was hiluteh to bring tRe concentration of target analytes witRin tRe calibration range: d W-11 M400-154881-5(. Elevateh reporting limits MSLs( are proviheh.

d etRohM( / d 4500 / O4 E: TRe following sample was hilluten to bring tRe concentration of target analytes witRin tRe calibration range: d W-11 M400-154881-5(. Elevateh reporting limits MSLs( are proviheh.

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## **Detection Summary**

8 Celt: n COf oPer 8 omwal p f rodectjy ite: 88/ y mitSf @I t TestAmerica Job ID: 400-154221-5

Lab Sample ID: 400-154881-5

y Dn: AsSf ol h

## Client Sample ID: MW-11

Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac D	Method	Prep Type
Arsel ic	0R012	0R001.	0 <b>R</b> 0004L	m3jg	5	L0v0	TotaC
							/ eco6erab@
BariGm	OR9M2	0₹00∨5	0R00049	m3jg	5	L0v0	TotaC
D 600	0577000	0500 5	057000 4	0.	_	100	/ eco6erab@
Berp@Gm	0R0009v I	0 <b>₹</b> 00∨5	0R000.4	m3jg	5	L0v0	TotaC
Dovol		0000	0.004			1.0.0	/ eco6erab@
Borol	. FR/I	0F\$0	UNI	m3jg	50	L0v0	TotaC
8 a <b>©</b> iGm	100	0 <b>₽</b> ⁄5	∩ E4	m3jg	5	L0v0	/ eco6erab@ TotaC
o a <b>o</b> idii	100	0143	OIV.	mojg	3	LOVO	/ eco6erab@
8 SromiGm	0R0042	0R00v5	0R0011	m3ia	5	L0v0	TotaC
				,3			/ eco6erab@
gitSiGm	0R00.2 I	0R0050	0R0011	m3jg	5	L0v0	TotaC
-							/ eco6erab@
7 oφbhel Gm	OR∂1. I	0R015	0 <b>₹</b> 00025	m3jg	5	L0v0	TotaC
							/ eco6erab@
ye@cliGm	OROOOLO I	O <b>R</b> 001.	0R000v4	m3jg	5	L0v0	TotaC
				<u></u>		<u></u>	/ eco6erab@
Tota@isso <b>6</b> eh yo <b>0</b> hs	. 400	50	. 4	m3jg	1	y7 v5408	Tota@NA
8 S@rihe	v000	1v0	. L	m3jg	L0	y7 45008GE	Tota⊈NA
y G0ate	v40	150	4v	m3jg	. 0	y7 4500 yF4 E	Tota
CieCowH	LR9			уU	1	Oeth yamw@3	Tota@NA

7/16/2018

TSis Detectiol y Gmmarp hoes I ot il c@ne rahiocSemica@est res@sR

## **Method Summary**

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TestAmerica Job ID: 400-154881-5 y Dn : AsS f ol h

sSf ol h

Method	Method Description	Protocol	Laboratory
VØ60	Meta® (I2f jMy)	y R 84W	TAL f EN
y M 65402	yo@ns, Tota@isso@eh (TDy)	y M	TAL f EN
y M 4500 2 G E	2 Sorihe, TotaC	y M	TAL f EN
y M 4500 F 2	FCorihe	уM	TAL f EN
y M 4500 y O4 E	y G0ate, TotaC	y M	TAL f EN
9315	/ ahiGm-66W(n Ff 2)	y R 84W	TAL y L
9360	/ ahiGm-668 (n Ff 2)	y R 84W	TAL y L
/ a66W <u>/</u> / a668	2 ombil eh / ahiGm-66Wal h / ahiGm-668	TAL-y TL	TAL y L
Fieth y amw 0 g	Fieth y amw g	Ef A	TAL f EN
3005A	f rewaratiol , TotaC ecoverab@ or Disso@eh Meta@	y R 84W	TAL f EN
f recy ew_0	f rewaratiol, f reciwitate y ewaratiol	Nol e	TAL y L
f recy ew-61	f rewaratiol , f reciwitate y ewaratiol (61-Dap II -n roPtS)	Nol e	TAL y L

#### **Protocol References:**

Ef A = Uy El virol mel taOf rotectiol Agel cp

Nol e = Nol e

y M = "y tal harh MetSohs For TSe Examil atiol OuR ater Al h R astePater"

y R 84W= "Test MetSohs For Eva@atil g y o@n R aste, f Spsica@2 Semica@MetSohs", TSirh Ehitiol, November 198WAI h Its Uwhates.

TAL-yTL = TestAmerica Laboratories, yt. LoGs, Faci@pytal harh Oweratil gf roceh@re.

#### **Laboratory References:**

TAL f EN = TestAmerica f el saco@, 3355 McLemore Drive, f el saco@, FL 36514, TEL (850)474-1001 TAL y L = TestAmerica y t. LoGs, 13715 / iher TraiCNortS, EartS 2 itp, MO W8045, TEL (314)698-85VWV

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7/16/2018

## **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-5

SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-154881-5	MW-11	Water	06/07/18 08:45	06/08/18 13:50

2

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-5 SDG: Ash Pond

ID 400 454004 5

Client Sample ID: 2 M-11
Date Cxlleotec: 0d0/ 618 08:45
Date Reoei7ec: 0d08618 1v:50

Lab Sample ID: 400-154881-5

2 atWr: MateW

Analyte	Result	QualifieW	PQL	2 DL	Unit	D	PW/paW/c	Analyzec	Dil Fao
AWsenio	0.018		0.0013	0.00046	mg/L		06/22/18 11:58	06/25/18 22:16	5
BaWum	0.0/8		0.0025	0.00049	mg/L		06/22/18 11:58	06/25/18 22:16	5
BeWillium	0.000 <b>G</b> h	I	0.0025	0.00034	mg/L		06/22/18 11:58	06/25/18 22:16	5
BxWn	v./		0.50	0.21	mg/L		06/22/18 11:58	06/25/18 20:23	50
Caloium	100		0.25	0.13	mg/L		06/22/18 11:58	06/25/18 22:16	5
C3Wmium	0.0048		0.0025	0.0011	mg/L		06/22/18 11:58	06/25/18 22:16	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		06/22/18 11:58	06/25/18 22:16	5
Lit3ium	0.00v8	I	0.0050	0.0011	mg/L		06/22/18 11:58	06/25/18 22:16	5
2 xlybcenum	0.01v	L	0.015	0.00085	mg/L		06/22/18 11:58	06/25/18 22:16	5
Selenium	0.000d0	I	0.0013	0.00024	mg/L		06/22/18 11:58	06/25/18 22:16	5
9 eneWII C3emistW									
Analyte	Result	QualifieW	PQL	2 DL	Unit	D	P <b>W</b> epa <b>W</b> ec	Analyzec	Dil Fao
Txtal Dissxl7ec Sxlics	v400		50	34	mg/L			06/13/18 12:30	1
C3lxWce	h000		120	36	mg/L			07/02/18 09:43	60
Fluoride	0.032	U	0.10	0.032	mg/L			07/02/18 17:18	1
Sulfate	h40		150	42	mg/L			07/02/18 15:20	30

2 et3xc: Gv15 - Ra	acium-hhd (	9 FPC)								
			Cxunt UnoeW/	Txtal UnoeW/						
Analyte	Result	QualifieW	(hσ+6)	(hσ+6)	RL	2 DC	Unit	PWepaWec	Analyzec	Dil Fao
Racium-hhd	1/ .4		1.50	2.17	1.00	0.402	pCi/L	06/15/18 16:02	07/11/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/15/18 16:02	07/11/18 12:29	1

2 et3xc: Gvh0 - Ra	cium-hh8 (	9 FPC)	•							
			Cxunt UnoeW.	Txtal UnoeW/						
Analyte	Result	QualifieW	(hσ+6)	(hσ+6)	RL	2 DC	Unit	PWepaWec	Analyzec	Dil Fao
Racium-hh8	d.h0		0.732	0.928	1.00	0.666	pCi/L	06/15/18 17:02	07/11/18 09:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/15/18 17:02	07/11/18 09:44	1
Y Carrier	75.1		40 - 110					06/15/18 17:02	07/11/18 09:44	1

2 et3xc: Rahhd_Ra	2 et3xc: Rahhd_Rahh8 - Cxmbinec Racium-hhd anc Racium-hh8											
			Cxunt	Txtal								
			UnoeW.	UnoeW.								
Analyte	Result	QualifieW	(hσ+6)	(hσ+6)	RL	2 DC	Unit	P <b>W</b> ∮pa <b>W</b> ∮c	Analyzec	Dil Fao		
Cxmbinec Racium	hv.d		1.67	2.36	5.00	0.666	pCi/L		07/12/18 17:53	1		
hhd + hh8												

2 et3xc: Fielc Sampling - Field	Sampling							
Analyte	Result QualifieW	PQL	2 DL	Unit	D	PWepaWec	Analyzec	Dil Fao
Fielc pH	d.vG			SU			06/07/18 08:45	1

## **Definitions/Glossary**

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TestAmerica Job ID: 400-154881-5

y Dn: AsSf ol h

#### **Qualifiers**

#### **Metals**

Qual	lifier	Qualifier Description
I		TSe reworteh RaCe is betPeel tSe @boratorp metSoh hetectiol @mit al h tSe @boratorp wracticaCUCal titatiol @mitz
		Il hicates tSat tSe comwoG h Pas al a@veh wr bQ l ot hetectehz

#### **General Chemistry**

Qualifier	Qualifier Description
Jq	Estimateh Pacce; Pacce map I ot be accGratez y wike recoPerp or / f D octsihe oucriteriaz
	Il hicates tSat tSe comwoG h Pas al a@veh wr b@t l ot hetectehz
1	TSe reworteh Parce is betPeel tSe aboratorp metSoh hetectiol amit al h tSe aboratorp wractica CUGal titatiol amitz
Rad	
Qualifier	Qualifier Description
	/ es@tis @ss tSal tSe samw@ hetectiol @mitz

## Glossary

N3

ND

Q3 / E/

/ L

/ f D TEF

**TEQ** 

f QL

Not 3 a CGateh

QGa@tp3oltroC

f racticaQQal titatiol Limit

/ e@tiRe Error / atio (/ ahiocSemistrp)

Toxicitp EUGRa@I t Factor (Dioxil )

Toxicitp EUGRa@I t QGotiel t (Dioxil )

Not Detecteh at tSe rewortil g @mit (or MDL or EDL iusSoPI )

/ eatiRe f ercel t Diwerel ce, a measGre outSe reatiRe hiwerel ce betPeel tPo woil ts

/ ewortil g Limit or / eU@esteh Limit (/ ahiocSemistrp)

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listeh G her tSe "D" co@ml to hesigl ate tSat tSe res@tis reworteh ol a hrp PeigSt basis
%/	f ercel t / ecoRerp
3FL	3 ol tail s Free LiUGh
3 NF	3 ol tail s No Free LiUGh
DE/	DGwcate Error / atio (I orma@eh absocte hiuerel ce)
DiŒac	Di <b>C</b> tiol Factor
DL	Detectiol Limit (DoDjDOE)
DL, / A, / E, IN	Il hicates a Dictiol , / e-al acsis, / e-extractiol , or ahhitiol acll itiacmetacsjal iol al acsis out se samwe
DL3	Decisiol LeReC3 ol cel tratiol (/ ahiocSemistrp)
EDL	Estimateh Detectiol Limit (Dioxil )
LOD	Limit ouDetectiol (DoDjDOE)
LOQ	Limit ouQ@al titatiol (DoDjDOE)
MDA	Mil imGm Detectab@ ActiRtp (/ ahiocSemistrp)
MD3	Mil im@m Detectab@ 3 ol cel tratiol (/ ahiocSemistrp)
MDL	MetSoh Detectiol Limit
ML	Mil imGm LeReQDioxil )

#### **Lab Chronicle**

Client: Gulf Power Company Pro2ectj/ ite: CCS / mitRPlant TestAmerica Job ID: 400-154881-5

/ DG: AsR Ponh

Lab Sample ID: 400-154881-5 Client Sample ID: MW-11

**Matrix: Water** 

Date Collected: 06/07/18 08:45 Date Received: 06/08/18 13:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Secoverable	Prep	d005A			4061d8	03j66j18 11:58	DSE	TAL PEN
Total Secoverable	Analysis	3060		50	406495	03j65j18 60:6d	DSE	TAL PEN
Total Secoverable	Prep	d005A			4061d8	03j66j18 11:58	DSE	TAL PEN
Total Secoverable	Analysis	3060		5	406495	03j65j18 66:13	DSE	TAL PEN
TotaljNA	Analysis	/ M 6540C		1	400955	03j1dj18 16:d0	SSC	TAL PEN
TotaljNA	Analysis	/ M 4500 CI- E		30	40d616	07j06j18 09:4d	SSC	TAL PEN
TotaljNA	Analysis	/ M 4500 F C		1	40d694	07j06j18 17:18	BAB	TAL PEN
TotaljNA	Analysis	/ M 4500 / O4 E		d0	40dd04	07j06j18 15:60	SSC	TAL PEN
TotaljNA	Prep	Prec/ ep-61			d70370	03j15j18 13:06	JLC	TAL / L
TotaljNA	Analysis	9d15		1	d748d7	07j11j18 16:69	STM	TAL / L
TotaljNA	Prep	Prec/ ep_0			d7037d	03j15j18 17:06	JLC	TAL / L
TotaljNA	Analysis	9d60		1	d748d3	07j11j18 09:44	STM	TAL / L
TotaljNA	Analysis	Sa663_Sa668		1	d75658	07j16j18 17:5d	STM	TAL / L
TotaljNA	Analysis	Fielh / ampling		1	4044d6	03j07j18 08:45	CDH	TAL PEN

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, dd55 McLemore Drive, Pensacola, FL d6514, TEL (850)474-1001  $TAL\ /\ L = TestAmerica\ /\ t.\ Louis,\ 1d715\ Siher\ Trail\ NortR,\ EartR\ City,\ MO\ 3d045,\ TEL\ (d14)698-8533$ 

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TestAmerica Job ID: 400-154881-5 y Dn: AsS f ol h

**Metals** 

Prep Batch: 402138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	TotaO ecoLerab@	Rater	W005A	
3 M 400-40v 1W8j 1-A B5	3 etSoh Mal ^	TotaO ecoLerab@	R ater	V005A	
k2y 400-40v1W8jv-A	kab 2 ol troOy amw@	TotaO ecoLerab@	R ater	V005A	
400-154881-M-7-M3 y B5	3 atrix y wi^e	TotaO ecoLerab@	R ater	V005A	
400-154881-M-7-2 3 y D B5	3 atrix y wi^e DGwcate	TotaO ecoLerab@	R ater	<b>W</b> 005A	

**Analysis Batch: 402495** 

Lab Sample ID	-154881-5 3 R -11 -154881-5 3 R -11 400-40v1W8j1-A B5 3 etSoh Mal ^	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	TotaC ecoLerab@	Rater	60v0	40v1V8
400-154881-5	3 R -11	TotaC ecoLerab@	R ater	60v0	40v1W8
3 M400-40v1W8j1-A B5	3 etSoh Mal ^	TotaC ecoLerab@	R ater	60v0	40v1V8
k2 y 400-40v1V8jv-A	kab 2 ol troCy amw@	TotaC ecoLerab@	R ater	60v0	40v1V8
400-154881-M-7-M3 y B5	3 atrix y wi^e	TotaC ecoLerab@	R ater	60v0	40v1V8
400-154881-M-7-2 3 y D B5	3 atrix y wi^e DGwtcate	TotaC ecoLerab@	R ater	60v0	40v1V8

**General Chemistry** 

Analysis Batch: 400955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota	Rater	y3 v5402	<del></del>
3 M400-400955j1	3 etSoh M@l ^	Tota	R ater	y 3 v 5402	
k2 y 400-400955jv	kab 2 ol troCy amw@	Tota	R ater	y 3 v 5402	
400-154761-A-v9 DU	DGwicate	Tota	R ater	y 3 v 5402	

**Analysis Batch: 403212** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota	R ater	y3 4500 2 G E	
3 M400-40W1vj6	3 etSoh Mal ^	Tota	R ater	y3 4500 2 G E	
k2 y 400-40W1vj7	kab 2 ol troOy amw@	Tota⊈NA	R ater	y3 4500 2 G E	
3 / k 400-40W1vjW	kab 2 ol troCy amw@	Tota	R ater	y3 4500 2 G E	
400-154880-M-4 3 y	3 atrix y wi^e	Tota⊈NA	R ater	y3 4500 2 G E	
400-154880-M-4 3 y D	3 atrix y wi^e DGwtcate	Tota⊈NA	R ater	y3 4500 2GE	

**Analysis Batch: 403294** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota	R ater	y3 4500 F 2	
3 M400-40₩94jW	3 etSoh M@l ^	Tota	R ater	y3 4500 F 2	
k2 y 400-40W94j4	kab 2 ol troOy amw@	Tota	R ater	y 3 4500 F 2	
400-154881-A-4 3 y	3 atrix y wi^e	Tota	R ater	y3 4500 F 2	
400-154881-A-4 3 y D	3 atrix y wi^e DGwtcate	Tota	R ater	y3 4500 F 2	
400-154881-A-19 DU	DGwtcate DGwtcate	Tota∯NA	R ater	y3 4500 F 2	

**Analysis Batch: 403304** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota	R ater	y 3 4500 y O4 E	
3 M400-40V <b>W</b> 04j6	3 etSoh M@l ^	Tota	R ater	y 3 4500 y O4 E	
k2 y 400-40 <b>\\0</b> 4j7	kab 2 ol troCy amw@	Tota⊈NA	R ater	y 3 4500 y O4 E	
3 / k 400-40V <b>W</b> 04jW	kab 2 ol troCy amw@	Tota	R ater	y 3 4500 y O4 E	
400-154880-M-W3 y	3 atrix y wi^e	Tota⊈NA	R ater	y 3 4500 y O4 E	
400-154880-M-W3 y D	3 atrix y wi^e DGwtcate	Tota	R ater	y 3 4500 y O4 E	

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## **QC Association Summary**

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### Rad

**Prep Batch: 370670** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota	Rater	f recy ew-v1	
3 M160-₩ <b>7</b> 0670jv₩A	3 etSoh Mal ^	Tota∯NA	R ater	f recy ew-v1	
k2 y 160-W <b>7</b> 0670j1-A	kab 2 ol troCy amw@	Tota∯NA	R ater	f recy ew-v1	
k2 y D 160-W <b>7</b> 0670jv-A	kab 2 ol troCy amw@ DGw	Tota <b>Ģ</b> NA	R ater	f recy ew-v1	

#### **Prep Batch: 370673**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota	Rater	f recy ew_0	
3 M 160-V <b>7</b> 067Vÿ√V√A	3 etSoh M@l ^	Tota	R ater	f recy ew_0	
k2y 160-W <b>7</b> 067W)1-A	kab 2 ol troOy amw@	Tota	R ater	f recy ew_0	
k2 y D 160-W <b>7</b> 067W/v-A	kab 2 ol troCy amw@ DGw	TotaΦNA	R ater	f recy ew_0	

### Field Service / Mobile Lab

#### **Analysis Batch: 404432**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-5	3 R -11	Tota@NA	R ater	Fieth y amw g	

TestAmerica Job ID: 400-154881-5

SDG: Ash Pond

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-402138/1-A ^5

**Matrix: Water** 

**Analysis Batch: 402495** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Client Sample ID: Method Blank **Prep Type: Total Recoverable Prep Batch: 402138** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/22/18 11:58	06/25/18 18:44	5
Barium	0.00049	U	0.0025	0.00049	mg/L		06/22/18 11:58	06/25/18 18:44	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		06/22/18 11:58	06/25/18 18:44	5
Boron	0.021	U	0.050	0.021	mg/L		06/22/18 11:58	06/25/18 18:44	5
Calcium	0.13	U	0.25	0.13	mg/L		06/22/18 11:58	06/25/18 18:44	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		06/22/18 11:58	06/25/18 18:44	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		06/22/18 11:58	06/25/18 18:44	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/22/18 11:58	06/25/18 18:44	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		06/22/18 11:58	06/25/18 18:44	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		06/22/18 11:58	06/25/18 18:44	5

Lab Sample ID: LCS 400-402138/2-A **Client Sample ID: Lab Control Sample Matrix: Water** 

**Analysis Batch: 402495** 

**Prep Type: Total Recoverable Prep Batch: 402138** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit Limits %Rec Arsenic 0.0500 0.0515 mg/L 103 80 - 120 Barium 0.0500 0.0487 mg/L 97 80 - 120 Beryllium 0.0500 0.0486 97 80 - 120 mg/L Boron 80 - 120 0.100 0.0977 98 mg/L Calcium 5.00 mg/L 99 80 - 120 4.94 Chromium 0.0500 100 0.0502 mg/L 80 - 120Cobalt 0.0500 0.0506 mg/L 101 80 - 120 Lithium 0.0500 0.0531 mg/L 106 80 - 120 Molybdenum 0.0500 0.0488 mg/L 98 80 - 120 Selenium 0.0500 0.0525 mg/L 105 80 - 120

Lab Sample ID: 400-154881-B-7-B MS ^5 Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total Recoverable** 

**Analysis Batch: 402495** 

Prep Batch: 402138 Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Arsenic 0.00046 0.0500 0.0534 75 - 125 П mg/L 107 Barium 0.017 0.0500 0.0679 mg/L 102 75 - 125 Beryllium 0.00034 U 0.0500 0.0494 mg/L 99 75 - 125 Boron 0.027 I 0.100 0.131 mg/L 104 75 - 125 Calcium 32 5.00 38.0 mg/L 115 75 - 125 Chromium 0.0500 0.0544 103 75 - 125 0.0029 mg/L 0.0500 75 - 125 Cobalt 0.00040 U 0.0528 mg/L 106 Lithium 0.0051 0.0500 0.0518 mg/L 93 75 - 125 Molybdenum 0.00085 U 0.0500 0.0483 mg/L 97 75 - 125 0.0500 75 - 125 Selenium 0.00024 U 0.0519 104

Lab Sample ID: 400-154881-B-7-C MSD ^5 **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total Recoverable** 

mg/L

Analysis Batch: 402495									Prep Ba	atch: 40	2138
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.00046	U	0.0500	0.0528		mg/L		106	75 - 125	1	20

TestAmerica Pensacola

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-5 SDG: Ash Pond

## Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-154881 Matrix: Water	Sample ID: 400-154881-B-7-C MSD ^5 rix: Water						Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable							
Analysis Batch: 402495	Sample	Sample	Spike	MSD	MSD				Prep Ba %Rec.					
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Barium	0.017		0.0500	0.0647		mg/L		95	75 - 125	5	20			
Beryllium	0.00034	U	0.0500	0.0480		mg/L		96	75 - 125	3	20			
Boron	0.027	1	0.100	0.129		mg/L		102	75 - 125	1	20			
Calcium	32		5.00	37.0		mg/L		96	75 - 125	2	20			
Chromium	0.0029		0.0500	0.0542		mg/L		103	75 - 125	0	20			
Cobalt	0.00040	U	0.0500	0.0521		mg/L		104	75 - 125	2	20			
Lithium	0.0051		0.0500	0.0514		mg/L		93	75 - 125	1	20			
Molybdenum	0.00085	U	0.0500	0.0480		mg/L		96	75 - 125	1	20			
Selenium	0.00024	U	0.0500	0.0521		mg/L		104	75 - 125	0	20			

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-400955/1		Client Sample ID: Method Blank							
Matrix: Water								Prep Type: To	otal/NA
Analysis Batch: 400955									
-	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			06/13/18 12:30	1

Lab Sample ID: LCS 400-400955/2	Client Sample ID: Lab Control Sample								
Matrix: Water							Prep Type: Total/NA		
Analysis Batch: 400955									
	Spike	LCS	LCS				%Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Total Dissolved Solids	293	260		mg/L		89	78 - 122		

Lab Sample ID: 400-154761-A-29 DU				Clie	nt Sample ID: Du			
Matrix: Water						Prep Type: To	tal	/NA
Analysis Batch: 400955								
Sample	Sample	DU D	U					RPD
Analyte Result	Qualifier	Result Q	Qualifier	Unit	D	RPD	L	_imit

Total Dissolved Solids

Method: SM 4500 CI- E - Chloride, Total										
Lab Sample ID: MB 400-403212/6	Client Sample ID: Method Blank									
Matrix: Water	Prep Type: Total/NA									
Analysis Batch: 403212										

7, 6.10 _ 4.10 100_1_	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			07/02/18 08:55	1

Lab Sample ID: LCS 400-403212/7			Clien	Client Sample ID: Lab Control Sam						
Matrix: Water						Prep Type: Total/NA				
Analysis Batch: 403212										
	Spike	LCS LCS				%Rec.				
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits				
Chloride	30.0	31.5	mg/L		105	90 - 110				

TestAmerica Pensacola

TestAmerica Job ID: 400-154881-5

SDG: Ash Pond

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: MRL 400-403212/3	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Databy 402242	

**Analysis Batch: 403212** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

	<b>Бріке</b>	WIKL	WIKL				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	2.00	1.72	I	mg/L		86	50 - 150	

Lab Sample ID: 400-154880-B-4 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403212

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	43		10.0	49.8	J3	mg/L		71	73 - 120	

Lab Sample ID: 400-154880-B-4 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 403212

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	43		10.0	49.5	J3	mg/L		67	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-403294/3 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 403294

	IVIB	IVIB						
Analyte	Result	Qualifier	PQL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032 mg/L			07/02/18 16:54	1

Lab Sample ID: LCS 400-403294/4 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** Analysis Batch: 403294

	<b>эріке</b>	LUS	LUS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride	 4.00	3.87		mg/L		97	90 - 110	

Lab Sample ID: 400-154881-A-4 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403294

•	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride	0.15		1.00	1.12		mg/L		97	75 - 125	 

Lab Sample ID: 400-154881-A-4 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Ratch: 402204

Allalysis Dalcii. 403234												
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Fluoride	0.15		1.00	1.10		mg/L		95	75 - 125	2	4	

TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-5 SDG: Ash Pond

## Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-154881-A-19 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403294

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit 0.032 U NC Fluoride 0.032 U mg/L

#### Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-403304/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

мв мв PQL Result Qualifier **MDL** Unit Analyte Analyzed Dil Fac Prepared Sulfate 1.4 U 5.0 1.4 mg/L 07/02/18 14:47

Lab Sample ID: LCS 400-403304/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Sulfate 15.0 16.0 107 90 - 110 mg/L

Lab Sample ID: MRL 400-403304/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Spike MRL MRL %Rec. Analyte Added Result Qualifier Limits Unit D %Rec Sulfate 5.00 5.56 mg/L 111 50 - 150

Lab Sample ID: 400-154880-B-3 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Sample Sample Spike MS MS

Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Sulfate 390 300 385 J3 77 - 128 mg/L

Lab Sample ID: 400-154880-B-3 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403304

Sample Sample Spike MSD MSD %Rec. **RPD** Added Result Qualifier Limits RPD Analyte Result Qualifier Unit %Rec Limit 300 386 J3 Sulfate 390 mg/L 77 - 128 0

#### Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-370670/23-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Prep Batch: 370670 Analysis Batch: 374837** Count Total

MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL **MDC** Unit Prepared Analyzed Dil Fac Radium-226 0.03659 U 0.228 0.228 1.00 0.444 pCi/L 06/15/18 16:02 07/11/18 14:24

TestAmerica Pensacola

%Rec.

Dil Fac

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-5 SDG: Ash Pond

### Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-370670/23-A

Lab Sample ID: LCS 160-370670/1-A

**Matrix: Water** 

**Matrix: Water** 

Carrier

Ba Carrier

Radium-226

**Matrix: Water** 

**Analysis Batch: 374837** 

**Analysis Batch: 374837** 

MB MB

**%Yield Qualifier** Limits 104 40 - 110

15.7

17.09

**Client Sample ID: Method Blank** Prep Type: Total/NA

Prep Batch: 370670

Analyzed 06/15/18 16:02 07/11/18 14:24

Prepared

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

68 - 137

Prep Batch: 370670

Total Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits

2.12

1.00

0.361 pCi/L

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 100 40 - 110

Lab Sample ID: LCSD 160-370670/2-A

Client Sample ID: Lab Control Sample Dup

109

Prep Type: Total/NA Prep Batch: 370670

**Analysis Batch: 374837** Total

LCSD LCSD **RER** Spike Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits RER Limit Radium-226 15.22 68 - 137 15.7 1.94 1.00 0.380 pCi/L 97 0.46

LCSD LCSD Carrier %Yield Qualifier Limits Ba Carrier 101 40 - 110

### Method: 9320 - Radium-228 (GFPC)

Client Sample ID: Method Blank Lab Sample ID: MB 160-370673/23-A **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 374835** Prep Batch: 370673

Count Total MB MB Uncert. Uncert. Dil Fac **Analyte** Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit Prepared **Analyzed** Radium-228 0.4235 Ū 0.365 0.367 1.00 0.583 pCi/L 06/15/18 17:02 07/11/18 09:46

MB MB Carrier %Yield Qualifier Limits Prepared Analyzed Dil Fac Ba Carrier 104 40 - 110 06/15/18 17:02 07/11/18 09:46 Y Carrier 69.2 40 - 110 06/15/18 17:02 07/11/18 09:46

Lab Sample ID: LCS 160-370673/1-A

**Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 374836 Prep Batch: 370673** Total

Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits Radium-228 10.9 11 13 1.32 1.00 0.497 pCi/L 102 56 - 140

# **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-5

SDG: Ash Pond

### Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-370673/1-A

**Matrix: Water** 

**Matrix: Water** 

**Analysis Batch: 374836** 

Analysis Batch: 374836

LCS LCS

Carrier	%Yield	Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	85.6		40 - 110

Lab Sample ID: LCSD 160-370673/2-A

**Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

**Prep Batch: 370673** 

Client Sample ID: Lab Control Sample Dup

**Prep Type: Total/NA** 

**Prep Batch: 370673** 

Total **Spike** LCSD LCSD Uncert. %Rec. **RER** Added (2σ+/-) Limits Analyte Result Qual RL **MDC** Unit %Rec RER Limit Radium-228 56 - 140 10.9 9.499 1.26 1.00 0.645 pCi/L 87 0.63

LCSD LCSD Carrier %Yield Qualifier Limits Ba Carrier 101 40 - 110 Y Carrier 65.0 40 - 110

Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-78700-A-6 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 375258

					Total				
	Sample	Sample	DU	DU	Uncert.				RER
Analyte	Result	Qual	Result	Qual	(2σ+/-)	RL	MDC Unit	RE	R Limit
Combined	0.210	U	0.5506		0.223	5.00	0.307 pCi/L	0.5	80

Radium 226 +

228

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Phone (850) 474-1001 Fax (850) 478-2671	Chain of	Chain of Custody Record	ecord		<b>TestAmerica</b>
Client information	Samples.		f: nire. Chevanne R	Carrier Tracking No(s):	COC No:
Client Contact. Kristi Mitchell		12	E-Mait: cheyenne.whitmire@testamericainc.com		400-14300-23340.2 Page: Page of
Company. Gulf Power Company			Analysis Re		# qop
Address: BIN 731 One Energy Place	Due Date Requested:		m'		Preservation Codes:
City: Pensacola	TAT Requested (days):		VOLVE		
State, Zip: F1, 32520			3d:		C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Ne2O4S E - NBHSO4 Q - Na2SO3
Phone: 850-444-6427(Tel)	Po #: Purchase Order not required		MITTE Specification		
Emait: krmitche@southemco.com	WO#:		1-0"d 2009 8000		
Project Name: CCR Smith Plant	Project #: 40006609		009 or 1 009), 4600	talners	K - EDTA W - PH 4-5 L - EDA Z - other (specify)
Site: Ash Pond	SSOW#:		bhold: sbilo8 3.98,8	noo le	Other:
		$\overline{}$	min MS/M mm MS/M D_CC!_E - O Sp. As Ba y v v v v v v v v v v v v v v v v v v	lumber c	
Sample Identification	Sample Date Time (	S-wolld,  P. O-washioff,  () ST-Thans, AnAb)	Perfor 025MS 0 lesoT - 0509	M listo]	Special patriotione Notes
	X	stion Code:	Q Q N	X	
Mw-11	6-7-18 0845	€ Water	XXXXX		
		Water			
		Water			
		Water		.2	
		-			
ant	Poison B Unknown Re	Radiological	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)  Return to Cilent	assessed if samples are retain	(alned longer than 1 month)
V, Other (specify)			Requirem		
Empty Kit Relinquished by:	Date:		Time:	Method of Shipment	
Keinquished by		Company	ived by:	LOUGHINGOVIN DESPITE	8 11 34 Company 14
Reithoustred by:	Date-Time:	Company	Received by:	Date/Time:	1350 TA-PEN Company
Custody Seals Infact: Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:	Remarks:	
A Yes A NO					Van DOIDAINASE

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-154881-5

SDG Number: Ash Pond

List Source: TestAmerica Pensacola

List Number: 1

Creator: Perez, Trina M

Login Number: 154881

Creator: Perez, Trina M		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a surventer.</td <td>vey N/A</td> <td></td>	vey N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 0.0°C, 0.0°C, 0.0°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the CO	C. True	
Samples are received within Holding Time (excluding tests with immediate HTs)	e True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Client: Gulf Power Company

Job Number: 400-154881-5 SDG Number: Ash Pond

Login Number: 154881 List Source: TestAmerica St. Louis
List Number: 2 List Creation: 06/12/18 05:09 PM

Creator: Press, Nicholas B

oreator. Fress, Nicholas D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## **Accreditation/Certification Summary**

Client: Gulf Power Company Pro2ectj/ ite: CCS / mitRPlant TestAmerica Job ID: 400-154881-5

/ DG: AsR Ponh

### Laboratory: TestAmerica Pensacola

All accrehitations certifications Relh by tRs laboratory are listehd . ot all accrehitations certifications are applicable to tRs reportd

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	/ tate ProNram	4	40150	0g-60-13
A. A9	I/ BjIOC 1E075		L74E1	07-77-70
Arizona	/ tate ProNram	3	AZ0E10	01-17-13
Arkansas DOQ	/ tate ProNram	g	88-0g83	03-01-18
California	/ tate ProNram	3	7510	0g-60-13
Floriha	. OLAP	4	O81010	0g-60-13
GeorNa	/ tate ProNram	4	O81010 (FL)	0g-60-13
Illinois	. OLAP	5	700041	10-03-18
lowa	/ tate ProNram	E	6gE	08-01-18
* ansas	. OLAP	E	O-10756	10-61-18
* entucky (K/ T)	/ tate ProNram	4	56	0g-60-13
* entucky (U U )	/ tate ProNram	4	38060	17-61-18
Louisiana	. OLAP	g	603Eg	0g-60-13
₋ouisiana (DU )	. OLAP	g	LA1E0005	17-61-18
<i>N</i> arylanh	/ tate ProNram	6	766	03-60-18
VassacRusetts	/ tate ProNram	1	W-FL034	0g-60-13
MicRiNan	/ tate ProNram	5	3317	0g-60-13
ew Jersey	. OLAP	7	FL00g	0g-60-13
ortR Carolina (U U j/ U )	/ tate ProNram	4	614	17-61-18
3klaRoma	/ tate ProNram	g	3810	08-61-18
Pennsyl <b>M</b> ania	. OLAP	6	g8-004gE	01-61-13
SRohe Islanh	/ tate ProNram	1	LAB 0060E	17-60-18
outR Carolina	/ tate ProNram	4	3g07g	0g-60-18 v
Tennessee	/ tate ProNram	4	T. 0730E	0g-60-13
Texas	. OLAP	g	T104E0478g-18-14	03-60-18
K/ FisR & U ilhlife	Feheral		LO058448-0	0E-61-18
(/ DA	Feheral		P660-1g-001E7	05-74-13
√ir <b>N</b> nia	. OLAP	6	4g01gg	0g-14-13
U asRinNton	/ tate ProNram	10	C315	05-15-13
U est VirNinia DOP	/ tate ProNram	6	16g	0g-60-13

#### Laboratory: TestAmerica St. Louis

All accrehitation jcertifications Relh by tRis laboratory are listehd . ot all accrehitations jcertifications are applicable to tRis reportd

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	/ tate ProNram	10	WB 00054	0g-60-13
A. A9	DoD OLAP		L7605	04-0g-13
Arizona	/ tate ProNram	3	AZ0816	17-08-18
California	/ tate ProNram	3	788g	0g-60-13
Connecticut	/ tate ProNram	1	PH-0741	06-61-13
Floriha	. OLAP	4	O8Eg83	0g-60-13
Illinois	. OLAP	5	700076	11-60-18
Iowa	/ tate ProNram	E	6E6	17-01-18
* ansas	. OLAP	E	O-1076g	10-61-18
* entucky (DU)	/ tate ProNram	4	30175	17-61-18
Louisiana	. OLAP	g	04080	0g-60-13
Louisiana (DU)	. OLAP	g	LA18001E	17-61-18
Warylanh	/ tate ProNram	6	610	03-60-18
WicRiNan	/ tate ProNram	5	3005	0g-60-18 v
Wissouri	/ tate ProNram	Е	E80	0g-60-18 v

v Accrehitationj Certification renewal penhinN- accrehitationj certification consihereh Malihd

## **Accreditation/Certification Summary**

Client: Gulf Power Company

TestAmerica Job ID: 400-154881-5

Pro2ectj/ ite: CCS / mitR Plant

/ DG: AsR Ponh

### **Laboratory: TestAmerica St. Louis (Continued)**

All accrehitationsjcertifications Relh by tRis laboratory are listend . ot all accrehitationsjcertifications are applicable to tRis reportd

Authority Program		EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>	
. eMaha	/ tate ProNram	3	WB 000547018-1	0E-61-18 v	
. ew Jersey	. OLAP	7	WB 007	0g-60-13	
. ew York	. OLAP	7	11g1g	06-61-13	
. ortRDakota	/ tate ProNram	8	S70E	0g-60-18 v	
. SC	. SC		74-7481E-01	17-61-77	
BklaRoma	/ tate ProNram	g	333E	08-61-18 v	
PennsylMania	. OLAP	6	g8-00540	07-78-13	
/ outR Carolina	/ tate ProNram	4	85007001	0g-60-18 v	
Texas	. OLAP	g	T104E04136-1E-11	0E-61-18 v	
K/ FisR& U ilhlife	Feheral		058448	0E-61-18	
K/ DA	Feheral		P660-1E-0078	07-07-70	
KtaR	. OLAP	8	WB 00054701g-8	0E-61-18 v	
VirNnia	. OLAP	6	4g0760	0g-14-13	
U asRinNton	/ tate ProNram	10	C537	08-60-18	
U est VirNinia DOP	/ tate ProNram	6	681	08-61-18 v	

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-154881-7

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Smith Plant

Revision: 1

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 9/7/2018 10:36:05 AM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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**Have a Question?** 



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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Gulf Power Company Project/Site: CCR Smith Plant

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#### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

Job ID: 400-154881-7

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-154881-7

#### **RAD**

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370673: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-02 (400-154881-7), MW-03 (400-154881-8), MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), MW-12 (400-154881-14), DUP-01 (400-154881-15), DUP-02 (400-154881-16), DUP-03 (400-154881-17), EB-01 (400-154881-18), FB-01 (400-154881-19) and EB-02 (400-154881-20), A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370673: Sample alignots 400-154881-1,2,3,4,5,6,7, and 10 were reduced due to potential matrix interference. Samples were yellow, murky, and had strong odors similar to that of sulfur. Sample aliquots 400154881-8,9,11,12,13,14,15,16,17,18,19, and 20 were reduced due to potential matrix interference. Samples were murky and had strong odors similar to that of sulfur, MW-02 (400-154881-7), MW-03 (400-154881-8), MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), MW-12 (400-154881-14), DUP-01 (400-154881-15), DUP-02 (400-154881-16), DUP-03 (400-154881-17), EB-01 (400-154881-18), FB-01 (400-154881-19) and EB-02 (400-154881-20).

Method(s) PrecSep 0: Radium 228 Prep Batch 160-370793: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: FB-02 (400-154881-21). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370670: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-02 (400-154881-7), MW-03 (400-154881-8), MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), MW-12 (400-154881-14), DUP-01 (400-154881-15), DUP-02 (400-154881-16), DUP-03 (400-154881-17), EB-01 (400-154881-18), FB-01 (400-154881-19) and EB-02 (400-154881-20). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370670: Sample aliquots 400-154881-1,2,3,4,5,6,7, and 10 were reduced due to potential matrix interference. Samples were yellow, murky, and had strong odors similar to that of sulfur. Sample aliquots 400154881-8,9,11,12,13,14,15,16,17,18,19, and 20 were reduced due to potential matrix interference. Samples were murky and had strong odors similar to that of sulfur, MW-02 (400-154881-7), MW-03 (400-154881-8), MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), MW-12 (400-154881-14), DUP-01 (400-154881-15), DUP-02 (400-154881-16), DUP-03 (400-154881-17), EB-01 (400-154881-18), FB-01 (400-154881-19) and EB-02 (400-154881-20).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-370790: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: FB-02 (400-154881-21). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

#### Metals

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), DUP-02 (400-154881-16) and DUP-03 (400-154881-17). Elevated reporting limits (RLs) are provided.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 403212 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 CI- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), MW-12 (400-154881-14), DUP-02 (400-154881-16), DUP-03 (400-154881-17), (400-154909-A-12), (400-154909-A-12 MS) and (400-154909-A-12 MSD). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 CI- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 403252 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS)

3

#### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

### Job ID: 400-154881-7 (Continued)

#### Laboratory: TestAmerica Pensacola (Continued)

recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The CCB contained sulfates above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-06 (400-154881-9), MW-07 (400-154881-10), MW-08 (400-154881-11), MW-09 (400-154881-12), MW-10 (400-154881-13), DUP-02 (400-154881-16) and DUP-03 (400-154881-17). Elevated reporting limits (RLs) are provided.

Report revised to add missing QC.

TestAmerica Job ID: 400-154221-8

SDG: Ash Pond

**Client Sample ID: MW-12** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

# Lab Sample ID: 411-054660-P

Rnalyte	sefult Auali <b>ü</b>	ler QAL	MDL	Fnit	Dil hac	D	MetdoT	Qrep 3ype
. arium	03018	0300g5	030004v	mL/6	5	_	90g0	Total
								RecoBerable
. oron	030g8 I	03050	0 <b>3</b> 0g1	mL/6	5		90g0	Total
								RecoBerable
Calcium	Mg	03g5	03I M	mL/6	5		90g0	Total
								RecoBerable
Chromium	0 <b>3</b> 00gv	0 <b>3</b> 00g5	030011	mL/6	5		90g0	Total
								RecoBerable
6ithium	030051	030050	030011	mL/6	5		90g0	Total
								RecoBerable
Total DissolBed Solids	190	530	MB4	mL/6	1		SN g540C	Total/7 A
Chloride	1M	g <b>3</b> 0	0390	mL/6	1		SN 4500 CI- E	Total/7 A
Fluoride	03l v	0310	030Mg	mL/6	1		SN 4500 F C	Total/7 A
Sulfate	432 I	530	134	mL/6	1		SN 4500 SO4 E	Total/7 A
Field pH	9348			SU	1		Field SamplinL	Total/7 A

Client Sample ID: MW-1(

## Lab Sample ID: 411-054660-6

Rnalyte	s ef ult	Auali <b>ü</b> er	QAL	MDL	Fnit	Dil hac	D	MetdoT	Qrep 3ype
. arium	03012		0 <b>3</b> 00g5	030004v	mL/6	5	_	90g0	Total
									RecoBerable
Calcium	132		03g5	031 M	mL/6	5		90g0	Total
									RecoBerable
Chromium	0 <b>3</b> 00g9		0 <b>3</b> 00g5	030011	mL/6	5		90g0	Total
									RecoBerable
6ithium	03011		030050	030011	mL/6	5		90g0	Total
									RecoBerable
Selenium	03000MD	I	0 <b>3</b> 001M	0 <b>3</b> 000g4	mL/6	5		90g0	Total
									RecoBerable
Total DissolBed Solids	49		530	M34	mL/6	1		SN g540C	Total/7 A
Chloride	11		g <b>3</b> 0	0390	mL/6	1		SN 4500 CI- E	Total/7 A
Fluoride	03040	I	0310	030Mg	mL/6	1		SN 4500 F C	Total/7 A
Field pH	43/9				SU	1		Field SamplinL	Total/7 A

Client Sample ID: MW-1)

### Lab Sample ID: 411-054660-7

Rnalyte	s ef ult	Auali <b>U</b> er	QAL	MDL	Fnit	Dil hac	D M	letdoT	Qrep 3ype
Arsenic	03000v0	I	03001M	0300049	mL/6	5	90	0g0	Total
									RecoBerable
. arium	03052		0 <b>3</b> 00g5	030004v	mL/6	5	90	0g0	Total
						_			RecoBerable
. eryllium	030014	I	0 <b>3</b> 00g5	03000M4	mL/6	5	90	0g0	Total
						<u>.</u> .			RecoBerable
6ithium	03014		030050	030011	mL/6	5	90	0g0	Total
0.1.	2002 5		000414	0000 4	1.10	_			RecoBerable
Selenium	0 <b>3</b> 000g5	1	03001M	03000g4	mL/6	5	90	0g0	Total
anan DC	0.04		420	0.04	L /C	400	0/	00	RecoBerable
. oron - D6	234		130	U <b>3</b> +g	mL/6	100	90	0g0	Total
Calcium - D6					ml /6	100		0~0	RecoBerable
Calcium - Do	gv0		530	ya	mL/6	100	90	0g0	Total
Total DissolBed Solids	9100		1MD	25	mL/6	1	S	N g540C	RecoBerable Total/7 A
Chloride	gv00				mL/6	90		N 4500 CI- E	Total/7 A
			1g0						
Fluoride	03050	I	0310	030Mg		1		N 4500 F C	Total/7 A
Sulfate	590		150	4g	mL/6	MD	S	N 4500 SO4 E	Total/7 A

This Detection Summary does not include radiochemical test results3

# **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154221-8

SDG: Ash Pond

Client Sample ID: MW-1) &ContinueTB

Lab Sample ID: 411-054660-7

Rnalyte sefult AualiUer MDL Fnit QAL Dil hac D MetdoT **Qrep 3ype** Field pH SU Total/7 A Field SamplinL 53g5

#### **Client Sample ID: MW-1P** Lab Sample ID: 411-054660-01

Rnalyte	sefult A	uali <b>ü</b> er QAL	MDL	Fnit	Dil hac	D	MetdoT	Qrep 3ype
Arsenic	0 <b>3</b> 00gg	03001M	0300049	mL/6	5	_	90g0	Total
								RecoBerable
. arium	03090	0 <b>3</b> 00g5	0 <b>3</b> 0004v	mL/6	5		90g0	Total
					_			RecoBerable
Chromium	03001g I	0 <b>3</b> 00g5	030011	mL/6	5		90g0	Total
					<u>.</u> .			RecoBerable
6ithium	030012 I	030050	030011	mL/6	5		90g0	Total
NI a li da al a sa cosa	020000 1	07045	020005	L /C	_		00-0	RecoBerable
Nolybdenum	030098 I	03015	0300025	ML/6	5		90g0	Total
Selenium	03000g2 I	03001M	03000g4	ml /6	5		90g0	RecoBerable
Seleriidiii	03000g2 1	0300 1101	0300094	IIIL/O	5		90g0	Total RecoBerable
. oron - D6	M80	03g5	0.31.1	mL/6	g5		90g0	Total
. 0.011	1100	ogo	00.1	III L	90		oogo	RecoBerable
Calcium - D6	g00	1 <b>3</b> M	039M	mL/6	g5		90g0	Total
	Ŭ				· ·		Ü	RecoBerable
Total DissolBed Solids	Mg00	50	N44	mL/6	1		SN g540C	Total/7 A
Chloride	1400	1g0	M9	mL/6	90		SN 4500 CI- E	Total/7 A
Sulfate	850	150	4g	mL/6	MD		SN 4500 SO4 E	Total/7 A
Field pH	9 <b>3</b> M1		· ·	SU	1		Field SamplinL	Total/7 A

# **Client Sample ID: MW-16**

### Lab Sample ID: 411-054660-00

Rnalyte	s ef ult	Auali <b>ü</b> er	QAL	MDL	Fnit	Dil hac	D	MetdoT	<b>Qrep 3ype</b>
Arsenic	0300g0		03001M	0300049	mL/6	5	_	90g0	Total
									RecoBerable
. arium	0 <b>3</b> 09g		0 <b>3</b> 00g5	030004v	mL/6	5		90g0	Total
									RecoBerable
. eryllium	030014	I	0 <b>3</b> 00g5	03000M4	mL/6	5		90g0	Total
									RecoBerable
6ithium	030089		030050	030011	mL/6	5		90g0	Total
		_				_			RecoBerable
Selenium	03000Mg	l	03001M	03000g4	mL/6	5		90g0	Total
									RecoBerable
. oron - D6	15		130	034g	mL/6	100		90g0	Total
				<u></u> .					RecoBerable
Calcium - D6	5M0		530	g35	mL/6	100		90g0	Total
T (   B)	0000		43.0	0.5	1 10			011 5400	RecoBerable
Total DissolBed Solids	9000		1M0		mL/6	1		SN g540C	Total/7 A
Chloride	M500		g00	90	mL/6	100		SN 4500 CI- E	Total/7 A
Sulfate	v10		150	4g	mL/6	MD		SN 4500 SO4 E	Total/7 A
Field pH	438M				SU	1		Field SamplinL	Total/7 A

### **Client Sample ID: MW-17**

### Lab Sample ID: 411-054660-02

Rnalyte	s ef ult	Auali <b>ü</b> er	QAL	MDL	Fnit	Dil hac	D	MetdoT	Qrep 3ype
Arsenic	0300M0		03001M	0300049	mL/6	5	_	90g0	Total
. arium	0302v		0 <b>3</b> 00g5	030004v	mL/6	5		90g0	RecoBerable Total RecoBerable

This Detection Summary does not include radiochemical test results3

TestAmerica Pensacola

9/7/2018 (Rev. 1)

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154221-8

Lab Sample ID: 411-054660-02

SDG: Ash Pond

## Client Sample ID: MW-17 &ContinueTB

Rnalyte	sefult A	uali <b>U</b> er QAL	MDL	Fnit	Dil hac	D	MetdoT	Qrep 3ype
6ithium	0300g9 I	030050	030011	mL/6	5	_	90g0	Total RecoBerable
Nolybdenum	0300M9 I	03015	0300025	mL/6	5		90g0	Total RecoBerable
. oron - D6	v <b>3</b> M	130	034g	mL/6	100		90g0	Total RecoBerable
Calcium - D6	g20	530	g <b>3</b> 5	mL/6	100		90g0	Total RecoBerable
Total DissolBed Solids	4000	50	M4	mL/6	1		SN g540C	Total/7 A
Chloride	gg00	1g0	M9	mL/6	90		SN 4500 CI- E	Total/7 A
Fluoride	03050 I	0310	030Mg	mL/6	1		SN 4500 F C	Total/7 A
Sulfate	940	150	4g	mL/6	MD		SN 4500 SO4 E	Total/7 A
Field pH	9 <b>3</b> 5g			SU	1		Field SamplinL	Total/7 A

## Client Sample ID: MW-01

# Lab Sample ID: 411-054660-0(

Rnalyte	s ef ult	Auali <b>U</b> er	QAL	MDL	Fnit	Dil hac	D Metd	οΤ	Qrep 3ype
Arsenic	0300g8		03001M	0300049	mL/6	5	90g0		Total
									RecoBerable
. arium	0310		0 <b>3</b> 00g5	030004v	mL/6	5	90g0		Total
						_			RecoBerable
. eryllium	0300044	1	0 <b>3</b> 00g5	03000M4	mL/6	5	90g0		Total
									RecoBerable
6ithium	030054		030050	030011	mL/6	5	90g0		Total
						_			RecoBerable
Nolybdenum	030010	I	03015	0300025	mL/6	5	90g0		Total
D.O.	4.4		_	0.00.4	1.10	0.0			RecoBerable
. oron - D6	11		g <b>3</b> 0	0324	mL/6	g00	90g0		Total
0-1-:									RecoBerable
Calcium - D6	500		10	530	mL/6	g00	90g0		Total
Total Discollad Calida	5000		50	B. M	L /C	4	CNI -	E400	RecoBerable
Total DissolBed Solids	5200		50		mL/6	1	_	540C	Total/7 A
Chloride	g800		1g0	M9	mL/6	90	SN 4	500 CI- E	Total/7 A
Sulfate	2M0		150	4g	mL/6	MD	SN 4	500 SO4 E	Total/7 A
Field pH	53M5				SU	1	Field	SamplinL	Total/7 A

### Client Sample ID: MW-02

### Lab Sample ID: 411-054660-04

Rnalyte	s ef ult	Auali <b>U</b> er Q	AL MDL	. Fnit	Dil hac	D	MetdoT	Qrep 3ype
. arium	0301g	0300	g5 030004v	mL/6		_	90g0	Total
								RecoBerable
. oron	03088	03	50 030g1	mL/6	5		90g0	Total
								RecoBerable
Calcium	MD	0:	bg5 0311	/I mL/6	5		90g0	Total
								RecoBerable
6ithium	03011	0300	50 030011	mL/6	5		90g0	Total
								RecoBerable
Total DissolBed Solids	490		530 MB	mL/6	1		SN g540C	Total/7 A
Chloride	1v0		g0 9 <b>3</b>	) mL/6	10		SN 4500 CI- E	Total/7 A
Fluoride	03lg	0:	030Mg	mL/6	1		SN 4500 F C	Total/7 A
Sulfate	g <b>3</b> M	1	530 13	mL/6	1		SN 4500 SO4 E	Total/7 A
Field pH	9304			SU	1		Field SamplinL	Total/7 A

This Detection Summary does not include radiochemical test results3

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154221-8

SDG: Ash Pond

Client Sample ID: DF Q-10

Lab Sample	ID:	411-054660-05
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Rnalyte	sefult AualiÜlei	r QAL	MDL	Fnit	Dil hac	D MetdoT	<b>Qrep 3ype</b>
. arium	03012	0300g5	030004v	mL/6	5	90g0	Total
							RecoBerable
. oron	030M8 I	03050	0 <b>3</b> 0g1	mL/6	5	90g0	Total
							RecoBerable
Calcium	132	03g5	03I M	mL/6	5	90g0	Total
							RecoBerable
Chromium	0300g4 I	0 <b>3</b> 00g5	030011	mL/6	5	90g0	Total
							RecoBerable
6ithium	0 <b>3</b> 01g	030050	030011	mL/6	5	90g0	Total
							RecoBerable
Total DissolBed Solids	5g	530	MB4	mL/6	1	SN g540C	Total/7 A
Chloride	11	g <b>3</b> 0	0390	mL/6	1	SN 4500 CI-	E Total/7 A

Client Sample ID: DFQ-12

### Lab Sample ID: 411-054660-0)

Rnalyte	s ef ult	Auali <b>ü</b> er	QAL	MDL	Fnit	Dil hac	D	MetdoT	Qrep 3ype
Arsenic	03001g	I	03001M	0300049	mL/6	5	_	90g0	Total
									RecoBerable
. arium	0 <b>3</b> 09g		0 <b>3</b> 00g5	0 <b>3</b> 0004v	mL/6	5		90g0	Total
									RecoBerable
. eryllium	030014	I	0 <b>3</b> 00g5	03000N4	mL/6	5		90g0	Total
									RecoBerable
6ithium	030098		030050	030011	mL/6	5		90g0	Total
									RecoBerable
. oron - D6	14		130	034g	mL/6	100		90g0	Total
0.1.	540			~	1.10	100		00.0	RecoBerable
Calcium - D6	510		530	g <b>3</b> 5	mL/6	100		90g0	Total
Total Discal Dad Calida			410					ON ~5400	RecoBerable
Total DissolBed Solids	9100		1M0		mL/6	1		SN g540C	Total/7 A
Chloride	Mg00		g00		mL/6	100		SN 4500 CI- E	Total/7 A
Sulfate	v00		150	4g	mL/6	MD		SN 4500 SO4 E	Total/7 A

Client Sample ID: DFQ-1(

### Lab Sample ID: 411-054660-0P

Rnalyte	s ef ult	Auali <b>ü</b> er	QAL	MDL	Fnit	Dil hac	D MetdoT	Qrep 3ype
Arsenic	0300094	I	03001M	0300049	mL/6	5	90g0	Total
								RecoBerable
. arium	03090		0 <b>3</b> 00g5	030004v	mL/6	5	90g0	Total
								RecoBerable
. eryllium	030015	1	0 <b>3</b> 00g5	03000M4	mL/6	5	90g0	Total
								RecoBerable
6ithium	03014		030050	030011	mL/6	5	90g0	Total
								RecoBerable
. oron - D6	v34		130	034g	mL/6	100	90g0	Total
	_			_				RecoBerable
Calcium - D6	gv0		530	g <b>3</b> 5	mL/6	100	90g0	Total
								RecoBerable
Total DissolBed Solids	5200		1MD	25	mL/6	1	SN g540C	Total/7 A
Chloride	Mg00		140	4g	mL/6	80	SN 4500 CI-	E Total/7 A
Fluoride	03050	1	0310	030Mg	mL/6	1	SN 4500 F C	Total/7 A
Sulfate	5M0		100	g2	mL/6	g0	SN 4500 SO	4 E Total/7 A

Client Sample ID: E9-10

Lab Sample ID: 411-054660-06

This Detection Summary does not include radiochemical test results3

# **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154221-8

SDG: Ash Pond

Client Sample ID: E9-10 & Continue TB

Lab Sample ID: 411-054660-06

sefult AualiUer Rnalyte QAL MDL Fnit Dil hac D MetdoT **Qrep 3ype** 03000g4 mL/6 5 90g0 Selenium 0300051 I 03001M Total

RecoBerable

Client Sample ID: h9 -10 Lab Sample ID: 411-054660-07

7 o Detections3

Client Sample ID: E9-12 Lab Sample ID: 411-054660-21

Rnalyte QAL sefult AualiUer MDL Fnit Dil hac D MetdoT **Qrep 3ype** Sulfate 139 Ī 530 134 mL/6 SN 4500 SO4 E Total/7 A

Client Sample ID: h9-12 Lab Sample ID: 411-054660-20

7 o Detections3

This Detection Summary does not include radiochemical test results3

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
60M0	( etals )ICP/( SL	SW846	TAE PN,
S( M540C	SolidsvTotal DissolFed )TDSL	S(	TAE PN,
S( 4500 CI- N	ChloridevTotal	S(	TAE PN,
S( 4500 O C	Quoride	S(	TAE PN,
S( 4500 S94 N	SulfatevTotal	S(	TAE PN,
3_15	Radium-M6)GOPCL	SW846	TAESE
3_M0	Radium-MMB )GOPCL	SW846	TAESE
RaMM6gRaMM8	Combined Radium-MM6 and Radium-MM8	TAE-STE	TAESE
Cield Samplin=	Cield Samplin=	NPA	TAE PN,
_005A	PreparationvTotal RecoFerable or DissolFed (etals	SW846	TAE PN,
PrecSepg0	PreparationvPrecipitate Separation	, one	TAESE
PrecSep-MI	PreparationvPrecipitate Separation )MI-Day In-GrowthL	, one	TAESE

#### **Protocol References:**

NPA U" S NnFironmental Protection A=ency

- , one U, one
- S( UxStandard ( ethods Oor The N. amination 9 f Water And Wastewaterx
- SW846 UxTest (ethods Cor NFaluatin= Solid WastevPhysical/Chemical (ethodswThird Nditionv, oFember 1386 And Its pdates7
- TAE-STE U TestAmerica EaboratoriesvSt7EouisvCacility Standard 9 peratin= Procedure7

#### **Laboratory References:**

TAE PN, UTestAmerica Pensacolav\_\_55 ( cEemore DriFevPensacolavOE\_N514vTNE)850L424-1001 TAE SE U TestAmerica St7Eouisv1\_215 Rider Trail, orthvNarth Cityv( 9 6\_045vTNE)\_14LM88-8566

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-7

. 400-154881-7	
SDG: Ash Pond	

Lab Sample ID	Client Sample ID	Matrix	Collected R	eceived
400-154881-7	MW-02	Water	06/06/18 14:10 06/0	8/18 13:50
400-154881-8	MW-03	Water	06/06/18 19:02 06/0	8/18 13:50
400-154881-9	MW-06	Water	06/08/18 08:29 06/0	8/18 13:50
400-154881-10	MW-07	Water	06/08/18 10:11 06/0	8/18 13:50
400-154881-11	MW-08	Water	06/07/18 13:14 06/0	8/18 13:50
400-154881-12	MW-09	Water	06/07/18 17:21 06/0	8/18 13:50
400-154881-13	MW-10	Water	06/07/18 19:48 06/0	8/18 13:50
400-154881-14	MW-12	Water	06/06/18 16:06 06/0	8/18 13:50
400-154881-15	DUP-01	Water	06/06/18 06:00 06/0	8/18 13:50
400-154881-16	DUP-02	Water	06/07/18 07:00 06/0	8/18 13:50
400-154881-17	DUP-03	Water	06/08/18 06:05 06/0	8/18 13:50
400-154881-18	EB-01	Water	06/07/18 11:55 06/0	8/18 13:50
400-154881-19	FB-01	Water	06/07/18 11:50 06/0	8/18 13:50
400-154881-20	EB-02	Water	06/08/18 09:17 06/0	8/18 13:50
400-154881-21	FB-02	Water	06/08/18 09:12 06/0	8/18 13:50

9

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

SDG: Ash Pond

Client Sample ID: MW-02
Date Collected: 06/06/18 14:10
Date Received: 06/08/18 13:50

Lab Sample ID: 400-154881-7

**Matrix: Water** 

Method: 6020 - Metals	(ICP/MS) - Total Recov	verable						
Analyte	Result Qua	alifier PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046 U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Barium	0.017	0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Meryllium	0.00034 U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Boron	0.027 I	0.050	0.091	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Calcium	32	0.95	0.13	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Chromium	0.0029	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Cobalt	0.00040 U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Lithium	0.0051	0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:11	5
7 olybdenum	0.00085 U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 1B:11	5
Selenium	0.00094 U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 1B:11	5

Canaral Chamiatm								
General Chemistry Analyte	Result Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	160	5.0	3.4	mg/L			06/13/18 16:43	1
Chloride	13	9.0	0.60	mg/L			02/09/18 02:36	1
Fluoride	0.19	0.10	0.039	mg/L			02/09/18 11:09	1
Sulfate	4.8 I	5.0	1.4	mg/L			02/01/18 19:32	1

Method: 9315 - Ra	dium-226 (	GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.02		0.3B0	0.400	1.00	0.328	pCi/L	06/15/18 16:09	02/11/18 19:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/12/18 13:09	05/11/18 19:60	1

Method: 9320 - Rad	dium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-998	0.304	U	0.962	0.96B	1.00	0.496	pCi/L	06/15/18 12:09	02/11/18 0B:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/12/18 15:09	05/11/18 0. :44	1
Y Carrier	8572		40 - 110					03/12/18 15:09	05/11/18 0. :44	1

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.32		0.423	0.489	5.00	0.496	pCi/L		02/19/18 12:53	1

Method: Field Sampling - Field	d Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.47				SU			06/06/18 14:10	1

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10

11

12

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Lab Sample ID: 400-154881-8

Matrix: Water

Client Sample ID: MW-03
Date Collected: 06/06/18 19:02
Date Received: 06/08/18 13:50

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Barium	0.018		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Moron	0.091	U	0.050	0.091	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Calcium	1.8		0.95	0.13	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Chromium	0.0026		0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Lithium	0.011		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:56	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 1B:56	5
Selenium	0.00030	Ĭ	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 1B:56	5

Result Q	ualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
46		5.0	3.4	mg/L			06/13/18 16:43	1
11		9.0	0.60	mg/L			02/09/18 02:43	1
0.040 I		0.10	0.039	mg/L			02/09/18 11:02	1
1.4 U		5.0	1.4	mg/L			02/01/18 19:32	1
	46 11 0.040 I		46 5.0 11 9.0 0.040 I 0.10	46     5.0     3.4       11     9.0     0.60       0.040 I     0.10     0.039	46     5.0     3.4     mg/L       11     9.0     0.60     mg/L       0.040 I     0.10     0.039     mg/L	46     5.0     3.4 mg/L       11     9.0     0.60 mg/L       0.040 I     0.10     0.039 mg/L	46     5.0     3.4 mg/L       11     9.0     0.60 mg/L       0.040 I     0.10     0.039 mg/L	46     5.0     3.4     mg/L     06/13/18 16:43       11     9.0     0.60     mg/L     02/09/18 02:43       0.040 I     0.10     0.039     mg/L     02/09/18 11:02

Method: 9315 - R	Radium-226 (	GFPC)								
		•	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.830		0.329	0.32B	1.00	0.384	pCi/L	06/15/18 16:09	02/11/18 19:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	. 175		40 - 110					03/12/18 13:09	05/11/18 19:60	1

Method: 9320 - I	Kadium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-998	0.360	U	0.330	0.331	1.00	0.530	pCi/L	06/15/18 12:09	02/11/18 0B:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	. 175		40 - 110					03/12/18 15:09	05/11/18 0. :44	1
Y Carrier	8471		40 - 110					03/12/18 15:09	05/11/18 0. :44	1

Method: Ra226_Ra	a228 - Con	bined Ra	dium-226 a	ınd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.19		0.4B2	0.503	5.00	0.530	pCi/L		02/19/18 12:53	1

Method: Field Sampling - Field	Sampling								
Analyte	Result (	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	4.96				SU			06/06/18 1B:09	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

**Client Sample ID: MW-06** 

Radium-226

Carrier

Ba Carrier

Date Collected: 06/08/18 08:29 Date Received: 06/08/18 13:50

Method: 6020 - Metals (ICP/MS) - Total Recoverable

12.1

109

Qualifier

%Yield

Lab Sample ID: 400-154881-9

06/15/18 16:09 02/11/18 19:30

03/12/18 13:09 05/11/18 19:60

Analyzed

Dil Fac

Prepared

**Matrix: Water** 

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00090	l .	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 99:95	
Barium	0.058		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 99:95	Ę
Beryllium	0.0014	1	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 99:95	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 99:95	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 99:95	5
Lithium	0.014		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 99:95	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 99:95	5
Selenium	0.00025	1	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 99:95	5
Method: 6020 - Metal	s (ICP/MS) - Total Re	ecoverab	le - DL						
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	8.4		1.0	0.49	mg/L		06/99/18 11:58	06/95/18 90:55	100
Calcium	290		5.0	9.5	mg/L		06/99/18 11:58	06/95/18 90:55	100
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6100		130	85	mg/L			06/15/18 15:50	1
Chloride	2900		190	36	mg/L			02/09/18 0B:54	60
Fluoride	0.050	1	0.10	0.039	mg/L			02/09/18 18:04	1
Sulfate	560		150	49	mg/L			02/09/18 15:33	30
Method: 9315 - Radiu	ım-226 (GFPC)								
		Count	Total						
		Uncert.	Uncert.						
Analyte	Result Qualifier	(2σ+/-)	(2σ+/-)	RL I	MDC Unit		Prepared	Analyzed	Dil Fac

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	14.8		0.B34	1.65	1.00	0.448	pCi/L	06/15/18 12:09	02/11/18 0B:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					03/12/18 15:09	05/11/18 0. :44	1
Y Carrier	8279		40 - 110					03/12/18 15:09	05/11/18 0. :44	1

1.64

1.00

0.466 pCi/L

1.99

Limits

40 - 110

Method: Ra226_Ra			Count Uncert.	Total Uncert.						
Amalada	D 14	0			D.	MDO	1196	B	A	D11 F
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	26.9		1.54	9.33	5.00	0.466	pCi/L		02/19/18 12:53	1

Result Qualifier Analyte PQL **MDL** Unit D Prepared **Analyzed** Dil Fac 06/08/18 08:9B SU Field pH 5.25

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Client Sample ID: MW-07

Lab Sample ID: 400-154881-10

**Matrix: Water** 

Date Received. 00/0	10/10 13.30
Date Received: 06/0	0/40 42-50
Date Collected: 06/0	08/18 10:11

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0022		0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Barium	0.060		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Chromium	0.0012	Τ	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Lithium	0.0018	T.	0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Molybdenum	0.0067	T	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Selenium	0.00028	I	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 99:9B	5
Method: 6020 - Metals	(ICP/MS) - Total Re	coverable	- DL						
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.0		0.05	0.11	ma/l		06/00/19 11:59	06/05/18 00·5B	05

Method: 6020 - Metals (ICP/MS	) - Total Re	coverable -	DL						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.0		0.95	0.11	mg/L		06/99/18 11:58	06/95/18 90:5B	95
Calcium	200		1.3	0.63	mg/L		06/99/18 11:58	06/95/18 90:5B	95
_									

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	)	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3200		50	34	mg/L			06/15/18 15:50	1
Chloride	1400		190	36	mg/L			02/09/18 0B:54	60
vluoride	0.039	U	0.10	0.039	mg/L			02/09/18 18:02	1
Sulfate	750		150	49	mg/L			02/09/18 15:33	30

Method: 9315 - R	Radium-226 (	GFPC)	Count Uncert.	Total Uncert.					
Analyte Radium-226	Result 18.6	Qualifier	( <b>2σ+/-)</b> 1.54	<b>(2σ+/-)</b> 9.92	<b>RL</b> 1.00	 Unit pCi/L	Prepared 06/15/18 16:09	Analyzed 02/11/18 19:30	Dil Fac
<b>Carrier</b> Ba Carrier	%Yield 74	Qualifier	Limits 40 - 110				<b>Prepared</b> 03/12/18 13:09	Analyzed 05/11/18 19:60	Dil Fac

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.01		0.46B	0.545	1.00	0.499	pCi/L	06/15/18 12:09	02/11/18 0B:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74		40 - 110					03/12/18 15:09	05/11/18 0. :44	1
Y Carrier	85 <i>7</i> 1		40 - 110					03/12/18 15:09	05/11/18 0. :44	1

Method: Ra226_Ra	228 - Con	nbined Ra	dium-226 a	nd Radium	-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	21.6		1.61	9.33	5.00	0.499	pCi/L		02/19/18 12:53	1

226 + 228							
Method: Field Sampling - Field Analyte Field pH	Result Qualifier 6.31	PQL	MDL Unit	<u>D</u>	Prepared	Analyzed 06/08/18 10:11	Dil Fac

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Client Sample ID: MW-08

**Total Dissolved Solids** 

Chloride

Carrier

Ba Carrier

Date Collected: 06/07/18 13:14 Date Received: 06/08/18 13:50

Method: 6020 - Metals (ICP/MS) - Total Recoverable

6000

3500

Limits

40 - 110

**%Yield Qualifier** 

. . 75

Lab Sample ID: 400-154881-11

**Matrix: Water** 

06/13/18 18:95

02/09/18 10:46

Analyzed

03/12/18 13:09 05/11/18 14:96

Prepared

100

Dil Fac

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020		0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 99:34	5
Barium	0.062		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 99:34	5
Beryllium	0.0014	1	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 99:34	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 99:34	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 99:34	5
Lithium	0.0076		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 99:34	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 99:34	5
Selenium	0.00032	1	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 99:34	5
_ Method: 6020 - Metals (IC	P/MS) - Total Re	ecoverable	- DL						
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	15		1.0	0.49	mg/L		06/99/18 11:58	06/95/18 91:04	100
Calcium	530		5.0	9.5	mg/L		06/99/18 11:58	06/95/18 91:04	100
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

vluoride		0.039	U	(	0.10	0.039	) mg/	L		02/09/18 12:94	1
Sulfate		910			150	49	mg/	Ĺ		02/09/18 15:95	30
Method: 9315 - Ra	adium-226 (	GFPC)									
	•	•	Count	Total							
			Uncert.	Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	17.4		1.44	9.13		1.00	0.34B	pCi/L	06/15/18 16:09	02/11/18 14:93	1

130

900

85 mg/L

60 mg/L

Method: 9320 - F	Radium-228 (	(GFPC)								
	·		Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	20.1		1.12	9.1B	1.00	0.564	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	5570		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	37.5		1.86	3.05	5.00	0.564	pCi/L		02/19/18 12:53	1

Method: Fleid Sampling - Fleid (	Samping								
Analyte	Result C	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	4.73				SU			06/02/18 13:14	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Lab Sample ID: 400-154881-12

Matrix: Water

02/09/18 15:95

Date Collected: 06/07/18 17:21 Date Received: 06/08/18 13:50

**Sulfate** 

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-09

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0030		0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 99:38	5
Barium	0.089		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 99:38	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 99:38	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 99:38	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 99:38	5
Lithium	0.0026	T.	0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 99:38	5
Molybdenum	0.0036	Τ	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 99:38	5
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 99:38	5
Method: 6020 - Metals (ICF Analyte	•	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
		Qualitier				D			
Boron	9.3		1.0		mg/L		06/99/18 11:58	06/95/18 91:08	100
Calcium	280		5.0	9.5	mg/L		06/99/18 11:58	06/95/18 91:08	100
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4000		50	34	mg/L			06/13/18 18:95	1
Chloride	2200		190	36	mg/L			02/09/18 0B:46	60
								02:00:10 02:10	00

Method: 9315 - F	Radium-226 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	9.54		1.02	1.32	1.00	0.369	pCi/L	06/15/18 16:09	02/11/18 14:93	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109	-	40 - 110					03/12/18 13:09	05/11/18 14:96	1

150

49 mg/L

640

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	4.35		0.541	0.623	1.00	0.443	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	8879		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226_Ra	228 - Com	bined Ra	dium-226 a	nd Radiun	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	13.9		1.90	1.53	5.00	0.443	pCi/L		02/19/18 12:53	1
Г										

Method: Field Sampling - Field	d Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.52				SU			06/02/18 12:91	1

2

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Lab Sample ID: 400-154881-13

Matrix: Water

02/09/18 12:31

02/09/18 15:95

Date Collected: 06/07/18 19:48 Date Received: 06/08/18 13:50

vluoride

**Sulfate** 

Field pH

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-10

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0027		0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 93:05	5
Barium	0.10		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 93:05	5
Beryllium	0.00044	T	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 93:05	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 93:05	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 93:05	5
Lithium	0.0054		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 93:05	5
Molybdenum	0.0010	1	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 93:05	5
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 93:05	5
Method: 6020 - Metals (ICP/MS) -	Total Be	coverable	- DI						
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	11	-	9.0	0.84	mg/L		06/99/18 11:58	06/95/18 91:13	900
Calcium	500		10	5.0	mg/L		06/99/18 11:58	06/95/18 91:13	900
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5800		50	34	mg/L			06/13/18 18:95	1
Chloride	2700		190	36	mg/L			02/09/18 0B:46	60

Method: 9315 - R	adium-226 (	(GFPC)	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	6.78		0.8B9	1.08	1.00	0.366	pCi/L	06/15/18 16:09	02/11/18 14:93	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					03/12/18 13:09	05/11/18 14:96	1

0.10

150

0.039 mg/L

49 mg/L

SU

0.039 U

830

5.35

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	11.7		0.883	1.3B	1.00	0.442	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	587.		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226_Ra	228 - Con	ibined Radi	um-226 ar Count Uncert.	nd Radium-2 Total Uncert.	228						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit		Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	18.5		1.96	1.26	5.00	0.442	pCi/L			02/19/18 12:53	1
Method: Field Sam	pling - Fie		g It Qualifier	PQL		MDL Unit	t	D	Prepared	Analyzed	Dil Fac

TestAmerica Pensacola

06/02/18 1B:48

9

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Lab Sample ID: 400-154881-14

**Matrix: Water** 

Client Sample ID: MW-12
Date Collected: 06/06/18 16:06
Date Received: 06/08/18 13:50

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 90:01	5
Barium	0.012		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 90:01	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 90:01	5
Boron	0.077		0.050	0.091	mg/L		06/99/18 11:58	06/95/18 90:01	5
Calcium	30		0.95	0.13	mg/L		06/99/18 11:58	06/95/18 90:01	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 90:01	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 90:01	5
Lithium	0.011		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 90:01	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 90:01	5
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 90:01	5

General Chemistry Analyte	Result (	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	460		5.0	3.4	mg/L			06/19/18 13:11	1
Chloride	190		90	6.0	mg/L			02/09/18 08:0B	10
Fluoride	0.12		0.10	0.039	mg/L			02/09/18 11:10	1
Sulfate	2.3	İ	5.0	1.4	mg/L			02/01/18 19:32	1

Method: 9315 - Ra	adium-226 (	(GFPC)	0	T.4.1						
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.05		0.543	0.524	1.00	0.418	pCi/L	06/15/18 16:09	02/11/18 14:93	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	. 970		40 - 110					03/12/18 13:09	05/11/18 14:96	1

Method: 9320 - Rad	dium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-998	0.920	U	0.9B9	0.9B3	1.00	0.422	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	. 970		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	. 970		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium	2.32		0.612	0.644	5.00	0.422	pCi/L		02/19/18 12:53	1
226 + 228										

Method: Field Sampling - Field	d Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.04				SU			06/06/18 16:06	1

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

SDG. ASIT FOIL

Client Sample ID: DUP-01 Date Collected: 06/06/18 06:00 Date Received: 06/08/18 13:50 Lab Sample ID: 400-154881-15

Matrix: Water

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 91:96	5
Barium	0.018		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 91:96	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 91:96	5
Boron	0.037	1	0.050	0.091	mg/L		06/99/18 11:58	06/95/18 91:96	5
Calcium	1.8		0.95	0.13	mg/L		06/99/18 11:58	06/95/18 91:96	5
Chromium	0.0024	I	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 91:96	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 91:96	5
Lithium	0.012		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 91:96	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 91:96	5
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 91:96	5

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	52		5.0	3.4	mg/L			06/19/18 13:11	1
Chloride	11		9.0	0.60	mg/L			02/09/18 02:43	1
vluoride	0.039	U	0.10	0.039	mg/L			02/09/18 11:19	1
Sulfate	1.4	U	5.0	1.4	mg/L			02/01/18 19:32	1

Method: 9315 - Ra	adium-226 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte Radium-226	Result 1.18	Qualifier	( <b>2σ+/-)</b> 0.412	(2σ+/-) 0.430	1.00	MDC 0.369	Unit pCi/L	Prepared 06/15/18 16:09	Analyzed 02/11/18 14:94	Dil Fac
Carrier Ba Carrier	% <b>Yield</b> 101	Qualifier	Limits 40 - 110					<b>Prepared</b> 03/12/18 13:09	Analyzed 05/11/18 14:94	Dil Fac

Method: 9320 - F	Radium-228 (	GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.546		0.399	0.396	1.00	0.488	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	8. 76		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226 Ra	228 - Con	nbined Ra	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.73		0.592	0.540	5.00	0.488	pCi/L		02/19/18 12:53	1

**PQL** 

MDL Unit

Client: Gulf Power Company Project/Site: CCR Smith Plant

Analyte

Carrier

Ba Carrier

Y Carrier

226 + 228

TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

Dil Fac

**Client Sample ID: DUP-02** 

Date Collected: 06/07/18 07:00 Date Received: 06/08/18 13:50

Method: 6020 - Metals (ICP/MS) - Total Recoverable

%Yield Qualifier

. 878

8675

Limits

40 - 110

40 - 110

Result Qualifier

Lab Sample ID: 400-154881-16

Prepared

Prepared

03/12/18 15:09 05/11/18 0. :42

03/12/18 15:09 05/11/18 0. :42

**Matrix: Water** 

Analyzed

Arsenic		0.0012	I	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 93:10	5
Barium		0.062		0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 93:10	5
Beryllium		0.0014	T.	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 93:10	5
Chromium		0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 93:10	5
Cobalt		0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 93:10	5
Lithium		0.0067		0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 93:10	5
7 olybdenum		0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 93:10	5
Selenium		0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 93:10	5
Method: 6020 - Metal	ls (ICP/N	IS) - Total Re	coverabl	e - DL						
Analyte	•	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron		14		1.0	0.49	mg/L		06/99/18 11:58	06/96/18 15:01	100
Calcium		510		5.0	9.5	mg/L		06/99/18 11:58	06/96/18 15:01	100
General Chemistry Analyte		Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids		6100		130	85	mg/L			06/13/18 18:95	1
Chloride		3200		900	60	mg/L			02/09/18 10:46	100
vluoride		0.039	U	0.10	0.039	mg/L			02/09/18 12:33	1
Sulfate		900		150	49	mg/L			02/09/18 15:95	30
: Method: 9315 - Radiu	ım-226 (	GFPC)								
Method: 9315 - Radiu	um-226 (	GFPC)	Count	Total						
Method: 9315 - Radiu	u <b>m-226</b> (		Count Uncert.	Total Uncert.						
Method: 9315 - Radiu	•				RL M	MDC Ur	nit	Prepared	Analyzed	Dil Fac
	•	•	Uncert.	Uncert.		<b>MDC U</b> r .439 pC		Prepared 06/15/18 16:09	Analyzed 02/11/18 14:94	Dil Fac
Analyte	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)				•	•	
Analyte Radium-226	Result	Qualifier  Qualifier	Uncert. (2σ+/-) 1.3B	Uncert. (2σ+/-)				06/15/18 16:09	02/11/18 14:94  Analyzed	1
Analyte Radium-226 Carrier	Result 15.3 %Yield . 878	Qualifier Qualifier	Uncert. (2σ+/-) 1.3B  Limits	Uncert. (2σ+/-)				06/15/18 16:09  Prepared	02/11/18 14:94  Analyzed	1 Dil Fac
Analyte Radium-226  Carrier Ba Carrier	Result 15.3 %Yield . 878	Qualifier Qualifier	Uncert. (2σ+/-) 1.3B  Limits	Uncert. (2σ+/-)				06/15/18 16:09  Prepared	02/11/18 14:94  Analyzed	1 Dil Fac
Analyte Radium-226  Carrier Ba Carrier	Result 15.3 %Yield . 878	Qualifier Qualifier GFPC)	Uncert. (2σ+/-) 1.3B Limits 40 - 110	Uncert. (2σ+/-) 1.B6				06/15/18 16:09  Prepared	02/11/18 14:94  Analyzed	1 Dil Fac
Analyte Radium-226  Carrier Ba Carrier	Result 15.3 %Yield . 878 um-228 (	Qualifier Qualifier GFPC)	Uncert. (2σ+/-) 1.3B  Limits 40 - 110  Count	Uncert. (2σ+/-) 1.B6	1.00 0		Si/L	06/15/18 16:09  Prepared	02/11/18 14:94  Analyzed	1 Dil Fac

Method: Ra226_Ra	1228 - Con	nbined Ra	dium-226 a	nd Radiu	m-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium	34.0		1.26	9.89	5.00	0.559	pCi/L		02/19/18 12:53	1

TestAmerica Pensacola

Analyzed

Dil Fac

6

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

**Client Sample ID: DUP-03** 

Lab Sample ID: 400-154881-17

**Matrix: Water** 

Date Collected: 06/08/18 06:05 Date Received: 06/08/18 13:50

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	-	Result	Qualifier	PQL	MD	L Uni	t	D	Prepared	Analyzed	Dil Fac
Arsenic		0.00064	I	0.0013	0.0004	6 mg/	L	_	06/99/18 11:58	06/95/18 93:14	5
Barium		0.060		0.0095	0.0004	B mg/	L		06/99/18 11:58	06/95/18 93:14	5
Beryllium		0.0015	1	0.0095	0.0003	4 mg/	L		06/99/18 11:58	06/95/18 93:14	5
Chromium		0.0011	U	0.0095	0.001	1 mg/	L		06/99/18 11:58	06/95/18 93:14	5
Cobalt		0.00040	U	0.0095	0.0004	0 mg/	L		06/99/18 11:58	06/95/18 93:14	5
Lithium		0.014		0.0050	0.001	1 mg/	L		06/99/18 11:58	06/95/18 93:14	5
7 olybdenum		0.00085	U	0.015	0.0008	5 mg/	L		06/99/18 11:58	06/95/18 93:14	5
Selenium		0.00094	U	0.0013	0.0009	4 mg/	L		06/99/18 11:58	06/95/18 93:14	5
Method: 6020 - Metal	s (ICP/N	IS) - Total R	ecoverabl	e - DL							
Analyte	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Qualifier	PQL	MD	L Uni	t	D	Prepared	Analyzed	Dil Fac
Boron		9.4		1.0	0.4	9 mg/	L	_	06/99/18 11:58	06/95/18 91:99	100
Calcium		290		5.0	9.	5 mg/	L		06/99/18 11:58	06/95/18 91:99	100
General Chemistry											
Analyte		Result	Qualifier	PQL	MD	L Uni	t	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids		5800		130	8	5 mg/	L	_		06/15/18 15:50	1
Chloride		3200		140	4	9 mg/	L			02/09/18 13:50	20
Fluoride		0.050	1	0.10	0.03	9 mg/	L			02/09/18 18:00	1
Sulfate		530		100	9	8 mg/	L			02/03/18 0B:46	90
Method: 9315 - Radiu	ım-226 (	GFPC)									
		, , , ,	Count	Total							
			Uncert.	Uncert.							
A a la et a	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit		Prepared	Analyzed	Dil Fac
Analyte					4.00	U 388	pCi/L		06/15/18 16:09	02/11/18 14:94	1
Analyte Radium-226	15.1		1.38	1.B4	1.00	0.366	POIL			02/11/10 14.04	
		Qualifier	1.38	1.B4	1.00	0.300	POWE		Prepared	Analyzed	Dil Fac

	`	•	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	14.2		0.B46	1.61	1.00	0.4B1	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	8979		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	29.3		1.62	9.59	5.00	0.4B1	pCi/L		02/19/18 12:53	1

SDG: Ash Pond

Client: Gulf Power Company TestAmerica Job ID: 400-154881-2 Project/Site: CCR Smith Plant

Lab Sample ID: 400-154881-18

Matrix: Water

**Client Sample ID: EB-01** Date Collected: 06/07/18 11:55 Date Received: 06/08/18 13:50

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 18:52	5
Marium	0.0004B	U	0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 18:52	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 18:52	5
Moron	0.091	U	0.050	0.091	mg/L		06/99/18 11:58	06/95/18 18:52	5
Calcium	0.13	U	0.95	0.13	mg/L		06/99/18 11:58	06/95/18 18:52	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 18:52	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 18:52	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 18:52	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 18:52	5
Selenium	0.00051	I	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 18:52	5

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total DissolFed Solids	3.4	U	5.0	3.4	mg/L			06/13/18 18:95	1
Chloride	0.60	U	9.0	0.60	mg/L			02/09/18 0B:05	1
vluoride	0.039	U	0.10	0.039	mg/L			02/09/18 12:32	1
Sulfate	1.4	U	5.0	1.4	mg/L			02/09/18 14:58	1

Method: 9315 - Ra	dium-226 (GFPC)	Count Uncert.	Total Uncert.					
Analyte	Result Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Radium-996	0.060B U	0.12B	0.12B	1.00	0.34B pCi/L	06/15/18 16:09	02/11/18 14:94	1
Carrier	%Yield Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	. 879	40 - 110				03/12/18 13:09	05/11/18 14:94	1

Method: 9320 - Rac	dium-228 (	(GFPC)								
			Count	Total						
	- "		Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL _	MDC		Prepared	Analyzed	Dil Fac
Radium-998	0.0649	U	0.968	0.968	1.00	0.423	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	. 879		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	8472		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226 Ra2	228 - Con	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 996 + 998	0.195	U	0.399	0.399	5.00	0.423	pCi/L		02/19/18 12:53	1

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

**Client Sample ID: FB-01** 

Lab Sample ID: 400-154881-19

Matrix: Water

Date Collected: 06/07/18 11:50 Date Received: 06/08/18 13:50

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Marium	0.0004B	U	0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Moron	0.091	U	0.050	0.091	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Calcium	0.13	U	0.95	0.13	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:09	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 1B:09	5
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 1B:09	5

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total DissolFed Solids	3.4	U	5.0	3.4	mg/L			06/13/18 18:95	1
Chloride	0.60	U	9.0	0.60	mg/L			02/09/18 0B:05	1
vluoride	0.039	U	0.10	0.039	mg/L			02/09/18 12:46	1
Sulfate	1.4	U	5.0	1.4	mg/L			02/09/18 14:58	1

Method: 9315 - Rad	dium-226 (	(GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-996	0.904	U	0.998	0.99B	1.00	0.365	pCi/L	06/15/18 16:09	02/11/18 14:94	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/12/18 13:09	05/11/18 14:94	1

Method: 9320 - R	Radium-228 (	GFPC)								
	·	,	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-998	0.191	U	0.30B	0.30B	1.00	0.536	pCi/L	06/15/18 12:09	02/11/18 0B:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					03/12/18 15:09	05/11/18 0. :42	1
Y Carrier	5271		40 - 110					03/12/18 15:09	05/11/18 0. :42	1

Method: Ra226_Ra2	228 - Con	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 996 + 998	0.395	U	0.384	0.385	5.00	0.536	pCi/L		02/19/18 12:53	1

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

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Client Sample ID: EB-02 Date Collected: 06/08/18 09:17 Lab Sample ID: 400-154881-20 Matrix: Water

Date Received: 06/08/18 13:50

Method: 6020 - Metals (	lethod: 6020 - Metals (ICP/MS) - Total Recoverable											
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Marium	0.0004B	U	0.0095	0.0004B	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Moron	0.091	U	0.050	0.091	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Calcium	0.13	U	0.95	0.13	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 11:58	06/95/18 1B:06	5			
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 11:58	06/95/18 1B:06	5			

	eneral Chemistry nalyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
To	otal DissolFed Solids	3.4	U	5.0	3.4	mg/L			06/15/18 15:50	1
С	nloride	0.60	U	9.0	0.60	mg/L			02/09/18 13:02	1
٧l	uoride	0.039	U	0.10	0.039	mg/L			02/09/18 12:53	1
S	ulfate	1.6	Ì	5.0	1.4	mg/L			02/03/18 08:55	1

Method: 9315 - Rad	dium-226 (	GFPC)	Count Uncert.	Total Uncert.						
Analyte Radium-996	0.0149	Qualifier U	(2σ+/-) 0.152	(2σ+/-) 0.152	1.00 -	MDC 0.335	Unit pCi/L	Prepared 06/15/18 16:09	Analyzed 02/11/18 14:94	Dil Fac
Carrier Ba Carrier	<b>%Yield</b> 102	Qualifier	Limits 40 - 110					<b>Prepared</b> 03/12/18 13:09	Analyzed 05/11/18 14:94	Dil Fac

Method: 9320 - I	Radium-228 (	(GFPC)	Count	Total						
Analyte	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-998	0.106		0.920	0.920	1.00	0.462			02/11/18 0B:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/12/18 15:09	05/11/18 0. :43	1
Y Carrier	8472		40 - 110					03/12/18 15:09	05/11/18 0. :43	1

Method: Ra226_Ra2	228 - Con	nbined Ra	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 996 + 998	0.190	U	0.319	0.319	5.00	0.462	pCi/L		02/19/18 12:53	1

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Lab Sample ID: 400-154881-21

Matrix: Water

Client Sample ID: FB-02
Date Collected: 06/08/18 09:12
Date Received: 06/08/18 13:50

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		06/99/18 19:01	06/99/18 93:10	5
Marium	0.0004B	U	0.0095	0.0004B	mg/L		06/99/18 19:01	06/99/18 93:10	5
Meryllium	0.00034	U	0.0095	0.00034	mg/L		06/99/18 19:01	06/99/18 93:10	5
Moron	0.091	U	0.050	0.091	mg/L		06/99/18 19:01	06/99/18 93:10	5
Calcium	0.13	U	0.95	0.13	mg/L		06/99/18 19:01	06/99/18 93:10	5
Chromium	0.0011	U	0.0095	0.0011	mg/L		06/99/18 19:01	06/99/18 93:10	5
Cobalt	0.00040	U	0.0095	0.00040	mg/L		06/99/18 19:01	06/99/18 93:10	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		06/99/18 19:01	06/99/18 93:10	5
7 olybdenum	0.00085	U	0.015	0.00085	mg/L		06/99/18 19:01	06/99/18 93:10	5
Selenium	0.00094	U	0.0013	0.00094	mg/L		06/99/18 19:01	06/99/18 93:10	5

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total DissolFed Solids	3.4	U	5.0	3.4	mg/L			06/15/18 15:50	1
Chloride	0.60	U	9.0	0.60	mg/L			02/09/18 13:10	1
vluoride	0.039	U	0.10	0.039	mg/L			02/09/18 12:56	1
Sulfate	1.4	U	5.0	1.4	mg/L			02/03/18 0B:09	1

Method: 9315 - Ra	dium-226 (	GFPC)	Count Uncert.	Total Uncert.					
Analyte Radium-226	Result 0.197	Qualifier	(2σ+/-) 0.132	(2σ+/-) 0.13B	1.00	Unit pCi/L	Prepared 06/16/18 19:16	Analyzed 02/11/18 05:45	Dil Fac
Carrier Ba Carrier	<b>%Yield</b> 102	Qualifier	Limits 40 - 110				<b>Prepared</b> 03/13/18 19:13	Analyzed 05/11/18 02:42	Dil Fac

Method: 9320 - Ra	dium-228 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-998	0.0156	U	0.122	0.122	1.00	0.318	pCi/L	06/16/18 13:10	02/10/18 14:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					03/13/18 16:10	05/10/18 14:40	1
Y Carrier	8. 75		40 - 110					03/13/18 16:10	05/10/18 14:40	1

Method: Ra226 Ra2	228 - Con	nbined Ra	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 996 + 998	0.913	U	0.994	0.995	5.00	0.318	pCi/L		02/19/18 12:53	1

TestAmerica Pensacola

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## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

### **Qualifiers**

#### **Metals**

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

#### **General Chemistry**

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Rad	
Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

# Glossary

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit

ML Minimum Level (Dioxin) NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

**RPD** Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 400-154881-7 SDG: Ash Pond

**Client Sample ID: MW-12** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Lab Sample ID: 411-054660-x

**Matrid: Water** 

Date Collecte3: 1/81/806 04:01 Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 19:11	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400962	06/13/18 16:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403169	07/02/18 07:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403221	07/02/18 11:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403150	07/01/18 12:37	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404432	06/06/18 14:10	CDH	TAL PEN

Client Sample ID: MW-1v Lab Sample ID: 411-054660-6 Date Collecte3: 1/81/806 07:12

**Matrid: Water** 

Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 19:56	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400962	06/13/18 16:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403169	07/02/18 07:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403221	07/02/18 11:07	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403150	07/01/18 12:37	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404432	06/06/18 19:02	CDH	TAL PEN

**Client Sample ID: MW-1/** Lab Sample ID: 411-054660-7 Date Collecte3: 1/816806 16:27 **Matrid: Water** 

Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	402495	06/25/18 20:55	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 22:25	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	401134	06/15/18 15:50	VLS	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	403212	07/02/18 09:54	RRC	TAL PEN

### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total/NA	Analysis	SM 4500 F C	_	1	403294	07/02/18 18:04	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:33	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404432	06/08/18 08:29	CDH	TAL PEN

**Client Sample ID: MW-1x** Date Collecte3: 1/816806 01:00

Lab Sample ID: 411-054660-01 **Matrid: Water** Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	25	402495	06/25/18 20:59	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 22:29	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	401134	06/15/18 15:50	VLS	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	403212	07/02/18 09:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 18:07	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:33	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404432	06/08/18 10:11	CDH	TAL PEN

Client Sample ID: MW-16 Date Collecte3: 1/81x806 0v:04 Date 9 eceiRe3: 1/816806 0v:51

Lab Sample ID: 411-054660-00

**Matrid: Water** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	402495	06/25/18 21:04	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 22:34	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		100	403212	07/02/18 10:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:25	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL

# **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

Client Sample ID: MW-16

Lab Sample ID: 411-054660-00

**Matrid: Water** 

Date Collecte3: 1/81x806 0v:04 Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Туре	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404612	06/07/18 13:14	CDH	TAL PEN

Lab Sample ID: 411-054660-02

**Matrid: Water** 

Date Collecte3: 1/81x806 0x:20 Date 9 eceiRe3: 1/816806 0v:51

**Client Sample ID: MW-17** 

_	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	402495	06/25/18 21:08	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 22:38	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	403212	07/02/18 09:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:27	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:25	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404612	06/07/18 17:21	CDH	TAL PEN

**Client Sample ID: MW-01** Lab Sample ID: 411-054660-0v Date Collecte3: 1/81x806 07:46 **Matrid: Water** 

Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	200	402495	06/25/18 21:13	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 23:05	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		60	403212	07/02/18 09:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:25	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404612	06/07/18 19:48	CDH	TAL PEN

TestAmerica Pensacola

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9/7/2018 (Rev. 1)

TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

**Client Sample ID: MW-02** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collecte3: 1/81/806 0/:1/ Date 9 eceiRe3: 1/816806 0v:51 Lab Sample ID: 411-054660-04

**Matrid: Water** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 20:01	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400737	06/12/18 13:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		10	403169	07/02/18 08:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403221	07/02/18 11:10	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403150	07/01/18 12:37	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:23	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL
Total/NA	Analysis	Field Sampling		1	404432	06/06/18 16:06	CDH	TAL PEN

**Client Sample ID: DUP-10** 

Date Collecte3: 1/81/806 1/:11 Date 9 eceiRe3: 1/816806 0v:51

Lab Sample ID: 411-054660-05

**Matrid: Water** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 21:26	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400737	06/12/18 13:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403169	07/02/18 07:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403221	07/02/18 11:12	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403150	07/01/18 12:37	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

**Client Sample ID: DUP-12** 

Date Collecte3: 1/81x806 1x:11 Date 9 eceiRe3: 1/816806 0v:51

Lab Sample ID: 411-054660-0/

**Matrid: Water** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 23:10	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	402689	06/26/18 15:01	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		100	403212	07/02/18 10:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:33	BAB	TAL PEN

TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7 SDG: Ash Pond

Lab Sample ID: 411-054660-0/

**Matrid: Water** 

Client Sample ID: DUP-12
Date Collecte3: 1/ 81x806 1x:11
Date 9 eceiRe3: 1/ 816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total/NA	Analysis	SM 4500 SO4 E		30	403304	07/02/18 15:25	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

Client Sample ID: DUP-1v Lab Sample ID: 411-054660-0x

Date Collecte3: 1/ 816806 1/:15 Matrid: Water

Date 9 eceiRe3: 1/ 816806 0v:51

Γ	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A	DL		402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	402495	06/25/18 21:22	DRE	TAL PEN
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 23:14	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	401134	06/15/18 15:50	VLS	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		70	403252	07/02/18 13:50	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 18:00	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	403365	07/03/18 09:46	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

Client Sample ID: EB-10 Lab Sample ID: 411-054660-06

Date Collecte3: 1/ 81x806 00:55

Date 9 eceiRe3: 1/ 816806 0v:51

_	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 18:57	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403212	07/02/18 09:05	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:37	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403304	07/02/18 14:58	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

TestAmerica Pensacola

**Matrid: Water** 

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**Client Sample ID: FB-10** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collecte3: 1/81x806 00:51 Date 9 eceiRe3: 1/816806 0v:51 Lab Sample ID: 411-054660-07

**Matrid: Water** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 19:02	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	400948	06/13/18 18:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403212	07/02/18 09:05	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:46	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403304	07/02/18 14:58	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374836	07/11/18 09:45	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

Lab Sample ID: 411-054660-21

Matrid: Water

Date Collecte3: 1/816806 17:0x Date 9 eceiRe3: 1/816806 0v:51

**Client Sample ID: EB-12** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402138	06/22/18 11:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402495	06/25/18 19:06	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	401134	06/15/18 15:50	VLS	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403252	07/02/18 13:07	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:53	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403365	07/03/18 08:55	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370670	06/15/18 16:02	JLC	TAL SL
Total/NA	Analysis	9315		1	374837	07/11/18 14:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			370673	06/15/18 17:02	JLC	TAL SL
Total/NA	Analysis	9320		1	374835	07/11/18 09:46	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

Client Sample ID: FB-12

Date Collecte3: 1/ 816806 17:02

Lab Sample ID: 411-054660-20

Matrid: Water

Date 9 eceiRe3: 1/816806 0v:51

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total Recoverable	Prep	3005A			402140	06/22/18 12:01	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	402344	06/22/18 23:10	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	401134	06/15/18 15:50	VLS	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	403252	07/02/18 13:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403294	07/02/18 17:56	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403365	07/03/18 09:02	RRC	TAL PEN
Total/NA	Prep	PrecSep-21			370790	06/16/18 12:16	JLC	TAL SL
Total/NA	Analysis	9315		1	374836	07/11/18 05:45	RTM	TAL SL

TestAmerica Pensacola

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# **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-7

SDG: Ash Pond

**Client Sample ID: FB-12** 

Date Collecte3: 1/816806 17:02 Date 9 eceiRe3: 1/816806 0v:51

Lab Sample ID: 411-054660-20

**Matrid: Water** 

	Batch	Batch		Dilution	Batch	Prepare3		
Prep Type	Type	Metho3	9 un	Factor	Number	or Analyze3	Analyst	Lab
Total/NA	Prep	PrecSep_0			370793	06/16/18 13:10	JLC	TAL SL
Total/NA	Analysis	9320		1	374666	07/10/18 14:40	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	375258	07/12/18 17:53	RTM	TAL SL

#### Laboratory 9 eferences:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001 TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

**Metals** 

**Prep Batch: 402138** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total Recoverable	Water	3005A	
400-154881-8	L W-03	Total Recoverable	Water	3005A	
400-154881-B	L W-0^	Total Recoverable	Water	3005A	
400-154881-B - Dk	L W-0^	Total Recoverable	Water	3005A	
400-154881-10 - Dk	L W-02	Total Recoverable	Water	3005A	
400-154881-10	L W-02	Total Recoverable	Water	3005A	
400-154881-11	L W-08	Total Recoverable	Water	3005A	
400-154881-11 - Dk	L W-08	Total Recoverable	Water	3005A	
400-154881-1M- Dk	L W-0B	Total Recoverable	Water	3005A	
400-154881-1M	L W-0B	Total Recoverable	Water	3005A	
400-154881-13	L W-10	Total Recoverable	Water	3005A	
400-154881-13 - Dk	L W-10	Total Recoverable	Water	3005A	
400-154881-14	L W-1M	Total Recoverable	Water	3005A	
400-154881-15	D7 P-01	Total Recoverable	Water	3005A	
400-154881-1^ - Dk	D7 P-0M	Total Recoverable	Water	3005A	
400-154881-1^	D7 P-0M	Total Recoverable	Water	3005A	
400-154881-12 - Dk	D7 P-03	Total Recoverable	Water	3005A	
400-154881-12	D7 P-03	Total Recoverable	Water	3005A	
400-154881-18	x 6-01	Total Recoverable	Water	3005A	
400-154881-1B	N6-01	Total Recoverable	Water	3005A	
400-154881-MD	x 6-0M	Total Recoverable	Water	3005A	
L 6 400-40M138/1-A 95	L ethod 6 lanU	Total Recoverable	Water	3005A	
kCS 400-40M138/MA	kab Control Sample	Total Recoverable	Water	3005A	
400-154881-2 L S	L W-0M	Total Recoverable	Water	3005A	
400-154881-2 L SD	L W-0M	Total Recoverable	Water	3005A	

**Prep Batch: 402140** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-MI	N6-0M	Total Recoverable	Water	3005A	
L 6 400-40M140/1-A 95	L ethod 6 lanU	Total Recoverable	Water	3005A	
kCS 400-40M140/MA	kab Control Sample	Total Recoverable	Water	3005A	
400-1551M1-6-1-6 L S 95	L atriESpiUe	Total Recoverable	Water	3005A	
400-1551M1-6-1-C L SD 95	L atriESpiUe Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 402344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-MI	N6-0M	Total Recoverable	Water	^0M0	40M140
L 6 400-40M140/1-A 95	L ethod 6 lanU	Total Recoverable	Water	^0M0	40M140
kCS 400-40MI40/MA	kab Control Sample	Total Recoverable	Water	^0M0	40M140
400-1551M1-6-1-6 L S 95	L atriESpiUe	Total Recoverable	Water	^0M0	40M140
400-1551M1-6-1-C L SD 95	L atriESpiUe Duplicate	Total Recoverable	Water	^0M0	40M140

**Analysis Batch: 402495** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total Recoverable	Water	^0M0	40M138
400-154881-8	L W-03	Total Recoverable	Water	^0M0	40M138
400-154881-B - Dk	L W-0^	Total Recoverable	Water	^0M0	40M138
400-154881-B	L W-0^	Total Recoverable	Water	^0M0	40M138
400-154881-10 - Dk	L W-02	Total Recoverable	Water	^0M0	40M138
400-154881-10	L W-02	Total Recoverable	Water	^0M0	40M138
400-154881-11 - Dk	L W-08	Total Recoverable	Water	^0M0	40M138

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TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

**Metals (Continued)** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

**Analysis Batch: 402495 (Continued)** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-11	L W-08	Total Recoverable	Water	^0M0	40M138
400-154881-1M- Dk	L W-0B	Total Recoverable	Water	^0M0	40M138
400-154881-1M	L W-0B	Total Recoverable	Water	^0M0	40M138
400-154881-13 - Dk	L W-10	Total Recoverable	Water	^0M0	40M138
400-154881-13	L W-10	Total Recoverable	Water	^0M0	40M138
400-154881-14	L W-1M	Total Recoverable	Water	^0M0	40M138
400-154881-15	D7 P-01	Total Recoverable	Water	^0M0	40M138
400-154881-1^	D7 P-0M	Total Recoverable	Water	^0M0	40M138
400-154881-12 - Dk	D7 P-03	Total Recoverable	Water	^0M0	40M138
400-154881-12	D7 P-03	Total Recoverable	Water	^0M0	40M138
400-154881-18	x 6-01	Total Recoverable	Water	^0M0	40M138
400-154881-1B	N6-01	Total Recoverable	Water	^0M0	40M138
400-154881-MD	x 6-0M	Total Recoverable	Water	^0M0	40M138
L 6 400-40M138/1-A 95	L ethod 6 lanU	Total Recoverable	Water	^0M0	40M138
kCS 400-40M138/MA	kab Control Sample	Total Recoverable	Water	^0M0	40M138
400-154881-2 L S	L W-0M	Total Recoverable	Water	^0M0	40M138
400-154881-2 L SD	L W-0M	Total Recoverable	Water	^0M0	40M138

**Analysis Batch: 402689** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-1^ - Dk	D7 P-0M	Total Recoverable	Water	^0M0	40M138

# **General Chemistry**

# **Analysis Batch: 400737**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-14	L W-1M	Total/F A	Water	SL M540C	
400-154881-15	D7 P-01	Total/FA	Water	SL M540C	
L 6 400-400232/1	L ethod 6 lanU	Total/FA	Water	SL M540C	
kCS 400-400232/M	kab Control Sample	Total/FA	Water	SL M540C	
400-154280-C-3 D7	Duplicate	Total/FA	Water	SL M540C	

#### Analysis Batch: 400948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-11	L W-08	Total/FA	Water	SL M540C	
400-154881-1M	L W-0B	Total/FA	Water	SL M540C	
400-154881-13	L W-10	Total/FA	Water	SL M540C	
400-154881-1^	D7 P-0M	Total/FA	Water	SL M540C	
400-154881-18	x 6-01	Total/FA	Water	SL M540C	
400-154881-1B	N6-01	Total/FA	Water	SL M540C	
L 6 400-400B48/1	L ethod 6 lanU	Total/FA	Water	SL M540C	
kCS 400-400B48/M	kab Control Sample	Total/FA	Water	SL M540C	
400-1542^1-A-34 D7	Duplicate	Total/FA	Water	SL M540C	
400-154880-6-3 D7	Duplicate	Total/FA	Water	SL M540C	

# Analysis Batch: 400962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/F A	Water	SL M540C	
400-154881-8	L W-03	Total/FA	Water	SL M540C	
L 6 400-400B <sup>^</sup> M1	L ethod 6 lanU	Total/FA	Water	SL M540C	

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

# **General Chemistry (Continued)**

# **Analysis Batch: 400962 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
kCS 400-400B^MM	kab Control Sample	Total/FA	Water	SL M540C	
400-1542^1-A-MB D7	Duplicate	Total/FA	Water	SL M540C	

#### **Analysis Batch: 401134**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-B	L W-0^	Total/FA	Water	SL M540C	
400-154881-10	L W-02	Total/FA	Water	SL M540C	
400-154881-12	D7 P-03	Total/FA	Water	SL M540C	
400-154881-MD	x 6-0M	Total/FA	Water	SL M540C	
400-154881-MI	N6-0M	Total/FA	Water	SL M540C	
L 6 400-401134/1	L ethod 6IanU	Total/FA	Water	SL M540C	
kCS 400-401134/M	kab Control Sample	Total/FA	Water	SL M540C	
400-154B0B-A-5 D7	Duplicate	Total/FA	Water	SL M540C	
400-154B25-A-2 D7	Duplicate	Total/FA	Water	SL M540C	

# **Analysis Batch: 403150**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/FA	Water	SL 4500 SO4 x	
400-154881-8	L W-03	Total/FA	Water	SL 4500 SO4 x	
400-154881-14	L W-1M	Total/FA	Water	SL 4500 SO4 x	
400-154881-15	D7 P-01	Total/FA	Water	SL 4500 SO4 x	
L 6 400-403150/^	L ethod 6lanU	Total/FA	Water	SL 4500 SO4 x	
kCS 400-403150/2	kab Control Sample	Total/FA	Water	SL 4500 SO4 x	
L Rk 400-403150/3	kab Control Sample	Total/FA	Water	SL 4500 SO4 x	
400-15535^-6-10 L S	L atriESpi <b>∪</b> e	Total/FA	Water	SL 4500 SO4 x	
400-15535^-6-10 L SD	L atriESpiUe Duplicate	Total/FA	Water	SL 4500 SO4 x	

#### Analysis Batch: 403169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/F A	Water	SL 4500 Cl- x	-
400-154881-8	L W-03	Total/F A	Water	SL 4500 Cl- x	
400-154881-14	L W-1M	Total/F A	Water	SL 4500 Cl- x	
400-154881-15	D7 P-01	Total/FA	Water	SL 4500 Cl- x	
L 6 400-4031^B/^	L ethod 6 lanU	Total/FA	Water	SL 4500 Cl- x	
kCS 400-4031^B/2	kab Control Sample	Total/FA	Water	SL 4500 Cl- x	
L Rk 400-4031^B/3	kab Control Sample	Total/FA	Water	SL 4500 Cl- x	
400-154881-2 L S	L W-0M	Total/F A	Water	SL 4500 Cl- x	
400-154881-2 L SD	L W-0M	Total/FA	Water	SL 4500 Cl- x	

#### **Analysis Batch: 403212**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-B	L W-0^	Total/FA	Water	SL 4500 Cl- x	
400-154881-10	L W-02	Total/FA	Water	SL 4500 Cl- x	
400-154881-11	L W-08	Total/FA	Water	SL 4500 Cl- x	
400-154881-1M	L W-0B	Total/FA	Water	SL 4500 Cl- x	
400-154881-13	L W-10	Total/FA	Water	SL 4500 Cl- x	
400-154881-1^	D7 P-0M	Total/FA	Water	SL 4500 Cl- x	
400-154881-18	x6-01	Total/FA	Water	SL 4500 Cl- x	
400-154881-1B	N6-01	Total/FA	Water	SL 4500 Cl- x	
400-154880-6-4 L S	L atriESpiUe	Total/FA	Water	SL 4500 Cl- x	
400-154880-6-4 L SD	L atriESpiUe Duplicate	Total/FA	Water	SL 4500 Cl- x	

TestAmerica Pensacola

# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Analysis Batch: 403221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/FA	Water	SL 4500 N C	
400-154881-8	L W-03	Total/FA	Water	SL 4500 N C	
400-154881-14	L W-1M	Total/FA	Water	SL 4500 N C	
400-154881-15	D7 P-01	Total/FA	Water	SL 4500 N C	
L 6 400-403MM1/3	L ethod 6IanU	Total/FA	Water	SL 4500 N C	
kCS 400-403MM1/4	kab Control Sample	Total/FA	Water	SL 4500 N C	
400-15424M6-4 L S	L atriESpiUe	Total/FA	Water	SL 4500 N C	
400-15424M6-4 L SD	L atriESpiUe Duplicate	Total/FA	Water	SL 4500 N C	
400-154881-2 D7	L W-0M	Total/FA	Water	SL 4500 N C	

Analysis Batch: 403252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-12	D7 P-03	Total/FA	Water	SL 4500 Cl- x	
400-154881-M0	x 6-0M	Total/FA	Water	SL 4500 Cl- x	
400-154881-MI	N6-0M	Total/FA	Water	SL 4500 Cl- x	
L 6 400-403M5M/^	L ethod 6IanU	Total/FA	Water	SL 4500 Cl- x	
kCS 400-403M5M2	kab Control Sample	Total/FA	Water	SL 4500 Cl- x	
400-1553B3-D-1 L S	L atriESpiUe	Total/FA	Water	SL 4500 Cl- x	
400-1553B3-D-1 L SD	L atriESpiUe Duplicate	Total/FA	Water	SL 4500 Cl- x	

Analysis Batch: 403294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-B	L W-0^	Total/F A	Water	SL 4500 N C	
400-154881-10	L W-02	Total/F A	Water	SL 4500 N C	
400-154881-11	L W-08	Total/FA	Water	SL 4500 N C	
400-154881-1M	L W-0B	Total/FA	Water	SL 4500 N C	
400-154881-13	L W-10	Total/FA	Water	SL 4500 N C	
400-154881-1^	D7 P-0M	Total/FA	Water	SL 4500 N C	
400-154881-12	D7 P-03	Total/FA	Water	SL 4500 N C	
400-154881-18	x 6-01	Total/FA	Water	SL 4500 N C	
400-154881-1B	N6-01	Total/FA	Water	SL 4500 N C	
400-154881-M0	x 6-0M	Total/FA	Water	SL 4500 N C	
400-154881-M1	N6-0M	Total/FA	Water	SL 4500 N C	
L 6 400-403MB4/3	L ethod 6lanU	Total/FA	Water	SL 4500 N C	
kCS 400-403MB4/4	kab Control Sample	Total/FA	Water	SL 4500 N C	
400-154881-1B D7	N6-01	Total/FA	Water	SL 4500 N C	

Analysis Batch: 403304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-B	L W-0^	Total/FA	Water	SL 4500 SO4 x	
400-154881-10	L W-02	Total/F A	Water	SL 4500 SO4 x	
400-154881-11	L W-08	Total/F A	Water	SL 4500 SO4 x	
400-154881-1M	L W-0B	Total/FA	Water	SL 4500 SO4 x	
400-154881-13	L W-10	Total/F A	Water	SL 4500 SO4 x	
400-154881-1^	D7 P-0M	Total/F A	Water	SL 4500 SO4 x	
400-154881-18	x 6-01	Total/FA	Water	SL 4500 SO4 x	
400-154881-1B	N6-01	Total/FA	Water	SL 4500 SO4 x	

Analysis Batch: 403365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-12	D7 P-03	Total/FA	Water	SL 4500 SO4 x	
400-154881-M0	x 6-0M	Total/FA	Water	SL 4500 SO4 x	
400-154881-MI	N6-0M	Total/FA	Water	SL 4500 SO4 x	

TestAmerica Pensacola

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TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Client: Gulf Power Company Project/Site: CCR Smith Plant

# **General Chemistry (Continued)**

# **Analysis Batch: 403365 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
L 6 400-4033^5/^	L ethod 6lanU	Total/FA	Water	SL 4500 SO4 x	
kCS 400-4033^5/2	kab Control Sample	Total/FA	Water	SL 4500 SO4 x	
L Rk 400-4033^5/3	kab Control Sample	Total/FA	Water	SL 4500 SO4 x	
400-154B0B-A-1 L S	L atriESpiUe	Total/FA	Water	SL 4500 SO4 x	
400-154B0B-A-1 L SD	L atriESpiUe Duplicate	Total/FA	Water	SL 4500 SO4 x	

# Rad

# **Prep Batch: 370670**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/FA	Water	PrecSep-MI	
400-154881-8	L W-03	Total/FA	Water	PrecSep-MI	
400-154881-B	L W-0^	Total/FA	Water	PrecSep-MI	
400-154881-10	L W-02	Total/FA	Water	PrecSep-MI	
400-154881-11	L W-08	Total/FA	Water	PrecSep-MI	
400-154881-1M	L W-0B	Total/FA	Water	PrecSep-MI	
400-154881-13	L W-10	Total/FA	Water	PrecSep-MI	
400-154881-14	L W-1M	Total/FA	Water	PrecSep-MI	
400-154881-15	D7 P-01	Total/FA	Water	PrecSep-MI	
400-154881-1^	D7 P-0M	Total/FA	Water	PrecSep-MI	
400-154881-12	D7 P-03	Total/FA	Water	PrecSep-MI	
400-154881-18	x 6-01	Total/FA	Water	PrecSep-MI	
400-154881-1B	N6-01	Total/FA	Water	PrecSep-MI	
400-154881-M0	x 6-0M	Total/FA	Water	PrecSep-MI	
L 6 1^0-320^20/MB-A	L ethod 6lanU	Total/FA	Water	PrecSep-MI	
kCS 1^0-320^20/1-A	kab Control Sample	Total/FA	Water	PrecSep-MI	
kCSD 1^0-320^20/MA	kab Control Sample Dup	Total/FA	Water	PrecSep-MI	

#### **Prep Batch: 370673**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/FA	Water	PrecSep_0	
400-154881-8	L W-03	Total/FA	Water	PrecSep_0	
400-154881-B	L W-0^	Total/FA	Water	PrecSep_0	
400-154881-10	L W-02	Total/FA	Water	PrecSep_0	
100-154881-11	L W-08	Total/FA	Water	PrecSep_0	
400-154881-1M	L W-0B	Total/FA	Water	PrecSep_0	
400-154881-13	L W-10	Total/FA	Water	PrecSep_0	
400-154881-14	L W-1M	Total/FA	Water	PrecSep_0	
400-154881-15	D7 P-01	Total/FA	Water	PrecSep_0	
400-154881-1^	D7 P-0M	Total/FA	Water	PrecSep_0	
100-154881-12	D7 P-03	Total/FA	Water	PrecSep_0	
400-154881-18	x 6-01	Total/FA	Water	PrecSep_0	
400-154881-1B	N6-01	Total/FA	Water	PrecSep_0	
400-154881-MD	x 6-0M	Total/FA	Water	PrecSep_0	
L 6 1^0-320^23/MB-A	L ethod 6IanU	Total/FA	Water	PrecSep_0	
kCS 1^0-320^23/1-A	kab Control Sample	Total/FA	Water	PrecSep_0	
kCSD 1^0-320^23/MA	kab Control Sample Dup	Total/FA	Water	PrecSep 0	

# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-154881-2

SDG: Ash Pond

# Rad (Continued)

# **Prep Batch: 370790**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-MI	N6-0M	Total/FA	Water	PrecSep-MI	
L 6 1^0-3202B0/M8-A	L ethod 6IanU	Total/FA	Water	PrecSep-M1	
kCS 1^0-3202B0/1-A	kab Control Sample	Total/FA	Water	PrecSep-M1	
kCSD 1^0-3202B0/MA	kab Control Sample Dup	Total/FA	Water	PrecSep-M1	

#### **Prep Batch: 370793**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
400-154881-MI	N6-0M	Total/F A	Water	PrecSep_0
L 6 1^0-3202B3/M8-A	L ethod 6 lanU	Total/FA	Water	PrecSep_0
kCS 1^0-3202B3/1-A	kab Control Sample	Total/FA	Water	PrecSep_0
kCSD 1^0-3202B3/MA	kab Control Sample Dup	Total/FA	Water	PrecSep_0

# Field Service / Mobile Lab

# **Analysis Batch: 404432**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-2	L W-0M	Total/FA	Water	Nield Sampling	
400-154881-8	L W-03	Total/FA	Water	Nield Sampling	
400-154881-B	L W-0^	Total/FA	Water	Nield Sampling	
400-154881-10	L W-02	Total/FA	Water	Nield Sampling	
400-154881-14	L W-1M	Total/FA	Water	Nield Sampling	

# Analysis Batch: 404612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-154881-11	L W-08	Total/FA	Water	Nield Sampling	
400-154881-1M	L W-0B	Total/FA	Water	Nield Sampling	
400-154881-13	L W-10	Total/FA	Water	Nield Sampling	

TestAmerica Job ID: 400-154881-C

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# Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-402138/1-A ^5 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total Recoverable** Analysis Batch: 402495 Prep Batch: 402138

5F18 18:44	oil Fac
	5
5 <b>F</b> 18 18:44	5
5F18 18:44	5
5F18 18:44	5
5F18 18:44	5
5F18 18:44	5
5F18 18:44	5
5F18 18:44	5
5F18 18:44	5
5F18 18:44	5
EEEE	558 18:44 558 18:44 558 18:44 558 18:44 558 18:44 558 18:44 568 18:44 568 18:44 568 18:44

Lab Sample ID: LCS 400-402138/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable** Analysis Batch: 402495 Prep Batch: 402138 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit D %Rec ArseGc 060500 060515 mLR2 10g 80 - 190 Marif m 060500 06048C mLR2 BC 80 - 190

MerSmif m 060500 06048U mLR2 BC 80 - 190 MoroG 06100 060BCC mLF2 B8 80 - 190 I ancif m 5600 46B4 mLF2 BB 80 - 190 060500 mLF2 100 I dromif m 060509 80 - 190I obant 060500 06050U mLF2 101 80 - 190 2itdif m 060500 0605g1 mLF2 10U 80 - 190 7 on Sbj eGf m 060500 060488 mLF2 B8 80 - 190 hereGf m 060500 060595 mLF2 105 80 - 190

Lab Sample ID: 400-154881-7 MS Client Sample ID: MW-02 **Matrix: Water Prep Type: Total Recoverable** Analysis Batch: 402495 **Prep Batch: 402138** 

Analysis Batch: 402495	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
ArseGc	0 <b>6</b> 0004U	3	060500	0605g4		mLF2		10C	C5 - 195
Marif m	0601C		060500	060UCB		mLF2		109	C5 <sub>-</sub> 195
MerSmif m	0 <b>6</b> 000g4	3	060500	0604B4		mLF2		BB	C5 <sub>-</sub> 195
MbroG	0609C	I	06100	061g1		mLF2		104	C5 - 195
I ancif m	g9		5600	g8 <b>6</b> 0		mLF2		115	C5 <sub>-</sub> 195
I dromif m	0 <b>6</b> 009B		060500	060544		mLF2		10g	C5 <sub>-</sub> 195
I obant	0600040	3	060500	060598		mLF2		10U	C5 <sub>-</sub> 195
2itdif m	060051		060500	060518		mLF2		Bg	C5 <sub>-</sub> 195
7 onSojeGfm	0600085	3	060500	0 <b>6</b> 048g		mLF2		BC	C5 - 195
heneOff m	0600094	3	060500	06051B		mLF2		104	C5 <sub>-</sub> 195

Lab Sample ID: 400-15488	Client Sample ID: MW-02										
Matrix: Water							Р	rep Ty	oe: Total F	Recove	rable
Analysis Batch: 402495									Prep Ba	atch: 40	2138
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
ArseGc	060004U	3	060500	060598		mLF2		10U	C5 <sub>-</sub> 195	1	90

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InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wra Gt TestAmerica Job ID: 400-154881-C

hDu: Asd woQ

# Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-154881 Matrix: Water	-7 MSD						Р		nt Sample ID: MW-02 be: Total Recoverable			
Analysis Batch: 402495								. ,,	Prep Ba		02138	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Marif m	0601C		060500	060U4C		mLF2		B5	C5 <sub>-</sub> 195	5	90	
MerSmif m	0 <b>6</b> 000g4	3	060500	060480		mLF2		BU	C5 <sub>-</sub> 195	g	90	
MoroG	0 <b>6</b> 09C	I	06100	0619B		mLF2		109	C5 <sub>-</sub> 195	1	90	
I ancif m	g9		5600	g <b>C</b> 60		mLF2		BU	C5 - 195	9	90	
I dromif m	0 <b>6</b> 009B		060500	060549		mLF2		10g	C5 <sub>-</sub> 195	0	90	
I obarti	0600040	3	060500	060591		mLF2		104	C5 - 195	9	90	
2itdif m	060051		060500	060514		mLF2		Bg	C5 <sub>-</sub> 195	1	90	
7 on Stoje Gfm	0600085	3	060500	060480		mLF2		BU	C5 <sub>-</sub> 195	1	90	
hereGf m	0600094	3	060500	060591		mLF2		104	C5 - 195	0	90	

Lab Sample ID: MB 400-402140/1-A ^5

**Matrix: Water** 

Client Sample ID: Method Blank **Prep Type: Total Recoverable** 

Analysis Batch: 402344 **Prep Batch: 402140** MB MB Result Qualifier POI MDL Unit Dil Fac Analyte Prepared Analyzed

Allalyte	Nesuit	Qualifier	FQL	IVIDE	OIIIL	 riepaieu	Allalyzeu	Diriac
ArseGc	0@004U	3	06001g	060004U	mLF2	 0UR99R18 19:01	0UR99F18 90:gg	5
Marif m	0 <b>6</b> 0004B	3	060095	060004B	mLF2	0UR99R18 19:01	0 <b>UR</b> 99R18 90:gg	5
MerSminf m	0 <b>6</b> 000g4	3	060095	06000g4	mLF2	0UR99R18 19:01	0 <b>UR</b> 99F18 90:gg	5
MoroG	06091	3	06050	06091	mLF2	0UR99R18 19:01	0UR99F18 90:gg	5
l ancif m	061 g	3	0695	061 g	mLF2	0UR99R18 19:01	0UR99F18 90:gg	5
I dromif m	060011	3	060095	060011	mLF2	0UR99R18 19:01	0UR99F18 90:gg	5
l obarti	0@0040	3	060095	0600040	mLF2	0UR99R18 19:01	0UR99F18 90:gg	5
2itdif m	060011	3	060050	060011	mLF2	0UR99R18 19:01	0UR99F18 90:gg	5
7 on Soje Gfm	0@0085	3	06015	0600085	mLF2	0UR99R18 19:01	0UR99F18 90:gg	5
heneGfm	0600094	3	06001g	0600094	mLF2	OUR99F18 19:01	0UR99F18 90:gg	5

Lab Sample ID: LCS 400-402140/2-A

06095

**Matrix: Water** 

Marif m

Analysis Batch: 402344

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** Prep Batch: 402140

Analysis Datell. 402344	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
ArseGc	060500	0604C4		mLF2		B5	80 - 190
Marif m	060500	060485		mLF2		BC	80 - 190
MerSmif m	060500	0604B5		mLF2		BB	80 - 190
MoroG	06100	060B94		mLF2		В9	80 - 190
I ancif m	5600	460U		mLF2		B5	80 - 190
I dromif m	060500	0604C4		mLF2		B5	80 - 190
I obant	060500	0604BC		mLF2		BB	80 - 190
2itdif m	060500	0604BC		mLF2		BB	80 - 190
7 omSojeGfm	060500	0 <b>6</b> 050U		mLF2		101	80 - 190
hereGf m	060500	060595		mLF2		105	80 - 190

Lab Sample ID: 400-155121-B-1-B MS ^5 Matrix: Water											Matrix Spike Recoverable
	Analysis Batch: 402344									Prep Ba	tch: 402140
		Sample	Sample	Spike	MS	MS				%Rec.	
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	ArseGc	060004U	3	060500	060489		mLF2		BU	C5 <sub>-</sub> 195	

060Cg1

mLF2

060500

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C5 <sub>-</sub> 195

BC

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TestAmerica Job ID: 400-154881-C

**Client Sample ID: Matrix Spike Duplicate** 

hDu: Asd woG

# Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-155121-B-1-B MS ^5 Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 402344 Prep Batch: 402140** MS MS Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits MerSmif m 06000g4 3 060500 060518 mLF2 C5 <sub>-</sub> 195 104 MoroG 06091 3 06100 060880 mLF2 88 C5 - 195 I arcif m 5600 B655 mLR2 RI J 468 C5 - 195

I dromif m 0600g8 060500 060590 mLR2 BU C5 - 195 C5 - 195 Lobart 0600040 3 060500 060510 mLF2 109 2itdif m 0600U8 060500 060598 mLF2 B9 C5 - 195 7 on SbjeGfm 060019 I 060500 06051B mLR2 101 C5 - 195 hereOf m 060500 0605UC mLF2 C5 - 195 06000CU I 119

Lab Sample ID: 400-155121-B-1-C MSD ^5

**Matrix: Water Prep Type: Total Recoverable** Analysis Ratch: 402344 Prep Batch: 402140

Allalysis Dalcil. 402344									Lieh De	illi. 40	12 140
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
ArseGc	060004U	3	060500	060480		mLF2		BU	C5 <sub>-</sub> 195	0	90
Marif m	06095		060500	060Cg9		mLF2		BC	C5 <sub>-</sub> 195	0	90
MerSmif m	0 <b>6</b> 000g4	3	060500	0 <b>6</b> 059B		mLF2		10U	C5 - 195	9	90
MoroG	06091	3	06100	06109		mLF2		109	C5 <sub>-</sub> 195	15	90
l ancif m	468		5600	B64g		mLF2		Bg	C5 - 195	1	90
I dromif m	0 <b>6</b> 00g8		060500	06059C		mLF2		B8	C5 <sub>-</sub> 195	1	90
I obarti	0600040	3	060500	060519		mLF2		109	C5 <sub>-</sub> 195	0	90
2itdif m	0600U8		060500	060599		mLF2		B1	C5 - 195	1	90
7 onSojeGfm	060019	1	060500	060501		mLF2		B8	C5 <sub>-</sub> 195	g	90
heneGf m	0 <b>6</b> 000CU	I	060500	0605g5		mLF2		10U	C5 - 195	U	90

# Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-400737/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 400737

	IVID	IVID							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TotanDissorvej horijs	g64	3	560	g <b>6</b> 4	mLF2			0UR19R18 1g:11	1

Lab Sample ID: LCS 400-400737/2 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 400737** 

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits TotanDissonvej honij s 9Bg 9B0 mLR2 BB C8 <sub>-</sub> 199

Lab Sample ID: 400-154780-C-3 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 400737

,a. <b>,</b>	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
TotanDissorvej horijs	gΩ		 gU8		mLF2		 0	5

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TestAmerica Job ID: 400-154881-C

hDu: Asd woG

# Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 400-400948/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 400948

MR MR Result Qualifier PQL MDL Unit Analyzed Dil Fac Analyte Prepared 560 TotanDissonvej honijs g<del>64</del> 3 g64 mLF2 0URI gRI 8 18:95

Lab Sample ID: LCS 400-400948/2 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 400948** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec 9Ba TotanDissonvej honijs 9UU mLF2 B1 C8 - 199

Lab Sample ID: 400-154761-A-34 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 400948

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier RPD Limit Analyte Unit TotanDissonvej horijs mLF2 g90 g99

Lab Sample ID: 400-154880-B-3 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 400948

Sample Sample DU DU RPD Result Qualifier Result Qualifier Unit **RPD** Limit TotanDissonvej honijs 000 UBU mLF2

Lab Sample ID: MB 400-400962/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 400962** 

MR MR

PQL Analyte Result Qualifier **MDL** Unit Analyzed Dil Fac Prepared 560 g64 mLF2 0URIgR18 1U:4g TotanDissonvej honij s g64 3

Lab Sample ID: LCS 400-400962/2 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 400962

Spike LCS LCS %Rec. Added Result Qualifier Unit Analyte %Rec Limits 9Bg TotanDissonvej honij s 954 mLF2 8C C8 <sub>-</sub> 199

Lab Sample ID: 400-154761-A-23 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 400962

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier RPD Analyte Unit Limit TotanDissonvej honijs g10 g10 mLR2

Lab Sample ID: MB 400-401134/1 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 401134

MB MB Result Qualifier PQL MDL Unit D Prepared Analyzed Dil Fac TotanDissonvej honijs 560 0UR 5R 8 15:50 q64 mLF2

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**Prep Type: Total/NA** 

**Client Sample ID: Lab Control Sample** 

Lab Sample ID: LCS 400-401134/2

**Matrix: Water** 

Analysis Batch: 401134

InieCt: ufnPwoperIomyaCS

wro/ectRite: II. hmitd wra Gt

١		Spike	LCS LCS			%Rec.
	Analyte	Added R	esult Qualifier	Unit D	%Rec	Limits
	TotanDissonvej honijs	9Bg	954	mLF2	8C	C8 - 199

Lab Sample ID: 400-154909-A-5 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 401134

, ,	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
TotanDissonvej honijs	5U0		 55U		mLR2			0	5

Lab Sample ID: 400-154975-A-7 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 401134

7 man, 610 = 410 m 10 110 1	Sample	Sample	DU	DU					RPD
Analyte	•	Qualifier		Qualifier	Unit	D		RPD	Limit
TotanDissorvej honijs	58	<del></del>	 5860		mLF2		 	0	5

Method: SM 4500 CI- E - Chloride, Total

Lab Sample ID: MB 400-403169/6 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 403169

	IVID	IVID							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
l dnorij e	06.00	3	960		mLF2			0CR09F18 0C:gg	1

Lab Sample ID: LCS 400-403169/7 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 403169

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I dmrii e	0060	n164		ml F2	_	105	B0 - 110	

Lab Sample ID: MRL 400-403169/3 **Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 403169** 

	<b>Spike</b>	WIKL	MKL				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I drorij e	9600	1688	I	mLF2		B4	50 - 150	

Lab Sample ID: 400-154881-7 MS Client Sample ID: MW-02 **Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 403169

	Sample Sample	Spike	MS MS				%Rec.
Analyte	Result Qualifier	Added	Result Qualifier	Unit	D	%Rec	Limits
I drorij e	1g	1060	9g&J	mLR2	_	105	Cg <sub>-</sub> 190

InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wra Gt TestAmerica Job ID: 400-154881-C

hDu: Asd woQ

# Method: SM 4500 CI- E - Chloride, Total (Continued)

Analysis Batch: 403169	
Matrix: Water	Prep Type: Total/NA
Lab Sample ID: 400-154881-7 MSD	Client Sample ID: MW-02

	Sample	Sample	эріке	INIOD	MOD				%Rec.		KPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
l dnorij e	1g		1060	9g64		mLF2		109	Cg <sub>-</sub> 190	1	8	

Lab Sample ID: 400-154880-B-4 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403212

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I drorij e	4g		1060	4B68	Jg	mLF2		C1	Cg - 190	

Lab Sample ID: 400-154880-B-4 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403212

rinaly old Date in 100212	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
l dnorij e	4g		1060	4B65	Jg	mLF2		UC	Cg <sub>-</sub> 190	1	8

Lab Sample ID: MB 400-403252/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 403252** 

	IVID	IVID								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
I dnorij e	06.00	3	960	06.00	mLF2	 		00R09F18 1g:0C	1	

Lab Sample ID: LCS 400-403252/7 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** Analysis Batch: 403252

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit D %Rec Limits I drorij e g060 g96B mLF2 B0 - 110 110

Lab Sample ID: 400-155393-D-1 MS Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 403252** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I drorii e	<u> </u>		1060	1464		mLF2	_	10C	Ca - 190	 

Client Sample ID: Matrix Spike Duplicate Lab Sample ID: 400-155393-D-1 MSD

**Matrix: Water** 

Analysis Batch: 403252

•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
I drorij e	g6C		1060	1465		mLF2		108	Cq - 190	0	8

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Prep Type: Total/NA

TestAmerica Job ID: 400-154881-C

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike Duplicate

**Client Sample ID: Matrix Spike** 

hDu: Asd woG

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: MW-02

**Client Sample ID: Method Blank** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-403221/3

**Matrix: Water** 

Analysis Batch: 403221

MB MB

Analyte Result Qualifier PQL **MDL** Unit Analyzed Dil Fac D Prepared 0610 Frfi orij e 060g9 3 060g9 mLF2 0CR09F18 10:1g

Lab Sample ID: LCS 400-403221/4

**Matrix: Water** 

Analysis Batch: 403221

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec BB Frfi orij e 4600 g6B4 mLF2 B0 - 110

Lab Sample ID: 400-154742-B-4 MS

**Matrix: Water** 

Analysis Batch: 403221

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Frfi orij e 060g9 3 1600 1604 mLF2 104 C5 <sub>-</sub> 195

Lab Sample ID: 400-154742-B-4 MSD

**Matrix: Water** 

Analysis Batch: 403221

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Frfi orij e 060q9 3 1600 1604 mLF2 104 C5 <sub>-</sub> 195

Lab Sample ID: 400-154881-7 DU

**Matrix: Water** 

**Analysis Batch: 403221** 

DU DU RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit RPD Limit 061B 061B0 mLF2 Frfi orij e

Lab Sample ID: MB 400-403294/3

**Matrix: Water** 

Analysis Batch: 403294

MB MB

Analyte Result Qualifier PQL MDL Unit D Prepared Analyzed Dil Fac Frfi orij e 0610 060g9 3 060g9 mLF2 0CR09R18 1U:54

Lab Sample ID: LCS 400-403294/4

**Matrix: Water** 

Analysis Batch: 403294

Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit %Rec Limits Frfi orij e 4600 g68C mLR2 BC B0 - 110

Lab Sample ID: 400-154881-19 DU

**Matrix: Water** 

Analysis Batch: 403294

DU DU Sample Sample **RPD** Analyte Result Qualifier Result Qualifier Unit D RPD Limit Frfi orij e 060q9 3 060q9 3 mLR2

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Client Sample ID: FB-01

Prep Type: Total/NA

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TestAmerica Job ID: 400-154881-C

hDu: Asd woG

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-403150/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403150

MB MB Analyte Result Qualifier PQL **MDL** Unit Analyzed Dil Fac D Prepared hf nPate 560 164 mLF2 0CR01R18 19:9U 164 3

Lab Sample ID: LCS 400-403150/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403150

Spike LCS LCS %Rec. Added Limits **Analyte** Result Qualifier Unit %Rec hf nPate 1560 1U89 mLF2 108 B0 - 110

Lab Sample ID: MRL 400-403150/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403150

Spike MRL MRL %Rec. Added Analyte Result Qualifier Unit D %Rec Limits hf mate 5600 56Bg mLF2 11B

Lab Sample ID: 400-155356-B-10 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403150

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits hf meate 1060 1468 mLF2

q65 Ī CC\_ 198 11g Lab Sample ID: 400-155356-B-10 MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Water** 

Analysis Batch: 403150

Spike MSD MSD %Rec. RPD Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits RPD Limit 1060 hf mate 1560 mLF2 CC- 198 g65 Ī 115

Lab Sample ID: MB 400-403365/6 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 403365

MB MB Result Qualifier PQL MDL Unit **Analyte** Prepared Analyzed Dil Fac 164 3 560 hf mPate 164 mLF2 0CR0gR18 08:55

Lab Sample ID: LCS 400-403365/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403365 LCS LCS Spike

%Rec. Added Limits **Analyte** Result Qualifier Unit %Rec hf mate 1560 1560 mLF2 100 B0 - 110

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Prep Type: Total/NA

TestAmerica Job ID: 400-154881-C

hDu: Asd woG

# Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: MRL 400-403365/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 403365

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits hf nPate 5600 mLR2 56g4 10C 50 - 150

Lab Sample ID: 400-154909-A-1 MS

Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 403365** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier Limits Unit %Rec 1060 hf nPate <u>165</u> Ī 106B mLF2 B4 CC- 198

Lab Sample ID: 400-154909-A-1 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 403365

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
hfmPate	165	I	1060	1065		mLR2		B0	CC <sub>-</sub> 198	g	5

# Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-370670/23-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

Analyte

. aj if m-99U

**Analysis Batch: 374837** 

37								Prep Batch:	370670	
		Count	Total					-		
MB	MB	Uncert.	Uncert.							
Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
060gU5B	3	06998	06998	1600	06444	yl iF2	0UR 5R 8 1U:09	00R1R18 14:94	1	

MR MR Carrier %Yield Qualifier Limits Prepared Analyzed Dil Fac Ba Carrier 40 - 110 03/12/18 13:09 05/11/18 14:94 104

Total

Lab Sample ID: LCS 160-370670/1-A

**Matrix: Water** 

**Analysis Batch: 374837** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 370670

Spike LCS LCS Uncert. %Rec. Analyte Added  $(2\sigma + / -)$ RL **MDC** Unit Limits Result Qual %Rec . aj if m-99U 156C 1030B 9619 1600 06qU1 vI iF2 10B U8 - 1qC

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 100 40 - 110

Lab Sample ID: LCSD 160-370670/2-A Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 374837

				Total						
	Spike	LCSD	LCSD	Uncert.				%Rec.		RER
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	RER	Limit
. aj if m-99U	156C	15699		1684	1600	06g80 yliR2	BC	U8 - 1gC	064U	1

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Prep Batch: 370670

TestAmerica Job ID: 400-154881-C

hDu: Asd woG

# Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-370670/2-A

**Matrix: Water** 

**Analysis Batch: 374837** 

LCSD LCSD

 Carrier
 % Yield
 Qualifier
 Limits

 Ba Carrier
 101
 40 - 110

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

**Prep Batch: 370670** 

Lab Sample ID: MB 160-370790/23-A

**Matrix: Water** 

**Analysis Batch: 374837** 

Client Sample ID: Method Blank
Prep Type: Total/NA

Prep Batch: 370790

MR MR Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit Prepared Analyzed Dil Fac . aj if m-99U 061U9U 3 0614g 0614g 1600 0690C yl iF2 0URUR8 19:1U 0CR11R8 05:50

Total

Count

MB MB

 Carrier
 %Yield Plant
 Qualifier Plant
 Limits

 Ba Carrier
 102
 40 - 110

03/13/18 19:13 05/11/18 02:20 1

Client Sample ID: Lab Control Sample

Prepared

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 370790

Dil Fac

Analyzed

Matrix: Water
Analysis Batch: 374834

Allalysis Datcii. 374034

Lab Sample ID: LCS 160-370790/1-A

Total

Uncert. %Rec.

Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits U8 - 1gC . aj if m-99U 06100 yl iF2 1168 10608 1<u>6</u>91 1600 B1

LCS LCS

Spike

LCS LCS

Carrier%YieldQualifierLimitsBa Carrier10640 - 110

Lab Sample ID: LCSD 160-370790/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Water** 

**Analysis Batch: 374834** 

Prep Type: Total/NA

**Prep Batch: 370790** 

**Spike** LCSD LCSD Uncert. %Rec. **RER** Added  $(2\sigma + / -)$ RL %Rec Limits Analyte Result Qual MDC Unit RER Limit 1600 . aj if m-99U 1168 10659 169U 061C4 yl iF2 8B U8 - 1gC 0610

Total

LCSD LCSD

 Carrier
 %Yield
 Qualifier
 Limits

 Ba Carrier
 103
 40 - 110

### Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-370673/23-A

Client Sample ID: Method Blank

**Matrix: Water** 

**Analysis Batch: 374835** 

Prep Type: Total/NA
Prep Batch: 370673
Count Total

MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit Prepared Analyzed . ai if m-998 0649a5 3 06aU5 1600 0658g yliP2 0UR15R18 1C:09 0CR11R18 0B:4U 06gUC

TestAmerica weGsacora

TestAmerica Job ID: 400-154881-C

hDu: Asd woG

# Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-370673/23-A

**Matrix: Water** 

**Analysis Batch: 374835** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA **Prep Batch: 370673** 

MB MB Carrier **%Yield Qualifier** Limits Prepared Analyzed Dil Fac 40 - 110 03/12/18 15:09 05/11/18 0. :43 Ba Carrier 104 Y Carrier 3. 79 40 - 110 03/12/18 15:09 05/11/18 0. :43

Lab Sample ID: LCS 160-370673/1-A

**Matrix: Water** 

Analysis Batch: 374836

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Prep Batch: 370673** 

Total Spike LCS LCS Uncert. %Rec. Added Result Qual  $(2\sigma + / -)$ RL %Rec Limits **Analyte** MDC Unit 106B 1600 064BC vI iR2 5U<sub>-</sub> 140 . aj if m-998 1161g 1**6** 109

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 100 40 - 110 Y Carrier 8273 40 - 110

Lab Sample ID: LCSD 160-370673/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Water** 

**Analysis Batch: 374836** 

Prep Type: Total/NA **Prep Batch: 370673** 

Total LCSD LCSD Spike Uncert. %Rec. **RER** Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits RER Limit 106B B64BB 169U 1600 06U45 yl iF2 8C 5U- 140 06Jg . aj if m-998

LCSD LCSD Carrier %Yield Qualifier Limits Ba Carrier 101 40 - 110 3270 40 - 110 Y Carrier

Lab Sample ID: MB 160-370793/23-A Client Sample ID: Method Blank

**Matrix: Water** 

**Analysis Batch: 374561** 

Prep Type: Total/NA **Prep Batch: 370793** 

Count Total MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit Prepared Analyzed Dil Fac . aj if m-998 06911C 3 0690C 06908 1600 06ggU yliR2 0URUR8 1g:10 0CR0R8 14:44

MB MB Carrier **%Yield Qualifier** Limits Prepared Dil Fac Analyzed 102 40 - 110 03/13/18 16:10 05/10/18 14:44 Ba Carrier Y Carrier 8879 40 - 110 03/13/18 16:10 05/10/18 14:44

Lab Sample ID: LCS 160-370793/1-A

**Matrix: Water** 

**Analysis Batch: 374666** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 370793

Total Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits . aj if m-998 861U 8614g 06B55 1600 06g4C yliF2 100 5U- 140

TestAmerica we Gsacora

TestAmerica Job ID: 400-154881-C

**Client Sample ID: Lab Control Sample** 

hDu: Asd woQ

**Prep Type: Total/NA Prep Batch: 370793** 

**Prep Batch: 370793** 

# Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-370793/1-A

**Matrix: Water** 

**Analysis Batch: 374666** 

InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wra Gt

LCS LCS

Carrier	%Yield	Qualifier	Limits
Ba Carrier	106		40 - 110
Y Carrier	. 672		40 - 110

Lab Sample ID: LCSD 160-370793/2-A **Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 374666** 

				ı otai						
	Spike	LCSD	LCSD	Uncert.				%Rec.		RER
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	RER	Limit
. aj if m-998	861U	86g91		06BU5	1600	06g10 yliR2	109	5U₋ 140	0 <b>6</b> 0B	1

LCSD LCSD Carrier %Yield Qualifier Limits Ba Carrier 103 40 - 110 Y Carrier . 173 40 - 110

Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-78700-A-6 DU **Client Sample ID: Duplicate Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 375258** 

•					Total						
	Sample	Sample	DU	DU	Uncert.						RER
Analyte	Result	Qual	Result	Qual	(2σ+/-)	RL	MDC U	nit		RER	Limit
l ombiŒi	06910	3	06550U		0699g	5600	06g0C yl	iF2		0680	

. aj if m 99U+

998

TestAmerica we Gsacora

# **Chain of Custody Record**

Pensacola, FL 32514 Phone (850) 474-1001 Fax (850) 478-2671	J	Chain of Custody Record	Custod	iy Keco	<u>5</u>					THE LEADER IN	THE LEADER IN ENVIRONMENTAL TEST
Client Information	Sampler:	endosto		Lab PM: Whitmire, Cheyenne R	heyenne R		Carrie	Camer Tracking No(s)	.;	COC No:	1346.2
Client Contact: Kristl Mitchell	Phone: \$50-3	336-0132		E-Mail: cheyenne.w	E-Mail: cheyenne.whitmire@testamericainc.com	tamericaino	COM			Page:	3,070
Company: Gulf Power Company				_		Analy	malysis Requested	ted		Job #:	
Address: BIN 731 One Energy Place	Due Date Requested:	ed:			دنــــــــــــــــــــــــــــــــــــ	241				Preservation Codes	
City. Pensacola	TAT Requested (days):	195):			/ <del>0471</del>     7240	المرا		_		A-HCL B-NaOH	
State, Zp: FL, 32520	ľ			ic.	_	9,00	/			D - Nitric Acid E - NaHSO4	C - AsNaO2 P - Na2O4S C - Na2SO3
Phone: 850-444-6427(Tel)	Po #: Purchase Order not required	r not required				ย				F - MeOH G - Amchlor	
Email: krmitche@southern.co.com	WO #:			lat	4-0-1 1-0-1	¥ '					
Project Name: CCR Smith Plant	Project #: 40006609			d no su	4500 <u>.</u> 8,54,5		N-			K-EDTA L-EDA	W - pH 4-5 Z - other (specify)
Sile: Ash Pond	SSOW#:			כח ואי	bhold3, 80lld8, 0,68,8,	אוכיי				Other:	
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Sample Identification	Sample Date		G=grab)   BT-Thaus, A-A Preservation Code:		09 C	-				1	Special instructions/Note:
60-WW	81-1-1	1410	7	Water		×	3			0	
MW-03	A1-9-4)	-		Water	X	*	×			2	
Mus - 06	6.8.18			Water	X		×			200	
May -07	6 8 18		7	Water	×	2	2			2	
Nw-08	67-18	1314	5		×	×				2	
Musi - 09	1-7-18	leLi	7		~	X	×			8	
MW-10	16-7-18	19 48	ક		1	×	~			الما	
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ile Skin Imitant	Poison B Unknown		Radiological	డు	Imple Disposal (A I	sal ( A fee o Client	may be asse:	assessed if sam Disposal By Lab	ples are ret	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)  Return To Client  Anne	in 1 month)
. 111, 17, 0				ਲੱ	ecial Instruc	lions/QC R	Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:		Time:				Method of Shipment:	ipment		
Kelindurished by: WW WW WW			Company	SH &W.	Pecelvad by:	1 000	agendarle		Date/Time:	1:34	Company
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Custody Soals Injact:   Custody Soal No.									ale IIIIe.		Company
					Cooler Temps	erature(s) 'C a	Cooler Temperature(s) "C and Other Remarks.	5			

3

N - None
O - Ashado
P - Ma204S
Q - Na2503
R - Na2503
S - H2504
T - TSP Dodecahydrate
U - Acetone
W - PH 4-5
Z - other (specify) Special Instructions/Note: Viar. NOMAMAIL HON Company Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Mon
Special Instructions/GC Requirements: COC No: 400-74588-29346.2 Preservation Codes: A - HCL
B - NaOH
C - Zn Acetate
C - Nitric Acid
E - NashSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid 7.2 Page: Page 2 of 2 Job #: 1350 i - ice J - Di Water K - EDTA L - EDA Hagandone Deserting 1818 M X Total Number of containers 18 6 . 9 18 Method of Shipment: AS Belylliw Analysis Requested Cooler Temperature(s) °C and Other Remarks: ×× E-Mail: cheyenne.whilmire@testamencainc.com Comment Received by: × Lab PM: Whitmire, Cheyenne R Received by Chain of Custody Record Preservation Code: Water Water Water Matrix Water Radiological Type (C=comp, G=grab) e Sample 850-336-019Z R. C. Hancode Lan 0811 Po #: Purchase Order not required 1150 2160 1155 0917 Sample Time Unknown Date/Time:

| Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Content | Co FAT Requested (days): Due Date Requested: Sample Date 89 89 6-7-18 8-18 6-7-18 Project #: 40006609 SSOW#: Poison B Hagandorter Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify Custody Seals Intact: Custody Seal No.: Pensacola, FL 32514 Phone (850) 474-1001 Fax (850) 478-2671 Possible Hazard Identification
Non-Hazard Elammable Empty Kit Relinquished by: BIN 731 One Energy Place kmitche@southemco.com hear Sample Identification Client Information 5 **Gulf Power Company** FR 02 Phone: 850-444-6427(Tel) ER-01 6 B-02 F B-01 Project Name: CCR Smith Plant y C linquished by: Client Contact: Kristi Mitchell nquished by City: Pensacola State, Zp: FL, 32520 Ash Pond

**TestAmerica** 

Client: Gulf Power Company

Job Number: 400-154881-S DAG Number: s hd Pon/

List Source: TestAmerica Pensacola

Login Number: 154881 List Number: 1

Creator: Perez, Trina M

oreator. Ferez, Trilla Wi		
Question	Answer	Comment
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TestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-154881-S DAG Number: s hd Pon/

Login Number: 154881
List Source: TestAmerica St. Louis
List Number: 2
List Creation: 06/12/18 05:09 PM

Creator: Press, Nicholas B

Creator. Press, Nicholas B		
Question	Answer	Comment
c a/ ioavti' ity wahnkt vdev <e a="" ah="" bav<.="" by="" ey="" hur'="" ih="Rg" meahure="" metert<="" or="" roun="" td=""><td>, rue</td><td></td></e>	, rue	
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TestAmerica Job ID: 400-154881-2 SDG: Ash Pond

Project/Site: CCR Smith Plant

Client: Gulf Power Company

# **Laboratory: TestAmerica Pensacola**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 12075		L7421	07-77-70
Arizona	State Program	9	AZ0210	01-17-19
Arkansas DEQ	State Program	6	88-0689	09-01-18 F
California	State Program	9	7510	06-30-19
( lorida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 )( L*	06-30-19
Illinois	NELAP	5	700041	10-09-18
lowa	State Program	2	362	08-01-18 F
Kansas	NELAP	2	E-10753	10-31-18
Kentucky )UST*	State Program	4	53	06-30-19
Kentucky )WW*	State Program	4	98030	17-31-18
Louisiana	NELAP	6	30926	06-30-19
Louisiana )DW*	NELAP	6	LA120005	17-31-18
Maryland	State Program	3	733	09-30-19
Massachusetts	State Program	1	M-( L094	06-30-19
Michigan	State Program	5	9917	06-30-19
New Jersey	NELAP	7	(L006	06-30-19
North Carolina )WW/SW*	State Program	4	314	17-31-18
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00462	01-31-19
Rhode Island	State Program	1	LAO00302	17-30-18
South Carolina	State Program	4	96076	06-30-18 F
Tennessee	State Program	4	TN07902	06-30-19
Texas	NELAP	6	T104204786-18-14	09-30-18
US ( ish & Wildlife	( ederal		LE058448-0	02-31-19
USDA	( ederal		P330-18-00148	05-12-71
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

# Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L7305	04-06-19
Arizona	State Program	9	AZ0813	17-08-18
California	State Program	9	7886	06-30-19
Connecticut	State Program	1	PH-0741	03-31-19
( lorida	NELAP	4	E82689	06-30-19
Illinois	NELAP	5	700073	11-30-18
Iowa	State Program	2	323	17-01-18
Kansas	NELAP	2	E-10736	10-31-18
Kentucky )DW*	State Program	4	90175	17-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana )DW*	NELAP	6	LA180012	17-31-18
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-18 F
Missouri	State Program	2	280	06-30-18 F

FAccreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-154881-2
SDG: Ash Pond

# **Laboratory: TestAmerica St. Louis (Continued)**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
Nevada	State Program	9	MO000547018-1	02-31-19
New Jersey	NELAP	7	MO007	06-30-19
New York	NELAP	7	11616	03-31-19
North Dakota	State Program	8	R702	06-30-19
NRC	NRC		74-74812-01	17-31-77
Oklahoma	State Program	6	9992	08-31-19
Pennsylvania	NELAP	3	68-00540	07-78-19
South Carolina	State Program	4	85007001	06-30-19
Texas	NELAP	6	T104204193-18-17	02-31-19
US ( ish & Wildlife	( ederal		058448	02-31-19
USDA	( ederal		P330-12-0078	07-07-70
Utah	NELAP	8	MO000547016-8	02-31-18 F
Virginia	NELAP	3	460730	06-14-19
Washington	State Program	10	C597	08-30-18 F
West Virginia DEP	State Program	3	381	10-31-18 F

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# Geosyntec consultants

180A Market Place Boulevard Knoxville, TN 37922 PH 865.330.0037 www.geosyntec.com

Final Review: JK Caprio 9/7/18

# Memorandum

Date: August 30, 2018

To: Carl Eldred

From: Chris Pracheil

CC: H. Parthasarathy and J. Caprio

Subject: Stage 2A Data Validations - Level II Data Deliverables -

TestAmerica Laboratories, Inc. Job Numbers 440-154881-2, 440-

154881-3, 440-154881-5and 440-154881-7

**SITE: Plant Smith** 

#### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eleven aqueous samples, three field duplicate samples, two field blanks and two equipment blanks collected from June 06 to 08, 2018, as part of the Plant Smith CCR sampling event.

The samples were analyzed at TestAmerica Pensacola (TA Pensacola), Pensacola, Florida, for the following analytical tests:

- Metals by EPA Methods 3005A/6020
- Mercury by EPA Method 7470A
- Chloride by Standard Methods (SM) 4500 Cl
- Fluoride by SM 45000 F
- Sulfate by SM 4500 SO<sub>4</sub>
- Total Dissolved Solids by SM 2540 C

The samples were analyzed at TestAmerica St. Louis (TA St. Louis), Earth City, MO for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Combine Radium 226 + 228 by Calculation

#### **EXECUTIVE SUMMARY**

The samples were handled, prepared and measured in the same manner under similar prescribed conditions.

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- National Functional Guidelines for Inorganic Superfund Data Review, August 2014 (OSWER 9355.0-131, EPA 540-R-013-001);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

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

Laboratory ID	Client ID
400-154881-2	MW-14
400-154881-3	MW-13
400-154881-5	MW-11
400-154881-7	MW-02
400-154881-8	MW-03
400-154881-9	MW-06
400-154881-10	MW-07
400-154881-11	MW-08
400-154881-12	MW-09

Laboratory ID	Client ID
400-154881-13	MW-10
400-154881-14	MW-12
400-154881-15	DUP-01
400-154881-16	DUP-02
400-154881-17	DUP-03
400-154881-18	EB-01
400-154881-19	FB-01
400-154881-20	EB-02
400-154881-21	FB-02

Final Review: JK Caprio 9/7/18

The samples were received within 0-6°C, with the following exceptions. The samples that were sent to TA St. Louis were received at 18.0°C, since these samples were being analyzed for

radium-226 and radium-228 and did not require cooling, no qualifications were applied to the data.

No sample preservation issues were noted by the laboratory.

#### 1.0 METALS

The samples were analyzed by EPA methods 3005A/6020 (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ⊗ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the sample set is 100%.

#### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding time was met for the sample analyses.

Final Review: JK Caprio 9/7/18

#### 1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 402138 and 402140). Metals were not detected in the method blanks above the method detection limits (MDLs).

# 1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample MW-02. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria.

One batch MS/MSD pair was also reported for the metals data. Since these were batch QC, the results do not affect the samples in this data set and no qualifications were applied to the data based on the batch QC.

# 1.5 Laboratory Control Sample (LCS)

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

#### 1.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs.

# 1.7 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs, with the following exception.

Selenium was detected at an estimated concentration, greater than the MDL and less the RL in EB-01. Therefore, the concentrations of selenium in the associated samples that were less than five times the equipment blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
MW-03	Selenium	0.0003	Ι	0.0003	U*	BE

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
MW-08	Selenium	0.00032	Ι	0.00032	U*	BE
MW-13	Selenium	0.00031	Ι	0.00031	U*	BE
MW-11	Selenium	0.0006	Ι	0.0006	U*	BE

mg/L- milligram per liter

### 1.8 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-03. Acceptable precision [(RPD  $\leq$  20% or the difference between the concentrations  $\leq$  reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-08 and MW-06, respectively.

#### **Sensitivity**

The samples were reported to the MDLs. Elevated non-detect results were reported due to the dilutions analyzed.

#### 1.9 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

#### 2.0 ANIONS

The samples were analyzed for chloride by SM 4500 Cl, fluoride by SM 4500 F and sulfate by SM 4500 SO<sub>4</sub>.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank

I-the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

<sup>\*-</sup>Validation qualifiers are defined in Attachment 1 at the end of this report

<sup>\*\*-</sup>Reason codes are defined in Attachment 2 at the end of this report

- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

# 2.1 Overall Assessment

The anion data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

# 2.2 Holding Times

The holding time for anion analyses of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eight method blanks were reported (chloride batches 403169, 403212 and 403252; fluoride batches 403221 and 403294; sulfate batches 403150, 403304 and 403365). Anions were not detected in the method blanks above the MDLs.

#### 2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported, using sample MW-02 for the chloride data. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

In addition, two batch MS/MSD pairs was reported for the chloride data, two batch MS/MSD pairs were reported for the fluoride data and three batch MS/MSD pairs were reported for the sulfate data. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

# 2.5 <u>Laboratory Control Sample</u>

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

#### 2.6 <u>Laboratory Duplicate</u>

Two sample set specific laboratory duplicates were reported for the fluoride data, using samples MW-02 and FB-01. The RPD results were within the laboratory and SOP specified acceptance criteria.

# 2.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Anions were not detected in the field blanks above the MDLs.

### 2.8 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Anions were not detected in the equipment blanks above the MDLs, with the following exception.

Sulfate was detected at an estimated concentration, greater than the MDL and less the RL in EB-02. Since sulfate was either not detected or detected at more than five times the equipment blank concentration in the associated samples, no qualifications were applied to the sulfate data based on the equipment blank contamination.

# 2.9 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-03. Acceptable precision [(RPD  $\leq$  20% or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-08 and MW-06, respectively.

#### 2.10 Sensitivity

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

#### 2.11 <u>Electronic Data Deliverables Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

#### 3.0 TOTAL DISSOLVED SOLIDS

The samples were analyzed for total dissolved solids (TDS) by SM 2540C.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 3.1 Overall Assessment

The TDS data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 3.2 **Holding Times**

The holding time for TDS analyses of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported (batches 400737, 400948, 400955, 400962 and 401134). TDS was not detected in the method blanks above the MDL.

#### 3.4 <u>Laboratory Control Sample</u>

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

#### 3.5 <u>Laboratory Duplicate</u>

Five batch laboratory duplicates were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 3.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. TDS was not detected in the field blanks above the MDLs.

#### 3.7 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. TDS was not detected in the equipment blanks above the MDLs.

#### 3.8 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-03. Acceptable precision [(RPD  $\leq$  20% or the difference between the concentrations  $\leq$  reporting limit (RL)] was demonstrated between the field duplicates and original samples MW-03, MW-08 and MW-06, respectively.

#### 3.9 **Sensitivity**

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

#### 3.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs

#### 4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and combine radium 226+228 by calculation.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 4.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 4.2 **Holding Times**

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the radium-226 data (batches 370670 and 370790). Two method blanks were reported for the radium-228 data (batches 370673 and 370793). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

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

MS/MSD pairs were not reported with the data.

#### 4.5 Laboratory Control Sample

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

#### 4.6 <u>Laboratory Duplicate</u>

One batch laboratory duplicate was reported for the radium-228 data. Since this was batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### 4.8 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Radium was not detected in the field blanks above the MDCs, with the following exception.

Radium-226 was detected above the MDC in FB-02. Since the radium-226 normalized absolute difference (NAD) between the equipment blank and the associated samples radium-226 concentrations were greater than 2.58, no qualifications were applied to the data.

#### 4.9 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Radium was not detected in the equipment blanks above the MDCs.

#### 4.10 Field Duplicate

Three field duplicate samples were collected with the sample sets, DUP-01, DUP-02 and DUP-03. Acceptable precision [(RER  $(2\sigma) \ge 3$ ] was demonstrated between the field duplicates and original samples MW-03, MW-08 and MW-06, respectively.

#### 4.11 **Sensitivity**

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

#### 4.12 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

\* \* \* \* \*

# ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team per the SOP

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious analytical efficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the staple and meet quality control criteria. The analyte may or may not be present in the sample.

## ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BE	Equipment blank contamination. The result should be
	considered "not-detected."
BF	Field blank contamination. The result should be considered
	"not-detected."
BL	Laboratory blank contamination. The result should be considered
	"not-detected."
FD	Field duplicate imprecision.
M+	MS and/or MSD recoveries outside of acceptance limits. The
	result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result
	may be biased low.

## Geosyntec consultants

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Final Review: JK Caprio 10/2/18

#### Memorandum

Date: September 21, 2018

To: Carl Eldred

From: Kristoffer Henderson

CC: H. Parthasarathy and J. Caprio

Subject: Stage 2A Data Validations - Level II Data Deliverables -

TestAmerica Laboratories, Inc. Job Number 440-154881-2

**SITE: Plant Smith** 

#### **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, collected June 07, 2018, as part of the Plant Smith CCR sampling event.

The sample was analyzed at TestAmerica Pensacola (TA Pensacola), Pensacola, Florida, for the following analytical tests:

- Metals by EPA Methods 3005A/6020
- Chloride by Standard Methods (SM) 4500 Cl
- Fluoride by SM 4500 F
- Sulfate by SM 4500 SO<sub>4</sub>
- Total Dissolved Solids by SM 2540 C

The sample was analyzed at TestAmerica St. Louis (TA St. Louis), Earth City, MO for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Combine Radium 226 + 228 by Calculation

#### **EXECUTIVE SUMMARY**

Based on this Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory report, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- National Functional Guidelines for Inorganic Superfund Data Review, August 2014 (OSWER 9355.0-131, EPA 540-R-013-001);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following sample was analyzed and reported in the laboratory report:

Laboratory ID	Client ID
400-154881-2	MW-14

No sample preservation issues were noted by the laboratory. It was noted that there was a discrepancy between the first sample relinquishing time and the first sample receiving time of four minutes (11:30 vs 11:34). This did not have an impact on the data.

#### 1.0 **METALS**

The sample was analyzed by EPA methods 3005A/6020.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ⊗ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 1.1 Overall Assessment

The metals data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the sample set is 100%.

#### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding time was met for the sample analysis.

#### 1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 402138). Metals were not detected in the method blank above the method detection limits (MDLs).

#### 1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS/MSD pair was also reported for the metals data. Since these were batch QC, the results do not affect the samples in this data set and no qualifications were applied to the data based on the batch QC.

#### 1.5 Laboratory Control Sample (LCS)

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

#### 1.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02, reported in laboratory report 400-154881-7. Metals were not detected in the field blanks above the MDLs.

#### 1.7 **Equipment Blank**

Two equipment blanks were collected with the sample sets, EB-01 and EB-02, reported in laboratory report 400-154881-7. Metals were not detected in the equipment blanks above the MDLs, with the following exception.

Selenium was detected at an estimated concentration, greater than the MDL and less the RL in EB-01. Therefore, the concentration of selenium in the associated sample that was less than five times the equipment blank concentration was U\* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
MW-14	Selenium	0.00041	I	0.00041	U*	BE

mg/L- milligram per liter

#### 1.8 Field Duplicate

A field duplicate was not reported with the data set.

#### 1.9 Sensitivity

The sample was reported to the MDLs. Elevated non-detect results were reported due to the dilutions analyzed.

#### 1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

I-the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

<sup>\*-</sup>Validation qualifiers are defined in Attachment 1 at the end of this report

<sup>\*\*-</sup>Reason codes are defined in Attachment 2 at the end of this report

#### 2.0 ANIONS

The sample was analyzed for chloride by SM 4500 Cl, fluoride by SM 4500 F and sulfate by SM 4500 SO<sub>4</sub>.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The anion data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 2.2 Holding Times

The holding time for anion analyses (chloride, fluoride and sulfate) of a water sample is 28 days from sample collection to analysis. The holding time was met for the sample analysis.

#### 2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (chloride batch 403212; fluoride batch 403221; sulfate batch 403304). Anions were not detected in the method blanks above the MDLs.

#### 2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS was reported for the chloride data, one batch MS/MSD pair was reported for the fluoride data and one batch MS/MSD pair was reported for the sulfate data. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 2.5 Laboratory Control Sample

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

#### 2.6 <u>Laboratory Duplicate</u>

One batch laboratory duplicate was reported for the fluoride data. Since this was batch QC, the result does not affect the samples in this data set and qualifications were not applied to the data.

#### 2.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02, reported in laboratory report 400-154881-7. Anions were not detected in the field blanks above the MDLs.

#### 2.8 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02, reported in laboratory report 400-154881-7. Anions were not detected in the equipment blanks above the MDLs, with the following exception.

Sulfate was detected at an estimated concentration, greater than the MDL and less the RL in EB-02. Since sulfate was detected at more than five times the equipment blank concentration in the associated sample, no qualification waw applied to the sulfate data based on the equipment blank contamination.

Final Review: JK Caprio 10/2/18

#### 2.9 Field Duplicate

A field duplicate was not reported with the data set.

#### 2.10 **Sensitivity**

The sample data were reported to the MDLs. No elevated non-detect results were reported.

#### 2.11 <u>Electronic Data Deliverable Review</u>

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

#### 3.0 TOTAL DISSOLVED SOLIDS

The samples were analyzed for total dissolved solids (TDS) by SM 2540C.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 3.1 Overall Assessment

The TDS data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 3.2 **Holding Times**

The holding time for TDS analyses of a water sample is 7 days from sample collection to analysis. The holding time was met for the sample analysis.

#### 3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 400948). TDS was not detected in the method blank above the MDL.

#### 3.4 <u>Laboratory Control Sample</u>

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

#### 3.5 <u>Laboratory Duplicate</u>

One batch laboratory duplicate was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 3.6 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02, reported in laboratory report 400-154881-7. TDS was not detected in the field blanks above the MDLs.

#### 3.7 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02, reported in laboratory report 400-154881-7. TDS was not detected in the equipment blanks above the MDLs.

#### 3.8 Field Duplicate

A field duplicate was not reported with the data set.

#### 3.9 Sensitivity

The sample result was reported to the MDL. No elevated non-detect results were reported.

#### 3.10 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

#### 4.0 RADIOCHEMISTRY

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and combine radium 226+228 by calculation.

The areas of data review are listed below. A leading check mark  $(\checkmark)$  indicates an area of review in which the data were acceptable. A preceding crossed circle  $(\otimes)$  signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### 4.1 Overall Assessment

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 4.2 **Holding Times**

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 4.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the radium-226 data (batch 370670). One method blank was reported for the radium-228 data (batch 370673 and

370793). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

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

MS/MSD pairs were not reported with the data.

#### 4.5 <u>Laboratory Control Sample</u>

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

#### 4.6 <u>Laboratory Duplicate</u>

One batch laboratory duplicate was reported for the radium-228 data. Since this was batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### 4.8 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02, reported in laboratory report 400-154881-7. Radium was not detected in the field blanks above the MDCs, with the following exception.

Radium-226 was detected above the MDC in FB-02. Since the radium-226 normalized absolute difference (NAD) between the equipment blank and the associated sample radium-226 concentration was greater than 2.58, no qualifications were applied to the data.

#### 4.9 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02, reported in laboratory report 400-154881-7. Radium was not detected in the equipment blanks above the MDCs.

#### 4.10 Field Duplicate

A field duplicate was not reported with the data set.

#### 4.11 **Sensitivity**

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

#### 4.12 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

\* \* \* \* \*

# ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team per the SOP

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious analytical efficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the staple and meet quality control criteria. The analyte may or may not be present in the sample.

## ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BE	Equipment blank contamination. The result should be
	considered "not-detected."
BF	Field blank contamination. The result should be considered
	"not-detected."
BL	Laboratory blank contamination. The result should be considered
	"not-detected."
FD	Field duplicate imprecision.
M+	MS and/or MSD recoveries outside of acceptance limits. The
	result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result
	may be biased low.

Date: 2018-11-1911:11:56

PP PE .17 in 42 ft	35 ft	400 mL/min 0.2774638 L 300 sec 42.6 in 18 L	
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	
Philip Evans RDH Environmental Smith CCR Smith Plant 0° 0' 0" 417744	HACH 2100Q	MW-06 2 in 40 ft 10 ft 13.55 ft	ion Summary
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sampling Stabilization Summary

Low-Flow Sa	mpling Stabiliz	zation Summary							
	Time	Time Elapsed		Hd	SpCond µS/	cm Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.2	+/- 0.2	+/- 2%	+/- 10		+/- 0.2	+/- 10
Last 5	10:46:48	1501.02	26.67	5.41	9194.12	0.86	16.60	0.14	-153.60
Last 5	10:51:48	1801.02	27.06	5.35	9271.38	0.94	16.72	0.14	-146.78
Last 5	10:56:48	2101.02	26.84	5.32	9358.43	0.90	16.90	0.13	-140.81
Last 5	11:01:48	2401.02	26.74	5.28	9500.55	0.85	17.04	0.13	-135.61
Last 5	11:06:48	2701.02	26.70	5.26	9613.82	0.82	17.10	0.13	-131.54
Variance 0			-0.22	-0.04	87.06			-0.00	5.97
Variance 1			-0.09	-0.04	142.12	142.12		-0.00	5.19
Variance 2			-0.04	-0.03	113.27			-0.00	4.07

Notes Sample time @1110. PC 70.

Date: 2018-11-19 12:26:09

			ORP mV +/- 10 -201.34 -202.42 -202.24 -201.76 0.06 0.11
7 in	5 ft	400 mL/min 0.2774638 L 300 sec 6 in 14 L	RDO mg/L +/- 0.2 0.13 0.11 0.11 -0.00 -0.00
PP PE .17	Ř	94 0. 96 92	DTW ft 12.28 12.28 12.28 12.28 12.28
nation:  /Type 	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 10 10725.57 5.01 10741.64 4.43 1074.92 4.50 10755.99 4.28 10809.27 4.66 33.28 13.28
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump place	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Ra Stabilization Drawdow Total Volume Pumped	SpCond μS/ +/- 5% 10725.57 1074.92 1074.92 10795.99 10809.27 33.28 21.07 13.28
			pH +/- 0.2 6.13 6.14 6.15 6.15 0.01 0.00
Philip Evans RDH Environmental Smith CCR Smith Plant 0° 0' 0"	HACH 2100Q	07 : 5 ft	Temp C +/- 0.2 26.99 26.97 26.37 26.57 -0.23 -0.17 -0.01
Philip Ev RDH Env Smith C( Smith PI 0° 0' 0" 0° 0' 0"	HAC	MW-07 2 in 40 ft 10 ft 11.75 ft	ation Summary Elapsed 900.02 1200.02 1800.01 2100.01
mation: me me	ke/Model	tion: r r spth th :er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 12:00:35 900.02 Last 5 12:10:35 1200.02 Last 5 12:10:35 1800.01 Last 5 12:20:35 2100.01 Variance 0 Variance 1 Variance 2 Notes Sample time @ 1225. PC 70.
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sa Stabilization Last 5 Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1 Variance 2 Notes Sample t

Date: 2018-11-1915:13:14

PP PE .17 in 45 ft	38 ft	400 mL/min 0.290854 L 300 sec 46 in 6 L
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Philip Evans RDH Environmental Smith CCR Smith Plant 0° 0' 0"	41/744 HACH 2100Q	MW-08 2 in 43 ft 10 ft 17.82 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

	ORP mV	+/- 10	-3.54	-3.07	-8.80			nan	0.47	-5.73
	RDO mg/L	+/- 0.2	0.22	0.18	0.18			nan	-0.04	-0.00
	DTW ft		21.14	21.48	21.60					
	cm Turb NTU	+/- 5% +/- 10	3.08	3.05	2.91					
	SpCond µS/	+/- 2%	11466.46	11476.73	11397.48			nan	10.28	-79.25
	Hd	+/- 0.2	3.19	3.19	3.26			nan	0.00	0.07
	Temp C	+/- 0.2	25.87	25.78	25.79			nan	-0.09	0.01
zation Summary	Time Elapsed		300.02	600.02	901.02					
mpling Stabiliz	Time		14:57:44	15:02:44	15:07:45					
Low-Flow Sa		Stabilization	Last 5	Last 5	Last 5	Last 5	Last 5	Variance 0	Variance 1	Variance 2

Notes Sample time @ 1515. PC 70.

Date: 2018-11-20 08:45:45

			ORP mV +/- 10 -185.28 -184.48 -184.28 -183.76 -183.76 0.19 0.53
PP PE .17 in 35 ft	3 ff	400 mL/min 0.2462198 L 300 sec 12 in 16 L	RDO mg/L +/- 0.2 0.21 0.21 0.17 0.19 0.26 -0.04 0.02
PP PE 35	28	94.0.82.7.3	DTW ft 11.41 11.42 11.42 11.42
rmation: lel/Type e meter gth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 10 8863.92 5.46 8900.38 5.07 8955.54 4.93 8920.38 4.76 8950.55 4.51 -44.84 30.17
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Information Final Pumping Rate Total System Volume Calculated Sample R Stabilization Drawdor Total Volume Pumped	SpCond µS +/- 5% 8863.92 8900.38 8855.54 8920.38 8950.55 -44.84 64.84
			pH +/- 0.2 6.55 6.54 6.55 6.53 6.52 0.01 -0.02
Brett Surles RDH Smith CCR Smith Plant CCR 0° 0' 0"	516 J	-09 3 #	Temp C +/- 0.2 20.03 20.08 20.39 20.39 20.34 0.31 0.09
Brett St RDH Smith C Smith P 0° 0' 0"	597516 Hach	MW-09 2 in 33 ft 10 ft 10.43 ft	ttion Summary Elapsed 1200.02 1800.02 2100.02 2400.02
nation: ne me	e/Model	ion: oth h er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 08:23:04 1200.02 Last 5 08:28:04 1800.02 Last 5 08:33:04 2100.02 Last 5 08:33:04 2400.02 Variance 0 Variance 1
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1

Notes Sample@0844, DUP-02@0744, partly cloudy 60

Date: 2018-11-20 10:30:40

			ORP mV	+/- 10	-103.96 -103.68 -102.86	-102.51 -101.34 0.82	0.36	1.16	
PP PE .17 in 35 ft	28 ft	400 mL/min 0.2462198 L 300 sec 19 in 26 L	RDO mg/L	+/- 0.2	0.15 0.14 0.14	0.14 0.14 -0.00	-0.00	-0.00	
<u>a a -                                 </u>	28	9.00.00	DTW ft		9.67 9.67 9.68	9.70 9.70			
nformation: 1odel/Type Type Diameter Length	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cmTurb NTU	+/- 10	5.96 5.20 4.68	4.80 4.43			
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Information Final Pumping Rate Total System Volume Calculated Sample R. Stabilization Drawdov Total Volume Pumper	SpCond µS	-/- 2%	9012.37 9020.14 9010.36	9014.01 9003.92 -9.79	3.66	-10.09	
			H	+/- 0.2	5.16 5.15 5.16	5.17 5.18 0.01	0.01	0.01	
Philip Evans RDH Environmental Smith CCR Smith Plant 0° 0' 0"	417744 HACH 2100Q	-10 : t ft	Temp C	+/- 0.2	25.96 26.23 26.42	26.46 26.37 0.19	0.05	-0.09	
Philip Ev RDH Env Smith Co Smith Pl 0° 0' 0"	0-0-0 417744 HACH 2	MW-10 2 in 33 ft 10 ft 8.18 ft	ation Summary Elapsed		2703.02 3003.02 3303.02	3603.02 3904.02			
nation: ne me	(e/Model	ion: r pth :h er	Low-Flow Sampling Stabilization Summary Time Elapsed		10:07:28 10:12:28 10:17:28	10:22:28 10:27:29			
Project Information: Operator Name Company Name Project Name Site Name Latitude	Congrude Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sai	Stabilization	Last 5 Last 5 Last 5	Last 5 Last 5 Variance 0	Variance 1	Variance 2	Notes

Notes Sample time @ 1030. PC 70.

Date: 2018-11-20 11:47:30

			ORP mV +/- 10 -235.88 -233.85 -229.88 -231.11 -230.12 3.97 -1.23 0.98
PP PE .17 in 35 ft	<b>#</b>	400 mL/min 0.2462198 L 300 sec 20 in 24 L	RDO mg/L +/- 0.2 0.15 0.14 0.15 0.14 -0.00
PP PE 177.	28	9.00.02	DTW ft 11.55 11.55 11.55 11.55
rmation: lel/Type e meter igth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 10 8870.75 14.80 8817.42 13.00 8855.32 11.40 8973.70 10.30 8964.92 9.85 37.90 118.38
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping Informatio Final Pumping Rate Total System Volum Calculated Sample Stabilization Drawd Total Volume Pumpe	SpCond µS +/- 5% 8870.75 8817.42 8855.32 8973.70 8964.92 37.90 118.38 -8.78
			pH +/- 0.2 6.35 6.36 6.35 -0.00 -0.00
Brett Surles RDH Smith CCR Smith Plant CCR 0° 0' 0"	0.16	÷ ≠	Temp C +/- 0.2 25.13 24.87 24.12 24.05 24.23 -0.75 -0.06 0.18
Brett Su RDH Smith C Smith P 0° 0' 0"	0-0 0 597516 Hach	MW-11 2 in 33 ft 10 ft 9.61 ft	ation Summary Elapsed 2401.02 2701.02 3001.02 3601.02 3601.02
nation: ne me	le/Model	ion: oth h er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 11:24:10 2401.02 Last 5 11:29:10 2701.02 Last 5 11:39:10 3001.02 Last 5 11:39:10 3301.02 Last 5 11:44:10 3601.02 Variance 0 Variance 1 Variance 2  Notes Sample@1146, FB-01@1125 Sunny 67
Project Information: Operator Name Company Name Project Name Site Name Latitude	Longlinde Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1 Variance 2 Sample@

Grab Samples

Date: 2018-11-1914:21:42

PP PE .17 in 45 ft 38 ft	400 mL/min 0.290854 L 300 sec 45 in 10 L
Pump Information: Pump Model/Type Tubing Type Tubing Length Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped
Philip Evans RDH Environmental Smith CCR Smith Plant 0° 0' 0" 417744 HACH 2100Q	MW-13 2 in 43 ft 10 ft 15.65 ft
Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water

2. +/- 0.2 +/- 5% +/- 10 6.94 13612.94 0.85 7.06 13768.92 0.60 1 7.04 14020.14 0.57 7.01 14168.26 0.55 6.99 251.22 -0.02 251.22 -0.03 81.92		Low-Flow Sampling Stabilization Summary	2			LITIN dailt	++ W.T.C	728000	750
+/- 0.2 +/- 5% +/- 10 6.94 13612.94 0.85 18.89 7.06 13768.92 0.60 19.01 7.04 14020.14 0.57 19.20 7.01 14102.06 0.55 19.28 6.99 14168.26 0.52 19.40 -0.02 251.22 -0.03 81.92		$\equiv$	၁	Hd	SpCond µs/c	cm lurb NIO	DI W T	KDO mg/L	
6.9413612.940.8518.897.0613768.920.6019.017.0414020.140.5719.207.0114102.060.5519.286.9914168.260.5219.40-0.02251.2219.40-0.0381.92-0.0266.20		0	.2	+/- 0.2	+/- 2%	+/- 10		+/- 0.2	
7.0613768.920.6019.017.0414020.140.5719.207.0114102.060.5519.286.9914168.260.5219.40-0.02251.2219.40-0.0381.92-0.0266.20	300.02 26.1	$\overline{}$	2	6.94	13612.94	0.85	18.89	0.20	
7.0414020.140.5719.207.0114102.060.5519.286.9914168.260.5219.40-0.02251.2219.40-0.0381.92-0.0266.20		0	4	7.06	13768.92	0.60	19.01	0.17	
7.01 14102.06 0.55 19.28 6.99 14168.26 0.52 19.40 -0.02 251.22 -0.03 81.92 -0.02 66.20		$\circ$	7	7.04	14020.14	0.57	19.20	0.16	
6.99 14168.26 0.52 19.40 -0.02 251.22 -0.03 81.92 -0.02 66.20		တ	<u>ရ</u>	7.01	14102.06	0.55	19.28	0.15	
-0.02 251.22 -0.03 81.92 -0.02 66.20		$\circ$	1	66.9	14168.26	0.52	19.40	0.15	
-0.03 81.92 -0.02 66.20	0.0-	$\circ$	က	-0.02	251.22			-0.01	
-0.02 66.20	0.0-	$\circ$	2	-0.03	81.92			-0.02	
	0.02		2	-0.02	66.20			-0.00	

Notes Sample time @ 1425. PC 70.

Date: 2018-11-19 14:41:08

			ORP mV +/- 10 -331.59 -343.83 -351.07 -355.95 -359.05 -7.24 -4.89
5 7 in 7 tr	36 ft	400 mL/min 0.2819272 L 300 sec 14 in 16 L	RDO mg/L +/- 0.2 0.07 0.08 0.09 0.09 0.00 0.00
PP PE .17	36	24 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DTW ft 22.62 22.63 22.63 22.63 22.63
rmation: del/Type e meter igth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 10 9336.90 0.38 9435.65 0.90 9516.50 0.84 9559.23 0.72 9568.48 0.91 80.85
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping In Final Pump Total Syste Calculated Stabilizatic Total Volur	SpCond µ8 +/- 5% 9336.90 9435.65 9516.50 9559.23 9568.48 80.85 9.25
			pH +/- 0.2 7.02 6.97 6.91 6.88 6.86 -0.06
Brett Surles RDH Smith CCR Smith Plant CCR 0° 0' 0"	16 د	4- ++	Temp C +/- 0.2 22.71 22.52 22.50 22.48 22.59 -0.02 0.11
Brett Su RDH Smith C Smith P 0° 0' 0"	597516 Hach	MW-14 2 in 41 ft 10 ft 21.61 ft	ation Summary Elapsed 1200.02 1501.02 1801.02 2101.02 2401.02
nation: ne me	(e/Model	ion: pth h er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 14:24:35 1501.02 Last 5 14:29:35 1801.02 Last 5 14:39:35 2101.02 Last 5 14:39:35 2401.02 Variance 0 Variance 2
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1

Notes Sample@1440, Sunny 66 Grab Samples

Date: 2018-11-19 08:56:00

			ORP mV +/- 10 -68.22 -72.52 -75.82 -78.45 -81.80 -3.29 -2.64
PP PE .17 in 28 ft	₽	400 mL/min 0.2149758 L 300 sec 14 in 18 L	RDO mg/L +/- 0.2 0.10 0.09 0.09 0.08 -0.00
PP PP 28 2.1	21 ft	04 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DTW ft 5.26 5.26 5.26 5.26 5.26
rmation: del/Type be ameter ngth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 10 178.22 2.19 182.89 1.74 186.84 1.33 186.25 1.27 189.27 1.17 3.95 -0.59
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping I Final Pum Total Syst Calculate Stabilizati Total Volu	SpCond µ +/- 5% 178.22 182.89 186.84 186.25 189.27 3.95 -0.59
			pH +/- 0.2 6.02 6.04 6.08 6.09 0.01
Brett Surles RDH Smith CCR Smith Plant CCR 0° 0' 0"	597516 Hach	MW-02 2 in 26 ft 10 ft 4.02 ft	Temp C +/- 0.2 21.49 21.67 21.90 21.89 21.94 0.23 -0.01
Brett RDH Smitt Smitt 0° 0'	59751 Hach	MW-02 2 in 26 ft 10 ft 4.02 ft	ation Summary Elapsed 1500.02 1800.02 2400.02 2700.02
nation: ne me	e/Model	ion: oth h er	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 08:33:37 1500.02 Last 5 08:43:37 2100.02 Last 5 08:43:37 2400.02 Last 5 08:53:37 2700.02 Variance 0 Variance 1
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1

Notes Sample@0855, Sunny 54

Date: 2018-11-19 11:04:51

			ORP mV +/- 10 69.51 68.52 67.48 66.99 66.65 -1.04 -0.49
PP PE .17 in 35 ft	28 ft	400 mL/min 0.2462198 L 300 sec 0.08 in 36 L	RDO mg/L +/- 0.2 0.14 0.17 0.17 -0.02 -0.03
шш	N	40000	5.80 5.80 5.80 5.80 5.80
ormation: del/Type pe ameter ngth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	SpCond µS/cm Turb NTU +/- 5% +/- 10 60.29 24.50 60.30 21.70 60.43 20.10 60.40 19.30 0.01
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump pla	Pumping Final Pum Total Syst Calculate Stabilizati Total Volu	SpCond µ +/- 5% 60.29 60.30 60.43 60.40 0.13 0.01
			pH +/- 0.2 4.94 4.95 4.95 0.00 0.00
Brett Surles RDH Smith CCR Smith Plant CCR 0° 0' 0"	9	t 33	Temp C +/- 0.2 22.06 22.08 22.21 22.29 22.30 0.13 0.08
Brett Su RDH Smith C Smith P 0° 0' 0"	597516 Hach	MW-03 2 in 33 ft 10 ft 5.72 ft	Low-Flow Sampling Stabilization Summary Time Elapsed Stabilization Last 5 10:42:59 4200.02 Last 5 10:52:59 4800.02 Last 5 10:57:59 5100.02 Last 5 10:57:59 5400.02 Variance 0 Variance 1 Variance 2  Notes Sample @1103, Sunny 57
lation: ne ne	leboM/e	on: c r	-Flow Sampling Stabilizat Time vilization 5 10:42:59 5 10:52:59 5 10:57:59 5 11:02:59 ance 0 ance 1 ance 2
Project Information: Operator Name Company Name Project Name Site Name Latitude	Congrude Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar Stabilization Last 5 Last 5 Last 5 Last 5 Variance 0 Variance 1 Variance 2

Grab Samples

Date: 2018-11-19 12:33:57

				ORP mV	-93 17	-92.26	-91.40	-90.77	-90.06 0.86	0.63	0.71
PP PE .17 in 34 ft	⊭	400 mL/min 0.2417564 L 300 sec 52 in 16 L		RDO mg/L	1.0 -/+	0.12	0.11	0.11	0.10	-0.00	-0.00
PP PE .17 in 34 ft	27 ft	400 n 0.241 300 s 52 in 16 L		DTW ft	14 11	14.29	14.43	14.49	14.51		
rmation: lel/Type e meter igth	Pump placement from TOC	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped		SpCond µS/cm Turb NTU	5.22	4.98	3.44	2.09	1.79		
Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Pump plac	Pumping In Final Pump Total Syste Calculated Stabilizatic Total Volun		SpCond µ8	1205.87	1204.46	1203.49	1196.38	1200.44 -0 97	-7.11	4.06
				Hd	6.12	6.12	6.13	6.12	6.11	-0.00	-0.01
Brett Surles RDH Smith CCR Smith Plant CCR 0° 0' 0"	16	ft 12		Temp C	+/- 0.2 24 34	24.10	23.98	23.96	23.94 -0 12	-0.02	-0.03
Brett Su RDH Smith C Smith P 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0	597516 Hach	MW-12 2 in 32 ft 10 ft 9.88 ft	Low-Flow Sampling Stabilization Summary	Elapsed	1200 02	1500.02	1800.02	2100.02	2400.02		
nation: ne me	e/Model	ion: oth h er	npling Stabiliz	Time	12.11.47	12:16:47	12:21:47	12:26:47	12:31:47		
Project Information: Operator Name Company Name Project Name Site Name Latitude	Sonde SN Turbidity Make/Model	Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	Low-Flow Sar	1	l ast 5	Last 5	Last 5	Last 5	Last 5 Variance 0	Variance 1	Variance 2

Notes Sample@1233, DUP-01@1133, Sunny 64



THE LEADER IN ENVIRONMENTAL TESTING

### ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-162396-1

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

ChayenaRwhitmire

Authorized for release by: 12/14/2018 4:32:54 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

.....LINKS .....

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Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### Case Narrative

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

SDG: Ashpond

Job ID: 400-162396-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-162396-1

#### Metals

Method(s) 6020: The continuing calibration verification (CCV) associated with batch 421723 recovered above the upper control limit for Arsenic, Boron, Barium, Beryllium, Chromium, Cobalt, Selenium and Lithium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: FB-01 (400-162396-11).

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-6 (400-162396-3), MW-7 (400-162396-4), MW-8 (400-162396-5), MW-9 (400-162396-6), MW-10 (400-162396-7) and DUP-02 (400-162396-10). Elevated reporting limits (RLs) are provided.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-6 (400-162396-3), MW-7 (400-162396-4), MW-8 (400-162396-5), MW-9 (400-162396-6), MW-10 (400-162396-7), MW-12 (400-162396-8), DUP-01 (400-162396-9) and DUP-02 (400-162396-10). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 421795 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method(s) SM 4500 SO4 E: Due to the concentration of sulfates in the parent sample the MS/MSD were diluted after the spike. The spike amounts were adjusted by the dilution factor. (400-162459-A-1 MS) and (400-162459-A-1 MSD)

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 421795 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-6 (400-162396-3), MW-7 (400-162396-4), MW-8 (400-162396-5), MW-9 (400-162396-6), MW-10 (400-162396-7), DUP-02 (400-162396-10), (400-162459-A-1), (400-162459-A-1 MS) and (400-162459-A-1 MSD). Elevated reporting limits (RLs) are provided.

3

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

Lab Sample ID: 400-162396-1

SDG: Ashpond

#### Client Sample ID: MW-2

Analyte	Result (	Qualifier PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	20	0.25	0.13	mg/L	5	_	6020	Total
								Recoverable
Barium - RA	0.013	0.0025	0.00049	mg/L	5		6020	Total
								Recoverable
Boron - RA	0.045 I	0.050	0.021	mg/L	5		6020	Total
								Recoverable
Chromium - RA	0.0019 I	0.0025	0.0011	mg/L	5		6020	Total
					_			Recoverable
Lithium - RA	0.0028 I	0.0050	0.0011	mg/L	5		6020	Total
								Recoverable
Total Dissolved Solids	88	5.0		mg/L	1		SM 2540C	Total/NA
Chloride	13	2.0	1.4	mg/L	1		SM 4500 CI- E	Total/NA
Fluoride	0.12	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	4.4 I	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.09			SU	1		Field Sampling	Total/NA

#### Client Sample ID: MW-3 Lab Sample ID: 400-162396-2

Analyte	Result Qualific	er PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	1.8	0.25	0.13	mg/L	5	_	6020	Total
								Recoverable
Barium - RA	0.019	0.0025	0.00049	mg/L	5		6020	Total
								Recoverable
Chromium - RA	0.0024 I	0.0025	0.0011	mg/L	5		6020	Total
								Recoverable
Lithium - RA	0.011	0.0050	0.0011	mg/L	5		6020	Total
								Recoverable
Total Dissolved Solids	22	5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	13	2.0	1.4	mg/L	1		SM 4500 CI- E	Total/NA
Fluoride	0.040 I	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Field pH	4.95			SU	1		Field Sampling	Total/NA

### Client Sample ID: MW-6 Lab Sample ID: 400-162396-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron - DL	9.5		1.0	0.42	mg/L	100	_	6020	Total
									Recoverable
Calcium - DL	240		5.0	2.5	mg/L	100		6020	Total
									Recoverable
Arsenic - RA	0.00075	I	0.0013	0.00046	mg/L	5		6020	Total
						<u>.</u> .			Recoverable
Barium - RA	0.062		0.0025	0.00049	mg/L	5		6020	Total
B # B4	0.0040		0.0005	0.00004	,,	_		2222	Recoverable
Beryllium - RA	0.0016	1	0.0025	0.00034	mg/L	5		6020	Total
Little in the DA	0.004		0.0050	0.0044		_		0000	Recoverable
Lithium - RA	0.024		0.0050	0.0011	mg/L	5		6020	Total
Tital Dissainad Califa	FF00		400					CM 05400	Recoverable
Total Dissolved Solids	5500		130		mg/L	1		SM 2540C	Total/NA
Chloride	3200		160	110	mg/L	80		SM 4500 CI- E	Total/NA
Fluoride	0.040	I	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	520		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	5.26				SU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

12/14/2018

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TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

Lab Sample ID: 400-162396-4

SDG: Ashpond

### Client Sample ID: MW-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron - DL	3.5		0.25	0.11	mg/L	25	_	6020	Total
									Recoverable
Calcium - DL	380		1.3	0.63	mg/L	25		6020	Total
									Recoverable
Arsenic - RA	0.0018		0.0013	0.00046	mg/L	5		6020	Total
									Recoverable
Barium - RA	0.14		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Chromium - RA	0.0016	I	0.0025	0.0011	mg/L	5		6020	Total
									Recoverable
Lithium - RA	0.0047	I	0.0050	0.0011	mg/L	5		6020	Total
									Recoverable
Total Dissolved Solids	6500		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	3300		160	110	mg/L	80		SM 4500 CI- E	Total/NA
Sulfate	910		150	42	mg/L	30		SM 4500 SO4 E	Total/NA
Field pH	6.15				SU	1		Field Sampling	Total/NA

#### Client Sample ID: MW-8

Client Sample ID: MW-8					Lab Sar	mple ID: 400	-162396-5
Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac D	Method	Prep Type
Boron - DL		1.0	0.42	mg/L	100	6020	Total
							Recoverable
Calcium - DL	480	5.0	2.5	mg/L	100	6020	Total
							Recoverable
Arsenic - RA	0.0015	0.0013	0.00046	mg/L	5	6020	Total
							Recoverable
Barium - RA	0.058	0.0025	0.00049	mg/L	5	6020	Total
							Recoverable
Beryllium - RA	0.0016 I	0.0025	0.00034	mg/L	5	6020	Total
							Recoverable
Lithium - RA	0.015	0.0050	0.0011	mg/L	5	6020	Total
							Recoverable
Total Dissolved Solids	7300	130	85	mg/L	1	SM 2540C	Total/NA
Chloride	3600	160	110	mg/L	80	SM 4500 CI- E	Total/NA
Sulfate	960	150	42	mg/L	30	SM 4500 SO4 E	Total/NA
Field pH	3.26			SU	1	Field Sampling	Total/NA

#### Client Sample ID: MW-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0037		0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.077		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Lithium	0.0013	Ţ	0.0050	0.0011	mg/L	5		6020	Total
									Recoverable
Boron - DL	11		1.0	0.42	mg/L	100		6020	Total
									Recoverable
Calcium - DL	220		5.0	2.5	mg/L	100		6020	Total
					_				Recoverable
Total Dissolved Solids	4400		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	2200		160	110	mg/L	80		SM 4500 CI- E	Total/NA
Sulfate	580		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	6.52				SU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Lab Sample ID: 400-162396-6

TestAmerica Job ID: 400-162396-1 SDG: Ashpond

**Client Sample ID: MW-10** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

# Lab Sample ID: 400-162396-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac D	Method	Prep Type
Arsenic	0.0033		0.0013	0.00046	mg/L	5	6020	Total
								Recoverable
Barium	0.095		0.0025	0.00049	mg/L	5	6020	Total
								Recoverable
Beryllium	0.00040	I	0.0025	0.00034	mg/L	5	6020	Total
								Recoverable
Lithium	0.0048	I	0.0050	0.0011	mg/L	5	6020	Total
								Recoverable
Molybdenum	0.0028	I	0.015	0.0020	mg/L	5	6020	Total
								Recoverable
Boron - DL	12		2.0	0.84	mg/L	200	6020	Total
								Recoverable
Calcium - DL	440		10	5.0	mg/L	200	6020	Total
					_			Recoverable
Total Dissolved Solids	6000		50		mg/L	1	SM 2540C	Total/NA
Chloride	2800		160	110	mg/L	80	SM 4500 CI- E	Total/NA
Sulfate	830		150	42	mg/L	30	SM 4500 SO4 E	Total/NA
Field pH	5.18				SU	1	Field Sampling	Total/NA

### Client Sample ID: MW-12

# Lab Sample ID: 400-162396-8

Analyte	Result Qual	ifier PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	38	0.25	0.13	mg/L	5	_	6020	Total
								Recoverable
Barium - RA	0.014	0.0025	0.00049	mg/L	5		6020	Total
								Recoverable
Boron - RA	0.071	0.050	0.021	mg/L	5		6020	Total
								Recoverable
Lithium - RA	0.011	0.0050	0.0011	mg/L	5		6020	Total
								Recoverable
Total Dissolved Solids	490	10	6.8	mg/L	1		SM 2540C	Total/NA
Chloride	210	20	14	mg/L	10		SM 4500 CI- E	Total/NA
Fluoride	0.13	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2.2	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.11			SU	1		Field Sampling	Total/NA

### **Client Sample ID: DUP-01**

### Lab Sample ID: 400-162396-9

Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac	Method	Prep Type
Barium	0.014	0.0025	0.00049	mg/L	5	6020	Total
							Recoverable
Boron	0.068	0.050	0.021	mg/L	5	6020	Total
							Recoverable
Calcium	35	0.25	0.13	mg/L	5	6020	Total
							Recoverable
Lithium	0.013	0.0050	0.0011	mg/L	5	6020	Total
							Recoverable
Selenium	0.0012 I	0.0013	0.00071	mg/L	5	6020	Total
							Recoverable
Total Dissolved Solids	490	10	6.8	mg/L	1	SM 2540C	Total/NA
Chloride	210	20	14	mg/L	10	SM 4500 CI- E	Total/NA
Fluoride	0.13	0.10	0.032	mg/L	1	SM 4500 F C	Total/NA
Sulfate	1.8 I	5.0	1.4	mg/L	1	SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

12/14/2018

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# **Detection Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

Lab Sample ID: 400-162396-10

SDG: Ashpond

Client Sample ID: DUP-02

	<u></u>								
_ Analyte	Result Q	ualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0038		0.0013	0.00046	mg/L	5	_	6020	Total
									Recoverable
Barium	0.079		0.0025	0.00049	mg/L	5		6020	Total
									Recoverable
Selenium	0.00075 I		0.0013	0.00071	mg/L	5		6020	Total
									Recoverable
Boron - DL	10		1.0	0.42	mg/L	100		6020	Total
									Recoverable
Calcium - DL	220		5.0	2.5	mg/L	100		6020	Total
									Recoverable
Lithium - RA	0.0056		0.0050	0.0011	mg/L	5		6020	Total
									Recoverable
Total Dissolved Solids	4000		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	2300		160	110	mg/L	80		SM 4500 CI- E	Total/NA
Fluoride	0.040 I		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

100

28 mg/L

620

Client Sample ID: FB-01

Lab Sample ID: 400-162396-11

SM 4500 SO4 E Total/NA

No Detections.

Sulfate

This Detection Summary does not include radiochemical test results.

E

7

8

4.0

44

19

13

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

SDG: Ashpond

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN

#### **Protocol References:**

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Pensacola

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# **Sample Summary**

Matrix

Water

Client: Gulf Power Company Project/Site: CCR Smith Plant

Client Sample ID

MW-2

MW-3

MW-6

MW-7

MW-8

MW-9

MW-10

MW-12

DUP-01

DUP-02

FB-01

Lab Sample ID

400-162396-1

400-162396-2

400-162396-3

400-162396-4

400-162396-5

400-162396-6

400-162396-7

400-162396-8

400-162396-9

400-162396-10

400-162396-11

TestAmerica Job ID: 400-162396-1 SDG: Ashpond

SI	JG: Asnpona	
Collected	Received	
11/19/18 08:55	11/20/18 15:40	
11/19/18 11:03	11/20/18 15:40	
11/19/18 11:10	11/20/18 15:40	
11/19/18 12:25	11/20/18 15:40	
11/19/18 15:15	11/20/18 15:40	
11/20/18 08:44	11/20/18 15:40	
11/20/18 10:30	11/20/18 15:40	
11/19/18 12:33	11/20/18 15:40	
11/19/18 11:33	11/20/18 15:40	ī

11/20/18 07:44 11/20/18 15:40

11/20/18 11:25 11/20/18 15:40

3

4

6

10

11

13

I nie G: u f nPwoper I omya Gs wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Client Sample ID: MW-2

Date Collected: 11/19/18 08:55 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	20		0 <b>12</b> g	0U6	mL <b>R3</b>		11 <b>R</b> 60 <b>R</b> 18 10:4g	11R60R18 15:6g	g
9 onSoj eGf m	0 <b>\@</b> 020	В	0 <b>0</b> 1g	0 <b>\@</b> 020	mLR3		11R60R18 10:4g	11R60R18 15:6g	g
Method: 6020 - Metals (ICP	/MS) - Total Re	coverable	- RA						
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ArseGc	0 <b>ს</b> 00045	В	000016	0 <b>\text{\$0}</b> 0045	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1M0M	g
Barium	0.013		0 <b>0</b> 002g	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M0M	g
7erSmifm	0 <b>ഗ</b> 00064	В	0 <b>0</b> 002g	<b>0\( \pi\)</b> 0064	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M0M	g
Boron	0.045	1	0 <b>0</b> g0	00021	mL <b>R3</b>		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M0M	g
Chromium	0.0019	I	0 <b>७</b> 02g	000011	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M0M	g
lobant	0 <b>ს</b> 00040	В	0 <b>0</b> 002g	<b>0\( \O</b> 0040	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M0M	g
Lithium	0.0028	I	0 <b>0</b> 00g0	000011	mLR3		11R60R18 10:4g	12R04R18 1M0M	g
heneGf m	0 <b>0</b> 000M1	В	O <b>W</b> 016	0 <b>0</b> 000M1	mLR3		11R60R18 10:4g	12R04R18 1M0M	g
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	88		gW	614	mLR3			11R25R18 10:0C	1
Chloride	13		200	14	mLR3			11R28R18 12:65	1
Fluoride	0.12		0110	0 <b>\omega</b> 62	mL <b>R3</b>			11R28R18 12:22	1
Sulfate	4.4	I	gW	14	mLR3			11R2MR18 16:60	1
Method: Field Sampling - F	ield Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.09				hB			11RICRI 8 08:gg	

I nie G: u f nPwoper I omya Gs wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

**Client Sample ID: MW-3** 

Date Collected: 11/19/18 11:03 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-2

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Calcium	1.8		0 <b>12</b> g	0U6	mLR3		11R60R18 10:4g	11R60R18 15:6C	
9 onSoj eGf m	0 <b>\@</b> 020	В	0 <b>W</b> 1g	0 <b>\@</b> 020	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:6C	(
Method: 6020 - Metals (ICP/	MS) - Total Re	ecoverable -	- RA						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
ArseGc	0 <b>/</b> 00045	В	0 <b>\(\pi\)</b> 016	0000045	mLR3		11R60R18 10:4g	12R04R18 1M10	
Barium	0.019		0 <b>ს</b> 002g	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	mLR3		11R60R18 10:4g	12R04R18 1M10	Ç
7erSmifm	0 <b>少</b> 0064	В	0 <b>ს</b> 002g	<b>0\( \pi\)</b> 0064	mLR3		11R60R18 10:4g	12R04R18 1M10	Ç
7oroG	00021	В	0 <b>0</b> g0	0 <b>\@</b> 21	mLR3		11R60R18 10:4g	12R04R18 1M10	
Chromium	0.0024	1	0 <b>ს</b> 002g	000011	mLR3		11R60R18 10:4g	12R04R18 1M10	9
l obant	0 <b>/</b> 00040	В	0 <b>ს</b> 002g	0 <b>\@</b> 0040	mLR3		11R60R18 10:4g	12R04R18 1M10	
Lithium	0.011		0 <b>Ш</b> 0g0	000011	mLR3		11R60R18 10:4g	12R04R18 1M10	
heneGfm	0 <b>0</b> 000M1	В	O <b>W</b> 016	0 <b>0</b> 000M1	mLR3		11 <b>R</b> 60R18 10:4g	12R04R18 1M10	(
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	22		gW	614	mLR3			11R25R18 10:15	
Chloride	13		200	14	mLR3			12R04R18 0C:28	
Fluoride	0.040	I	0110	0 <b>\omega</b> 62	mLR3			11R28R18 12:6M	
hfmPate	14	В	g <b>Ш</b>	14	mLR3			11R2MR18 16:2g	
Method: Field Sampling - F	ield Sampling								
Analyte	Beault	Qualifier	PQL	MDL	l lmi4	D	Prepared	Analyzed	Dil Fa

InieCt: ufnPwoperIomyaCS wro/ectRtite: I I . hmitd wra Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Client Sample ID: MW-6 Lab Sample ID: 400-162396-3 Date Collected: 11/19/18 11:10

Method: 6020 - Metals (ICF Analyte	,	ecoverable Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
9 on Stoje Gfm	00020		0 <b>0</b> 1g		mLR3		11RS0R18 10:4g	11R60R18 15:g4	- Dill u
Method: 6020 - Metals (ICF	P/MS) - Total Re	coverable	- DI						
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Boron	9.5		100	0142	mLF3		11R60R18 10:4q	12R04R18 15:05	10
Calcium	240		g <b>W</b>	2له	mLR3		0	12R04R18 15:05	10
Method: 6020 - Metals (ICF	MS) Total Bo	coverable	DΛ						
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Arsenic	0.00075	1	00016	000045	mLF3		11R60R18 10:4g	•	
Barium	0.062		0 <b>0</b> 002g	0 <b>0</b> 004C	mLF3		ū	12R04R18 1Mg0	
Beryllium	0.0016	I	0 <b>0</b> 002g	0 <b>\times</b> 00064	mL <b>R3</b>		11R60R18 10:4q	12R04R18 1Mq0	
I dromif m	0 <b>ゆ</b> 011	В	0 <b>0</b> 002g	000011	mLF3		11R60R18 10:4g	12R04R18 1Mg0	
l obant	0 <b>少</b> 0040	В	0 <b>ს</b> 002g	<b>0\( \pi\)</b> 0040	mLR3		11R60R18 10:4g	12R04R18 1Mg0	
Lithium	0.024		0 <b>ს</b> 0g0	000011	mL <b>R3</b>		11R60R18 10:4g	12R0MR18 20:24	
heneGf m	0000MI	В	000016	0000001	mLR3		11R60R18 10:4g	12R04R18 1Mg0	
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	5500		160	8g	mLR3			11R25R18 10:0C	
Chloride	3200		150	110	mLR3			12R04R18 0C:g4	8
Fluoride	0.040	T.	0110	0 <b>\omega</b> 62	mLR3			11R28R18 12:41	
Sulfate	520		100	28	mLR3			12R06R18 0C:g5	2
Method: Field Sampling - F	Field Sampling								
		Qualifier	PQL	MDL	Linit	D	Prepared	Analyzed	Dil Fa
Analyte	Result	Qualifier	PQL	IVIDE	UIIIL	U	riepaieu	Allalyzeu	DIIFa

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Lab Sample ID: 400-162396-4 **Client Sample ID: MW-7** Date Collected: 11/19/18 12:25

Matrix: Water

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Method: 6020 - Metals (ICP/M Analyte	•	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
9 onStoj eGf m	0 <b>\(\Odd)</b> 020	В	0 <b>0</b> 1g	00020	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	11 <b>R</b> 60R18 15:g8	
Method: 6020 - Metals (ICP/M	S) - Total Re	coverable :	- DI						
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Boron	3.5		0 <b>12</b> g	0U1	mL <b>R3</b>		11RS0R18 10:4g	12R04R18 15:10	
Calcium	380		166	0 <b>5</b> 6	mLR3		11R60R18 10:4g	12R04R18 15:10	2
Method: 6020 - Metals (ICP/M	S) - Total Pe	coverable .	PΛ						
Analyte	,	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Arsenic	0.0018		0 <b>\(\pi\)</b> 016	000045	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1Mg6	
3arium	0.14		0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	0 <b>0</b> 004C	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1Mg6	
erSmifm	000064	В	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	0 <b>\text{\$\text{\$0}}00064</b>	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1Mg6	
Chromium	0.0016	T	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	0 <b>0</b> 011	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1Mg6	
obart	0 <b>/</b> 00040	В	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	0 <b>\@</b> 0040	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1Mg6	
_ithium	0.0047	T.	<b>0\mu</b> 0g0	000011	mL <b>R3</b>		11R60R18 10:4g	12R0MR18 1C:64	
neneGfm	0 <b>0</b> 000M1	В	000016	00000011	mLR3		11R60R18 10:4g	12R04R18 1Mg6	
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	6500		160	8g	mL <b>R3</b>			11R25R18 10:0C	
Chloride	3300		150	110	mLR3			12R04R18 0C:g4	
-nforije	0 <b>/</b> 062	В	0110	0 <b>\@</b> 62	mL <b>R3</b>			11R28R18 12:44	
Gulfate	910		1g0	42	mLR3			12R06R18 10:00	
Method: Field Sampling - Fiel	d Sampling								
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil F
Field pH	6.15				hB			11RICRI8 12:2g	

12/14/2018

I nie Gt: ufn Pwoper I omya GS wro/ectRnite: II. hmitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Client Sample ID: MW-8 Lab Sample ID: 400-162396-5 Date Collected: 11/19/18 15:15

3.26

**Matrix: Water** 

Date Received: 11/20/18 15:40

Field pH

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
9 onSojeGfm	000020	В	0 <b>0</b> 1g	00020	mLR3		11R60R18 10:4g	11R60R18 1M20	Ó
Method: 6020 - Metals (ICP/M	S) - Total Re	coverable	- DL						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Boron	17		100	0142	mL <b>R3</b>		11R60R18 10:4g	12R04R18 15:16	100
Calcium	480		g <b>W</b>	2 <b>.</b>	mLR3		11R60R18 10:4g	12R04R18 15:16	100
Method: 6020 - Metals (ICP/M	S) - Total Re	coverable	- RA						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Arsenic	0.0015		0 <b>0</b> 016	0000045	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1MgM	
Barium	0.058		0 <b>७</b> 02g	0 <b>0</b> 004C	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1MgM	
Beryllium	0.0016	T.	0 <b>७</b> 02g	<b>0\( \O</b> 0064	mLR3		11 <b>R</b> 60R18 10:4g	12R04R18 1MgM	9
dromif m	0 <b>ს</b> 0011	В	0 <b>0</b> 02g	000011	mLR3		11R60R18 10:4g	12R04R18 1MgM	
obant	0 <b>७</b> 0040	В	0 <b>७</b> 02g	<b>0\( \O</b> 0040	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1MgM	
Lithium	0.015		0 <b>ს</b> 00g0	000011	mLR3		11 <b>R</b> 60R18 10:4g	12R0MR18 1C:gC	
neneGfm	0 <b>0</b> 000M1	В	000016	000001	mLR3		11R60R18 10:4g	12R04R18 1MgM	
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	7300		160	8g	mL <b>R3</b>			11R25R18 10:0C	
Chloride	3600		150	110	mLR3			12R04R18 0C:g4	8
−nforije	00062	В	000	0 <b>\</b> 062	mL <b>R3</b>			11R28R18 12:48	
Sulfate	960		1g0	42	mLR3			12R06R18 10:00	6

hΒ

11F1CF18 1g:1g

I nie G: u f nPwoper I omya Gs wro/ect Rite: II. h mitd wna Gt

Date Received: 11/20/18 15:40

Method: Field Sampling - Field Sampling

Analyte

Field pH

TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Client Sample ID: MW-9

Date Collected: 11/20/18 08:44

Lab Sample ID: MW-9

Result Qualifier

6.52

Lab Sample ID: 400-162396-6

Matrix: Water

Method: 6020 - Metals (ICF	P/MS) - Total Re	coverable							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0037		0 <b>0</b> 016	000045	mLR3		11R60R18 10:4g	11R60R18 1M4M	g
Barium	0.077		0 <b>७</b> 02g	0 <b>10</b> 004C	mLR3		11R60R18 10:4g	11R60R18 1M4M	g
7erSminfm	000064	В	0 <b>७</b> 02g	0000064	mLR3		11R60R18 10:4g	11R60R18 1M4M	g
I dromif m	0 <b>0</b> 011	В	0 <b>0</b> 02g	0 <b>0</b> 011	mL <b>R3</b>		11R60R18 10:4g	11R60R18 1M4M	g
l obart	000040	В	0 <b>0</b> 002g	000040	mLR3		11R60R18 10:4g	11R60R18 1M4M	g
Lithium	0.0013	I	<b>0W</b> 0g0	0 <b>७</b> 011	mLR3		11R60R18 10:4g	11R60R18 1M4M	g
9 onSbj eGf m	000020	В	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	0 <b>0</b> 020	mL <b>R3</b>		11R60R18 10:4g	11R60R18 1M4M	g
hereGf m	00000MI	В	<b>0\(\pi\)</b> 016	0 <b>0</b> 000M1	mLR3		11R60R18 10:4g	11R60R18 1M4M	g
Method: 6020 - Metals (ICF Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Eco
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron				0110					
	11		100		mLR3	=	11R60R18 10:4g	12R04R18 15:1M	100
Calcium	11 220		1 <b>0</b> g <b>0</b>		mLR3 mLR3	=	11R60R18 10:4g	12R04R18 15:1M	
- -						_ =	11R60R18 10:4g	12R04R18 15:1M	100
General Chemistry	220	Qualifier			mLF3		11R60R18 10:4g	12R04R18 15:1M	100
Calcium  General Chemistry  Analyte  Total Dissolved Solids	220	Qualifier	gΦ	2년)	mLR3	=	11RSOR18 10:4g 11RSOR18 10:4g	12R04R18 15:1M 12R04R18 15:1M	100 100
General Chemistry Analyte Total Dissolved Solids	220 Result	Qualifier	gW PQL	2lg MDL 64	mLR3	=	11RSOR18 10:4g 11RSOR18 10:4g	12R94R18 15:1M 12R94R18 15:1M Analyzed	100 100
General Chemistry Analyte	220  Result 4400	<u> </u>	g@  PQL  g0	2lg MDL 64	Unit mLR3 mLR3	=	11RSOR18 10:4g 11RSOR18 10:4g	12R04R18 15:1M 12R04R18 15:1M Analyzed 11R25R18 10:0C	100 100 <b>Dil Fac</b>

**PQL** 

MDL Unit

hΒ

Prepared

Analyzed

11R20R18 08:44

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

**Client Sample ID: MW-10** Date Collected: 11/20/18 10:30

Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-7 Ma

trix: \	<b>Vater</b>
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Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0033		0 <b>0</b> 016	000045	mL <b>R3</b>		11R60R18 10:4g	11R60R18 1Mgg	9
Barium	0.095		0 <b>७</b> 02g	0 <b>0</b> 004C	mLR3		11R60R18 10:4g	11R60R18 1Mgg	g
Beryllium	0.00040	T	0 <b>७</b> 02g	<b>0\( \O</b> 00064	mLR3		11R60R18 10:4g	11R60R18 1Mgg	g
I dromif m	0 <b>0</b> 011	В	0 <b>0</b> 002g	000011	mLR3		11R60R18 10:4g	11R60R18 1Mgg	g
l obant	<b>0\( \pi</b> \) 0040	В	0 <b>0</b> 002g	<b>0\( \O</b> 0040	mLR3		11R60R18 10:4g	11R60R18 1Mgg	g
Lithium	0.0048	I	0 <b>0</b> 00g0	000011	mLR3		11R60R18 10:4g	11R60R18 1Mgg	g
Molybdenum	0.0028	1	0 <b>0</b> 1g	000020	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 1Mgg	g
heneGfm	0 <b>0</b> 000M1	В	O <b>W</b> 016	0 <b>0</b> 000M1	mL <b>R3</b>		11R60R18 10:4g	11R60R18 1Mgg	g
Calcium	440		10	gW	mLR3		11R60R18 10:4g	12R04R18 15:21	200
Boron	12		2W 10		mLR3 mLR3		11R\$0R\$ 10:4g	12R04R18 15:21	200
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6000		g0	64	mL <b>R3</b>			11R25R18 10:0C	1
Chloride	2800		150	110	mLR3			12R04R18 10:0g	80
Frfiorije	O <b>W</b> 62	В	0110	0 <b>\@</b> 62	mLR3			11F28F18 12:gg	1
Sulfate	830		1g0	42	mLR3			12R06R18 10:04	60
Method: Field Sampling - F	Field Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allalyte	Result	quannon	. ~-		•	_		,y=0	

I nie G: u f nPwoper I omya Gs wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Client Sample ID: MW-12

Date Collected: 11/19/18 12:33 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-8

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	38		0 <b>12</b> g	0U6	mLR3		11R60R18 10:4g	11R60R18 15:46	g
9 onSojeGfm	0 <b>\@</b> 020	В	0 <b>७</b> 1g	0 <b>\@</b> 020	mLR3		11R60R18 10:4g	11 <b>R</b> 60 <b>R</b> 18 15:46	g
Method: 6020 - Metals (ICP	/MS) - Total Re	coverable	- RA						
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ArseGc	000045	В	000016	000045	mL <b>R3</b>		11R60R18 10:4g	12R04R18 1M14	g
Barium	0.014		0 <b>0</b> 002g	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M14	g
7erSmifm	0 <b>ഗ</b> 00064	В	0 <b>0</b> 002g	0 <b>\times</b> 0064	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M14	g
Boron	0.071		0 <b>Ш</b> g0	0021	mLR3		11R60R18 10:4g	12R04R18 1M14	g
I dromif m	O <b>W</b> 011	В	0 <b>७</b> 02g	000011	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M14	g
l obant	0 <b>ს</b> 00040	В	0 <b>0</b> 002g	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\</b>	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R04R18 1M14	g
Lithium	0.011		0 <b>0</b> 00g0	000011	mLR3		11R60R18 10:4g	12R04R18 1M14	g
heneGf m	0 <b>0</b> 000M1	В	O <b>W</b> 016	0 <b>0</b> 000M1	mLR3		11R60R18 10:4g	12R04R18 1M14	g
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	490		10	518	mLR3			11R25R18 10:15	1
Chloride	210		20	14	mLR3			12R04R18 0C:g4	10
Fluoride	0.13		0110	0 <b>\omega</b> 62	mLR3			11R28R18 12:gM	1
Sulfate	2.2	I	gW	14	mLR3			12R06R18 0C:22	1
Method: Field Sampling - F	ield Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.11				hB			11FlOR 8 12:66	1

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

**Client Sample ID: DUP-01** 

Date Collected: 11/19/18 11:33 Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-9

Method: 6020 - Metals	s (ICP/MS) - Total Rec	overable							
Analyte	Result (	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ArseGc	0 <b>\(\pi\)</b> 00045 E	3	0 <b>0</b> 016	000045	mLR3		11R60R18 10:4g	11R60R18 15:0M	g
Barium	0.014		0 <b>७</b> 02g	0 <b>0</b> 004C	mLR3		11R60R18 10:4g	11R60R18 15:0M	g
7erSmifm	O <b>W</b> 00064 E	3	0 <b>७</b> 02g	0000064	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:0M	g
Boron	0.068		0 <b>Ш</b> g0	00021	mLR3		11R60R18 10:4g	11R60R18 15:0M	g
Calcium	35		0 <b>12</b> g	0116	mLR3		11R60R18 10:4g	11R60R18 15:0M	g
I dromif m	0 <b>0</b> 0011 E	3	0 <b>७</b> 02g	O <b>W</b> 011	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:0M	g
I obart	O <b>W</b> 0040 E	3	0 <b>0</b> 02g	0 <b>Ш</b> 0040	mLR3		11R60R18 10:4g	11R60R18 15:0M	g
Lithium	0.013		<b>0Ø</b> 0g0	0 <b>\@</b> 011	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:0M	g
9 onSojeGfm	0 <b>10</b> 020 E	3	<b>0/0</b> 1g	0 <b>\omega</b> 020	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:0M	g
Selenium	0.0012 I		0 <b>0</b> 016	0000001	mLR3		11R60R18 10:4g	11R60R18 15:0M	g

ed	Dil Fac	
10:15	1	
)C:g8	10	
14:6a	1	

General Chemistry Analyte	Result (	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	490		10	518	mLR3			11R25R18 10:15	1
Chloride	210		20	14	mLR3			12R04R18 0C:g8	10
Fluoride	0.13		0110	0 <b>\omega</b> 62	mLR3			11F28F18 14:6g	1
Sulfate	18 1		alo	114	ml R3			12R06R18 0C22	1

I nie Gt: ufn Pwoper I omya GS wro/ectRnite: II. hmitd wna Gt

Selenium

TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

Dil Fac

g

g

**Client Sample ID: DUP-02** Date Collected: 11/20/18 07:44 Lab Sample ID: 400-162396-10

11R60R18 10:4g 11R60R18 15:10

**Matrix: Water** 

Date Received: 11/20/1	8 15:40							
Method: 6020 - Metals	s (ICP/MS) - Total Re	ecoverable						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed
Arsenic	0.0038		0 <b>0</b> 016	000045	mLR3		11R60R18 10:4g	11R60R18 15:10
Barium	0.079		0 <b>0</b> 002g	0 <b>0</b> 004C	mLR3		11R60R18 10:4g	11R60R18 15:10
I dromif m	0 <b>少</b> 011	В	0 <b>0</b> 002g	0 <b>७</b> 011	mLR3		11R60R18 10:4g	11R60R18 15:10
l obani	0 <b>ს</b> 0040	В	0 <b>0</b> 02g	0 <b>Ш</b> 0040	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:10
9 omSbjeGfm	0 <b>\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{</b>	В	0 <b>\@</b> 1g	0 <b>\@</b> 020	mL <b>R3</b>		11R60R18 10:4g	11R60R18 15:10

0.00075 I

Method: 6020 - Metals (ICP/MS)	- Total Re	coverable -	· DL						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	10		100	0142	mLR3		11RS0R18 10:4g	12R04R18 15:24	100
Calcium	220		g <b>W</b>	2لع	mL <b>R3</b>		11R60R18 10:4g	12R04R18 15:24	100

00000M1 mLR3

Method: 6020 - Metals (ICP/MS	) - Total Re	coverable	- RA						
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
7erSmifm	0ს00064	В	0 <b>0</b> 02g	0 <b>\text{\$\text{\$0}}</b> 00064	mLR3		11RS0R18 10:4g	12R04R18 18:01	g
Lithium	0.0056		0 <b>W</b> 0g0	0 <b>\@</b> 011	mLR3		11 <b>R</b> 60 <b>R</b> 18 10:4g	12R0MR18 20:06	g

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4000		g0	64	mLR3			11R25R18 10:0C	1
Chloride	2300		150	110	mLR3			12R04R18 10:0g	80
Fluoride	0.040	I	0110	0 <b>\</b> 062	mLR3			11R28R18 14:42	1
Sulfate	620		100	28	mLR3			12R06F18 10:08	20

I nie G: u f nPwoper I omya Gs wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

**Client Sample ID: FB-01** 

Date Collected: 11/20/18 11:25 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-11

**Matrix: Water** 

Method: 6020 - Metals	(ICP/MS) - Total Recoverable	9						
Analyte	Result Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ArseGc	0 <b>0</b> 0045 B	0 <b>0</b> 016	000045	mLR3		11R60R18 10:4g	11R60R18 15:62	g
7 arif m	0W004C B	0 <b>0</b> 002g	0 <b>10</b> 004C	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
7erSmifm	0 <b>\text{\$0}</b> 0064 B	0 <b>0</b> 002g	0000064	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
7oroG	0 <b>.0</b> 21 B	0 <b>0</b> g0	00021	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
I ancif m	0U6 B	0 <b>12</b> g	0116	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
I dromif m	0 <b>.0</b> 011 B	0 <b>0</b> 002g	0 <b>\@</b> 011	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
I obart	0 <b>\text{\$0}0040</b> B	0 <b>0</b> 002g	000040	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
3itdif m	0 <b>.0</b> 0011 B	0 <b>ს</b> 00g0	0 <b>\@</b> 011	mLR3		11 <b>R</b> 60R18 10:4g	11R60R18 15:62	g
9 orSbj eCf m	0 <b>.0</b> 020 B	0 <b>0</b> 01g	0 <b>\@</b> 020	mLR3		11R60R18 10:4g	11R60R18 15:62	g
hereGf m	0W00M B	000016	0 <b>0</b> 000M1	mLR3		11R60R18 10:4g	11R60R18 15:62	g

General Chemistry Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TotanDissorvej horijs	614	В	gW	614	mLR3			11R25R18 10:15	1
l dnorije	14	В	200	14	mLR3			12R04R18 0C:6g	1
Frfi orij e	00062	В	0110	0 <b>\</b> 062	mLR3			11R28R18 14:45	1
hfmPate	14	В	gW	14	mLR3			12R06R18 0C:2M	1

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### **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

SDG: Ashpond

### **Qualifiers**

#### **Metals**

Q	ualifier	Qualifier Description
U		Indicates that the compound was analyzed for but not detected.
Ι		The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

### **General Chemistry**

Qualifier	Qualifier Description
Ī	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry) Method Detection Limit MDL MLMinimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown) **PQL** Practical Quantitation Limit

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1 SDG: Ashpond

Client Sample ID: MW-2

Date Collected: 11/19/18 08:55 Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-1

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:35	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 17:07	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	421176	11/28/18 12:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:22	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	420988	11/27/18 13:30	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 08:55	CDH	TAL PEN

Lab Sample ID: 400-162396-2 **Client Sample ID: MW-3** Date Collected: 11/19/18 11:03 **Matrix: Water** 

Date Received: 11/20/18 15:40

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:39	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 17:10	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420777	11/26/18 10:16	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	421838	12/04/18 09:28	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:37	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	420988	11/27/18 13:25	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 11:03	CDH	TAL PEN

**Client Sample ID: MW-6** Lab Sample ID: 400-162396-3 Date Collected: 11/19/18 11:10

Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:54	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	422045	12/04/18 16:06	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 17:50	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422591	12/07/18 20:24	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	421838	12/04/18 09:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:41	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	421795	12/03/18 09:56	RRC	TAL PEN

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### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

SDG: Ashpond

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 11:10	CDH	TAL PEN

Lab Sample ID: 400-162396-4

**Matrix: Water** 

**Client Sample ID: MW-7** Date Collected: 11/19/18 12:25 Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:58	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	25	422045	12/04/18 16:10	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 17:53	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422591	12/07/18 19:34	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	421838	12/04/18 09:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:44	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	421795	12/03/18 10:00	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 12:25	CDH	TAL PEN

**Client Sample ID: MW-8** Lab Sample ID: 400-162396-5 Date Collected: 11/19/18 15:15

**Matrix: Water** 

Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 17:20	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	422045	12/04/18 16:13	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 17:57	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422591	12/07/18 19:59	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	421838	12/04/18 09:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:48	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	421795	12/03/18 10:00	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 15:15	CDH	TAL PEN

**Client Sample ID: MW-9** Lab Sample ID: 400-162396-6 Date Collected: 11/20/18 08:44 **Matrix: Water** 

Date Received: 11/20/18 15:40

Batch Batch Dilution Batch Prepared Prep Type Type Method Run **Factor** Number or Analyzed Analyst Lab Total Recoverable Prep 3005A 421465 11/30/18 10:45 DRE TAL PEN

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Client: Gulf Power Company TestAmerica Job ID: 400-162396-1 Project/Site: CCR Smith Plant

SDG: Ashpond

Client Sample ID: MW-9

Lab Sample ID: 400-162396-6

**Matrix: Water** 

Date Collected: 11/20/18 08:44 Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020	_	5	421723	11/30/18 17:47	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	422045	12/04/18 16:17	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	421838	12/04/18 09:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:51	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	421795	12/03/18 10:04	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/20/18 08:44	CDH	TAL PEN

**Client Sample ID: MW-10** Lab Sample ID: 400-162396-7 Date Collected: 11/20/18 10:30

**Matrix: Water** 

Date Received: 11/20/18 15:40

Batch Batch Dilution Batch **Prepared** Method Number or Analyzed Prep Type Type Run **Factor** Analyst Lab 3005A 421465 11/30/18 10:45 DRE Total Recoverable Prep TAL PEN Total Recoverable Analysis 6020 5 421723 11/30/18 17:55 DRE TAL PEN 3005A Total Recoverable DL TAL PEN Prep 421465 11/30/18 10:45 DRE 6020 Total Recoverable Analysis DL 200 422045 12/04/18 16:21 DRE TAL PEN Total/NA SM 2540C 420775 11/26/18 10:09 CLB TAL PEN Analysis 1 Total/NA Analysis SM 4500 CI- E 80 421838 12/04/18 10:05 RRC TAL PEN Total/NA Analysis SM 4500 F C 1 421135 11/28/18 12:55 BAB TAL PEN Total/NA SM 4500 SO4 E 30 421795 12/03/18 10:04 RRC TAL PEN Analysis Total/NA Analysis Field Sampling 1 421915 11/20/18 10:30 CDH TAL PEN

Lab Sample ID: 400-162396-8 Client Sample ID: MW-12

Date Collected: 11/19/18 12:33 Date Received: 11/20/18 15:40

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:43	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 17:14	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420777	11/26/18 10:16	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		10	421838	12/04/18 09:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421135	11/28/18 12:57	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	421795	12/03/18 09:22	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 12:33	CDH	TAL PEN

TestAmerica Job ID: 400-162396-1 SDG: Ashpond

Client Sample ID: DUP-01

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Date Collected: 11/19/18 11:33 Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-9

Analyst

421465 11/30/18 10:45 DRE

422591 12/07/18 20:03 DRE

420775 11/26/18 10:09 CLB

421838 12/04/18 10:05 RRC

421180 11/28/18 14:42 BAB

421795 12/03/18 10:08 RRC

Lab

TAL PEN

TAL PEN TAL PEN

TAL PEN

TAL PEN

TAL PEN

TAL PEN

TAL PEN

TAL PEN

TAL PEN

TAL PEN

TAL PEN

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:07	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420777	11/26/18 10:16	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		10	421838	12/04/18 09:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 14:35	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	421795	12/03/18 09:22	RRC	TAL PEN

Client Sample ID: DUP-02 Lab Sample ID: 400-162396-10 Date Collected: 11/20/18 07:44 **Matrix: Water** 

Date Received: 11/20/18 15:40

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Date Received: 11/20/18 15:40

3005A

6020

SM 2540C

SM 4500 CI- E

SM 4500 F C

SM 4500 SO4 E

Total Recoverable

Total Recoverable

Total/NA

Total/NA

Total/NA

Total/NA

Batch Batch Dilution Batch **Prepared Prep Type** Type Method **Factor** Number or Analyzed Run Prep Total Recoverable 3005A 421465 11/30/18 10:45 DRE Total Recoverable Analysis 6020 5 421723 11/30/18 16:10 DRE Total Recoverable Prep 3005A DL 421465 11/30/18 10:45 DRE Total Recoverable Analysis 6020 DL 100 422045 12/04/18 16:24 DRE 3005A RA Total Recoverable Prep 421465 11/30/18 10:45 DRE Total Recoverable Analysis 6020 RA 5 422045 12/04/18 18:01 DRE

RΔ

RA

Client Sample ID: FB-01 Lab Sample ID: 400-162396-11 Date Collected: 11/20/18 11:25 **Matrix: Water** 

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	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:32	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420777	11/26/18 10:16	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		1	421838	12/04/18 09:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 14:46	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	421795	12/03/18 09:27	RRC	TAL PEN

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Pensacola

TestAmerica Job ID: 400-1526C5-1 hDu: AsdyoG

Metals

Prep Batch: 39237L

I nieGt: ufnPwoperIomyaGS wro/ectRtite:IIWhmitdwnaGt

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1	v 3 -2	TotanWecoUerabre	3 ater	600MA	_
400-1526C5-1 - WA	v 3 -2	TotanWecoUerabre	3 ater	600MA	
400-1526C5-2	v 3 -6	TotanWecoUerabre	3 ater	600MA	
400-1526C5-2 - WA	v 3 -6	TotanWecoUerabre	3 ater	600MA	
400-1526C5-6	v 3 -5	TotanWecoUerabre	3 ater	600MA	
400-1526C5-6 - DL	v 3 -5	TotanWecoUerabre	3 ater	600MA	
400-1526C5-6 - WA	v 3 -5	TotanWecoUerabre	3 ater	600MA	
400-1526C5-4 - WA	v 3 -7	TotanWecoUerabre	3 ater	600MA	
400-1526C5-4 - DL	v 3 -7	TotanWecoUerabre	3 ater	600MA	
400-1526C5-4	v 3 -7	TotanWecoUerabre	3 ater	600MA	
400-1526C5-M	v 3 -8	TotanWecoUerabre	3 ater	600MA	
400-1526C5-M- WA	v 3 -8	TotanWecoUerabre	3 ater	600MA	
400-1526C5-M- DL	v 3 -8	TotanWecoUerabre	3 ater	600MA	
400-1526C5-5 - DL	v 3 -C	TotanWecoUerabre	3 ater	600MA	
400-1526C5-5	v 3 -C	TotanWecoUerabre	3 ater	600MA	
400-1526C5-7 - DL	v 3 -10	TotanWecoUerabre	3 ater	600MA	
400-1526C5-7	v 3 -10	TotanWecoUerabre	3 ater	600MA	
400-1526C5-8 - WA	v 3 -12	TotanWecoUerabre	3 ater	600MA	
400-1526C5-8	v 3 -12	TotanWecoUerabre	3 ater	600MA	
400-1526C5-C	DF w-01	TotanWecoUerabre	3 ater	600MA	
400-1526C5-10 - WA	DF w-02	TotanWecoUerabre	3 ater	600MA	
400-1526C5-10 - DL	DF w-02	TotanWecoUerabre	3 ater	600MA	
400-1526C5-10	DF w-02	TotanWecoUerabre	3 ater	600MA	
400-1526C5-11	BE-01	TotanWecoUerabre	3 ater	600MA	
v E 400-42145MR-A 9M	vetdoj EnaG^	TotanWecoUerabre	3 ater	600MA	
LI h 400-42145M2-A	Lab I oGronhamyne	TotanWecoUerabre	3 ater	600MA	
400-152402-l -C-E v h 9M	v atrik hyi^e	TotanWecoUerabre	3 ater	600MA	
400-152402-I -C-I v h D 9M	v atrik hyi^e Df yncate	TotanWecoUerabre	3 ater	600MA	

Analysis Batch: 39259(

bal Sample 🛭	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1	v 3 -2	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-2	v 3 -6	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-6	v 3 -5	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-4	v 3 -7	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-M	v 3 -8	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-5	v 3 -C	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-7	v 3 -10	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-8	v 3 -12	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-C	DF w-01	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-10	DFw-02	TotanWecoUerabre	3 ater	5020	42145N
400-1526C5-11	BE-01	TotanWecoUerabre	3 ater	5020	42145N
v E 400-42145MR-A 9M	vetdoj EnaG^	TotanWecoUerabre	3 ater	5020	42145N
LI h 400-42145MR2-A	Lab I oGtronhamyne	TotanWecoUerabre	3 ater	5020	42145N
400-152402-l -C-E v h 9M	v atrik hyi^e	TotanWecoUerabre	3 ater	5020	42145N
400-152402-I -C-I v h D 9M	v atrik hyi^e Df ynicate	TotanWecoUerabre	3 ater	5020	42145N

Analysis Batch: 399) 3L

bal Sample 🏻	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1 - WA	v 3 -2	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-2 - WA	v 3 -6	TotanWecoUerabre	3 ater	5020	42145M

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TestAmerica we Gacora

12/14/2018

TestAmerica Job ID: 400-1526C5-1 hDu: AsdyoG

wro/ectRtite: I I Whmitd wna Gt

InieCt: ufnPwoperIomyaCS

Metals 4Continue80

Analysis Batch: 399) 3L 4Continue80

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-6 - DL	v 3 -5	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-6 - WA	v 3 -5	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-4 - DL	v 3 -7	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-4 - WA	v 3 -7	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-M- DL	v 3 -8	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-M- WA	v 3 -8	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-5 - DL	v 3 -C	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-7 - DL	v 3 -10	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-8 - WA	v 3 -12	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-10 - DL	DF w-02	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-10 - WA	DF w-02	TotanWecoUerabre	3 ater	5020	42145M

**Analysis Batch: 399L12** 

bal Sample II	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-6 - WA	v 3 -5	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-4 - WA	v 3 -7	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-M- WA	v 3 -8	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-10 - WA	DF w-02	TotanWecoUerabre	3 ater	5020	42145M

**General Chemistry** 

Analysis Batch: 39) 55L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1	v 3 -2	TotanRNA	3 ater	hv 2M40l	
400-1526C5-6	v 3 -5	TotanRNA	3 ater	hv 2M40l	
400-1526C5-4	v 3 -7	TotanRNA	3 ater	hv 2M40l	
400-1526C5-M	v 3 -8	TotanRNA	3 ater	hv 2M40l	
400-1526C5-5	v 3 -C	TotanRNA	3 ater	hv 2M40l	
400-1526C5-7	v 3 -10	TotanRNA	3 ater	hv 2M40l	
400-1526C5-10	DFw-02	TotanRNA	3 ater	hv 2M40l	
v E 400-42077M₹	vetdoj EnaG^	TotanRNA	3 ater	hv 2M40l	
LI h 400-42077MR2	Lab I oGronhamyne	TotanRNA	3 ater	hv 2M40l	
400-1526C5-1 DF	v 3 -2	TotanRNA	3 ater	hv 2M40l	

Analysis Batch: 39) 555

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-2	v 3 -6	TotanRNA	3 ater	hv 2M40l	_
400-1526C5-8	v 3 -12	TotanRNA	3 ater	hv 2M40l	
400-1526C5-C	DF w-01	TotariRIA	3 ater	hv 2M40l	
400-1526C5-11	BE-01	TotanRNA	3 ater	hv 2M40l	
v E 400-420777₹	vetdoj EnaG^	TotanRNA	3 ater	hv 2M40l	
LI h 400-420777F2	Lab I oGtronhamyne	TotariRIA	3 ater	hv 2M40l	
400-15267MA-4 DF	Df yricate	TotanRNA	3 ater	hv 2M40l	

Analysis Batch: 39) 166

bal Sa	ample <b>I</b>	Client Sample	Prep xype	Matrid	Metho8	Prep Batch
400-15	26C5-1	v 3 -2	TotanRNA	3 ater	hv 4M00 hx 4 O	
400-15	2605-2	v 3 -6	TotanRNA	3 ater	hv 4M00 hx 4 O	
v E 400	0-420C88 <b>R</b> 5	v etdoj EnaG^	TotanRNA	3 ater	hv 4M00 hx 4 O	
LI h 40	00-420C88F7	Lab I o Gronhamyne	TotanNA	3 ater	hv 4M00 hx 4 O	

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TestAmerica we Gacora

12/14/2018

TestAmerica Job ID: 400-1526C5-1

InieCt: ufnPwoperIomyaCS wro/ectRtite: I I Whmitd wra Gt

# **General Chemistry 4Continue80**

### Analysis Batch: 39) 166 4Continue80

bal Sample 🗗	Client Sample <b></b> ☐	Prep xype	Matrid	Metho8	Prep Batch
v WL 400-420C88F	Lab I oGtronhamyre	TotanNA	3 ater	hv 4M00 hx 4 O	
400-1526C5-2 v h	v 3 -6	TotanRNA	3 ater	hv 4M00 hx 4 O	
400-1526C5-2 v h	O v 3 -6	TotanRNA	3 ater	hv 4M00 hx 4 O	

### Analysis Batch: 3922( L

bal Sample II	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1	v 3 -2	TotanRA	3 ater	hv 4M00 BI	
400-1526C5-2	v 3 -6	Totan <b>R</b> IA	3 ater	hv 4M00 BI	
400-1526C5-6	v 3 -5	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-4	v 3 -7	TotanRIA	3 ater	hv 4M00 BI	
400-1526C5-M	v 3 -8	Totan <b>R</b> IA	3 ater	hv 4M00 BI	
400-1526C5-5	v 3 -C	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-7	v 3 -10	TotanRIA	3 ater	hv 4M00 BI	
400-1526C5-8	v 3 -12	Totan <b>R</b> IA	3 ater	hv 4M00 BI	
v E 400-42116MR6	vetdoj EnaG^	TotanRNA	3 ater	hv 4M00 BI	
LI h 400-42116M <b>4</b>	Lab I o@ronhamyre	TotanRIA	3 ater	hv 4M00 BI	
240-104M05-E-2 v hD	v atrik hyi^e Df ynicate	Totan <b>R</b> IA	3 ater	hv 4M00 BI	
240-104M05-D-2 v h	v atrik hyi^e	TotanRNA	3 ater	hv 4M00 BI	
240-104M21-l -Mv h	v atrik hyi^e	TotanRIA	3 ater	hv 4M00 B1	
240-104M21-l -Mv hD	v atrik hyi^e Df ynicate	TotanRIA	3 ater	hv 4M00 BI	

### **Analysis Batch: 392257**

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1	v 3 -2	TotanRNA	3 ater	hv 4M00 l n O	
v E 400-421175FS	vetdoj EnaG^	TotanRNA	3 ater	hv 4M00 I n O	
LI h 400-421175R7	Lab I oGtronhamyre	TotanRNA	3 ater	hv 4M00 I a O	
v WL 400-421175R6	Lab I oGtronhamyre	TotanNA	3 ater	hv 4M001 a O	
400-15267MA-1 v h	v atrik hyi^e	TotanRNA	3 ater	hv 4M00 I a O	
400-15267MA-1 v hD	v atrik hyi^e Df ynicate	TotanRNA	3 ater	hv 4M00 I a O	

### **Analysis Batch: 39226)**

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-C	DFw-01	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-10	DFw-02	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-11	BE-01	TotanRNA	3 ater	hv 4M00 BI	
v E 400-421180R6	vetdoj EnaG^	TotanRNA	3 ater	hv 4M00 BI	
LI h 400-421180F4	Lab I o@tronhamyre	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-Cv h	DF w-01	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-Cv hD	DF w-01	TotanRNA	3 ater	hv 4M00 BI	
400-1526C5-A-17 DF	Df yricate	TotanRNA	3 ater	hv 4M00 BI	

### Analysis Batch: 39251L

bal Sample IT	Client Sample <b> ☐</b>	Prep xype	Matrid	Metho8	Prep Batch
400-152605-6	v 3 -5	TotanRNA	3 ater	hv 4M00 hx 4 O	
400-1526C5-4	v 3 -7	Totan <b>R</b> IA	3 ater	hv 4M00 hx 4 O	
400-1526C5-M	v 3 -8	Totan <b>R</b> IA	3 ater	hv 4M00 hx 4 O	
400-1526C5-5	v 3 -C	TotanRIA	3 ater	hv 4M00 hx 4 O	
400-1526C5-7	v 3 -10	Totan <b>R</b> IA	3 ater	hv 4M00 hx 4 O	
400-1526C5-8	v 3 -12	Totan <b>R</b> IA	3 ater	hv 4M00 hx 4 O	
400-1526C5-C	DF w-01	TotanRIA	3 ater	hv 4M00 hx 4 O	
400-1526C5-10	DF w-02	Totan <b>R</b> IA	3 ater	hv 4M00 hx 4 O	

TestAmerica we Gacora

hDu: AsdyoG

# **QC Association Summary**

InieCt: ufnPwoperIomyaCS wro/ectRtite: I I Whmitd wra Gt TestAmerica Job ID: 400-1526C5-1

hDu: AsdyoG

### **General Chemistry 4Continue80**

### Analysis Batch: 39251L 4Continue80

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8 Prep Batch
400-1526C5-11	BE-01	TotanRA	3 ater	hv 4M00 hx 4 O
v E 400-4217CMB	vetdoj EnaG^	TotanRA	3 ater	hv 4M00 hx 4 O
LI h 400-4217CMR	Lab I oGtronhamyre	TotanRA	3 ater	hv 4M00 hx 4 O
v WL 400-4217CMR6	Lab I o@ronhamyre	TotanRNA	3 ater	hv 4M00 hx 4 O
400-1524MC-A-1 v h	v atrik hyi^e	TotanRNA	3 ater	hv 4M00 hx 4 O
400-1524MC-A-1 v h D	v atrik hyi^e Df yncate	TotanRA	3 ater	hv 4M00 hx 4 O
400-152M58-A-1 v h	v atrik hyi^e	TotanRA	3 ater	hv 4M00 hx 4 O
400-152M58-A-1 v hD	v atrik hyi^e Df ynicate	TotanNA	3 ater	hv 4M00 hx 4 O

### Analysis Batch: 3926(6

bal Sample II	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-2	v 3 -6	TotanRNA	3 ater	hv 4M00 I n O	-
400-1526C5-6	v 3 -5	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-4	v 3 -7	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-M	v 3 -8	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-5	v 3 -C	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-7	v 3 -10	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-8	v 3 -12	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-C	DF w-01	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-10	DF w-02	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-11	BE-01	TotanRNA	3 ater	hv 4M001 a O	
v E 400-421868FS	vetdoj EnaG^	TotanRNA	3 ater	hv 4M001 a O	
LI h 400-421868R7	Lab I oGronhamyne	TotanRNA	3 ater	hv 4M00 I a O	
v WL 400-421868R6	Lab I oGtronhamyne	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-2 v h	v 3 -6	TotanRNA	3 ater	hv 4M001 a O	
400-1526C5-2 v hD	v 3 -6	TotanRNA	3 ater	hv 4M00 I a O	

### Fiel8 Service / Mol ile bal

### **Analysis Batch: 39212L**

bal Sample 🏻	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-1	v 3 -2	TotanRNA	3 ater	Bienji hamynin Gg	
400-1526C5-2	v 3 -6	Totan <b>R</b> IA	3 ater	Bienji hamynin Gg	
400-1526C5-6	v 3 -5	TotanRIA	3 ater	Bienji hamynin Gg	
400-1526C5-4	v 3 -7	TotanRIA	3 ater	Bienji hamynin Gg	
400-1526C5-M	v 3 -8	TotanRIA	3 ater	Bienji hamynin Gg	
400-1526C5-5	v 3 -C	Totan <b>R</b> IA	3 ater	Bienji hamynin Gg	
400-1526C5-7	v 3 -10	TotanRIA	3 ater	Bienji hamynin Gg	
400-1526C5-8	v 3 -12	TotanRNA	3 ater	Bieni hamyniQq	

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TestAmerica Job ID: 400-162396-1

SDG: Ashpond

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-421465/1-A ^5

**Matrix: Water** 

**Analysis Batch: 421723** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Client Sample ID: Method Blank **Prep Type: Total Recoverable Prep Batch: 421465** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		11/30/18 10:45	11/30/18 15:42	5
Barium	0.00049	U	0.0025	0.00049	mg/L		11/30/18 10:45	11/30/18 15:42	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		11/30/18 10:45	11/30/18 15:42	5
Boron	0.021	U	0.050	0.021	mg/L		11/30/18 10:45	11/30/18 15:42	5
Calcium	0.13	U	0.25	0.13	mg/L		11/30/18 10:45	11/30/18 15:42	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		11/30/18 10:45	11/30/18 15:42	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		11/30/18 10:45	11/30/18 15:42	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		11/30/18 10:45	11/30/18 15:42	5
Molybdenum	0.0020	U	0.015	0.0020	mg/L		11/30/18 10:45	11/30/18 15:42	5
Selenium	0.00071	U	0.0013	0.00071	mg/L		11/30/18 10:45	11/30/18 15:42	5

Lab Sample ID: LCS 400-421465/2-A

**Matrix: Water** 

**Analysis Batch: 421723** 

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

**Prep Batch: 421465** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit Limits %Rec Arsenic 0.0500 0.0495 mg/L 99 80 - 120 Barium 0.0500 0.0483 mg/L 97 80 - 120 Beryllium 0.0500 0.0560 112 80 - 120 mg/L Boron 106 80 - 120 0.100 0.106 mg/L Calcium 5.00 mg/L 98 80 - 120 4.89 Chromium 0.0500 100 0.0498 mg/L 80 \_ 120 Cobalt 0.0500 0.0518 mg/L 104 80 - 120 Lithium 0.0500 0.0548 mg/L 110 80 - 120 Molybdenum 0.0500 0.0477 mg/L 95 80 - 120 Selenium 0.0500 0.0492 mg/L 98 80 - 120

Lab Sample ID: 400-162402-C-9-B MS ^5

**Matrix: Water** 

**Analysis Batch: 421723** 

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** 

**Prep Batch: 421465** Spike MS MS Sample Sample %Rec. Result Qualifier Added %Rec Analyte Result Qualifier Unit Limits Arsenic 0.023 0.0500 0.0745 75 - 125 mg/L 102 Barium 0.0014 I 0.0500 0.0512 mg/L 100 75 - 125 Beryllium 0.00034 U 0.0500 0.0504 mg/L 101 75 - 125 Boron 0.030 I 0.100 0.135 mg/L 104 75 - 125 Calcium 6.0 5.00 10.9 mg/L 99 75 - 125 75 - 125 Chromium 0.0500 0.0509 102 0.0011 U mg/L 0.0500 75 - 125 Cobalt 0.00040 U 0.0530 mg/L 106 Lithium 0.0011 U 0.0500 0.0510 mg/L 102 75 - 125Molybdenum 0.0046 0.0500 0.0544 mg/L 99 75 - 125 0.0500 75 - 125 Selenium 0.0033 0.0509 95 mg/L

Lab Sample ID: 400-162402-C-9-C MSD ^5

**Matrix: Water** 

Analyte

Arsenic

**Analysis Batch: 421723** 

**Prep Type: Total Recoverable Prep Batch: 421465** Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier RPD Unit D %Rec Limits Limit 0.023 0.0500 0.0753 mg/L 104 75 - 125 20

TestAmerica Pensacola

**Client Sample ID: Matrix Spike Duplicate** 

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

SDG: Ashpond

### Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-162402 Matrix: Water							Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable							
Analysis Batch: 421723									Prep Ba	atch: 42				
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Barium	0.0014	I	0.0500	0.0516		mg/L		100	75 - 125	1	20			
Beryllium	0.00034	U	0.0500	0.0506		mg/L		101	75 - 125	0	20			
Boron	0.030	1	0.100	0.131		mg/L		101	75 - 125	3	20			
Calcium	6.0		5.00	11.0		mg/L		100	75 - 125	1	20			
Chromium	0.0011	U	0.0500	0.0521		mg/L		104	75 - 125	2	20			
Cobalt	0.00040	U	0.0500	0.0536		mg/L		107	75 - 125	1	20			
Lithium	0.0011	U	0.0500	0.0516		mg/L		103	75 - 125	1	20			
Molybdenum	0.0046	1	0.0500	0.0542		mg/L		99	75 - 125	0	20			
Selenium	0.0033		0.0500	0.0509		mg/L		95	75 - 125	0	20			

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-420775/1 Matrix: Water Analysis Batch: 420775	MB	MB				•	Client Sam	ple ID: Method Prep Type: To	
Analyte		Qualifier	BOL	MDI	I Imié	ъ.	Duamarad	Analymad	Dil Fee
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			11/26/18 10:09	1

Lab Sample ID: LCS 400-420775/2 Matrix: Water Analysis Batch: 420775				Clie	ent Sar	mple ID	: Lab Control Sample Prep Type: Total/NA
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits

Total Dissolved Solids	293	350	mg/L	119	78 - 122		
Lab Sample ID: 400-162396-1 DU					lient Samp	ole ID: MW-2	

Lab Sample 1D. 400-102390-1 DO	Chefft Sample ID. WW-2
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 420775	

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	88		88.0		mg/L		 0	5

Lab Sample ID: MB 400-420777/1	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 420777	

-	MB	MB
A L. 4 .	D	_

Analyte	Result Qualifier	PQL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4 U	5.0	3.4 mg/L			11/26/18 10:16	1

Lab Sample ID: LCS 400-420777/2 Matrix: Water Analysis Batch: 420777				Clier	nt Sai	mple ID	Prep Type: Total/N	
	Spike	LCS	LUS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Dissolved Solids	293	256		mg/L		87	78 - 122	

TestAmerica Pensacola

TestAmerica Job ID: 400-162396-1

SDG: Ashpond

Client: Gulf Power Company Project/Site: CCR Smith Plant

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Client Sample ID: Duplicate** Prep Type: Total/NA

Lab Sample ID: 400-162375-A-4 DU **Matrix: Water** 

**Analysis Batch: 420777** Sample Sample DU DU RPD

Analyte Result Qualifier Result Qualifier Unit D RPD Limit Total Dissolved Solids 226 0 230 mg/L

Method: SM 4500 Cl- E - Chloride, Total

Client Sample ID: Method Blank Lab Sample ID: MB 400-421176/6 Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421176** MB MB

PQL Result Qualifier **MDL** Unit Analyte Analyzed Dil Fac Prepared Chloride 1.4 U 2.0 1.4 mg/L 11/28/18 12:26

Lab Sample ID: LCS 400-421176/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421176** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits Chloride 30.0 90 - 110 31.9 mg/L

Lab Sample ID: MRL 400-421176/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421176** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Limits Unit D %Rec Chloride 2.00 1.60 Ī mg/L 80 50 - 150

Lab Sample ID: 400-162375-A-1 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421176** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 15 10.0 25.1 97 73 - 120 mg/L

Lab Sample ID: 400-162375-A-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421176** 

Sample Sample Spike MSD MSD %Rec. **RPD** Added Result Qualifier Limits RPD Analyte Result Qualifier Unit %Rec Limit Chloride 15 10.0 24.8 94 73 - 120 mg/L

Lab Sample ID: MB 400-421838/6 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421838** 

MB MB

Result Qualifier PQL Analyte **MDL** Unit Prepared Analyzed Dil Fac Chloride 1.4 U 2.0 1.4 mg/L 12/04/18 09:25

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1 SDG: Ashpond

# Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: LCS 400-4 Matrix: Water	421838/7					Clie	nt Sa	mple ID	: Lab Control Sample Prep Type: Total/NA
Analysis Batch: 421838									0/ 5
			Spike		LCS				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride			30.0	32.4		mg/L		108	90 - 110
Lab Sample ID: MRL 400-	421838/3					Clie	nt Sa	mple ID	: Lab Control Sample
Matrix: Water									Prep Type: Total/NA
Analysis Batch: 421838									,
7 mary old Batom 42 1000			Spike	MRL	MRL				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride			2.00	1.69	I	mg/L		84	50 - 150
Lab Sample ID: 400-16239	96-2 MS							CI	ient Sample ID: MW-3
Matrix: Water									Prep Type: Total/NA
Analysis Batch: 421838									
, , , , , , , , , , , , , , , , , , , ,	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	13		10.0	23.5		mg/L		107	73 - 120

Lab Sample ID: 400-162396-2 MSD								Client Sample ID: MW						
Matrix: Water									Prep Ty	pe: Tot	al/NA			
Analysis Batch: 421838														
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Chloride	13		10.0	23.2		mg/L		105	73 - 120	1	8			

### Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-421135/3

**Matrix: Water** 

Matrix: Water

**Analysis Batch: 421135** 

•	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			11/28/18 11:49	1
ah Sammla   D.   CC 400 424425/4						Olion	t Commis ID.	Lab Cantual C	Name la

Lab Sample ID: LCS 400-421135/4 Matrix: Water Analysis Batch: 421135				Clien	ıt Saı	mple ID	: Lab Contro Prep Type	
Analyte	Spike Added		LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Fluoride	4.00	3.98		mg/L		100	90 - 110	
Lab Sample ID: 240-104506-B-2 MSD				Client S	amp	le ID: N	latrix Spike	Duplicate

Analysis Batch: 421135											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Fluoride	0.96		1.00	1.92		mg/L		96	75 - 125	0	4

TestAmerica Pensacola

Prep Type: Total/NA

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-1

SDG: Ashpond

# Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 240-104506- Matrix: Water	D-2 MS						CI	ient Sa	mple ID: N		•
Analysis Batch: 421135									i ich i y	. 10tt	AII/14/A
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Fluoride	0.96		1.00	1.92		mg/L		96	75 - 125		
 Lab Sample ID: 240-104521-	C-5 MS						CI	ient Sa	mple ID: I	Matrix S	Spike
Matrix: Water									Prep Typ	e: Tota	al/NA
Analysis Batch: 421135											
•	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Fluoride	0.93		1.00	1.89		mg/L		96	75 - 125		
Lab Sample ID: 240-104521- Matrix: Water	C-5 MSD					Client	Samp	le ID: N	latrix Spik Prep Typ		
Analysis Batch: 421135											
•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Fluoride	0.93		1.00	1.89		mg/L		96	75 - 125	0	4
_ Lab Sample ID: MB 400-421	180/3						Clie	ent Sam	nple ID: Me	ethod E	Blank
Matrix: Water									Prep Typ		
Analysis Batch: 421180											
•		MB MB									
Analyte	Re	sult Qualifier		PQL	MDL Unit		D P	repared	Analyz	ed [	Dil Fac

Fluoride	0.032 0	0.10	0.032 Hig/L	11/20/16 14.20
Lab Sample ID: LCS 400-421180/4 Matrix: Water				Client Sample ID: Lab Control Sample Prep Type: Total/NA

Analysis Batch: 421180							
,	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier	Unit I	D %Rec	Limits	
Fluoride	4.00	3.90		mg/L	98	90 - 110	

Lab Sample ID: 400-162396-9 MS	Client Sample ID: DUP-01
Matrix: Water	Prep Type: Total/NA

**Analysis Batch: 421180** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride	0.13		1.00	1.10		mg/L		97	75 - 125	

Lab Sample ID: 400-16239	6-9 MSD							Clie	nt Sample	D: Dl	JP-01
Matrix: Water									Prep Typ	pe: Tot	al/NA
Analysis Batch: 421180											
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Fluoride	0.13		1.00	1.10		mg/L		97	75 - 125	0	4

Lab Sample ID: 400-162396-A-17 DU					Client	Sample ID: Dup	licate	
Matrix: Water						<b>Prep Type: Tot</b>	al/NA	
Analysis Batch: 421180								
Sample	Sample	DU	DU				RPD	
Analyte	Ouglifier	Popult	Ouglifier	Hoit	D.	DDD	Limit	

Analyte Result Qualifier Result Qualifier Fluoride 0.032 U mg/L

TestAmerica Pensacola

11/20/10 11:20

TestAmerica Job ID: 400-162396-1

Client: Gulf Power Company Project/Site: CCR Smith Plant

SDG: Ashpond

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-420988/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 420988** 

MR MR Analyte Result Qualifier PQL **MDL** Unit Analyzed Dil Fac D Prepared Sulfate 1.4 U 5.0 1.4 mg/L 11/27/18 13:19

Lab Sample ID: LCS 400-420988/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 420988** 

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit %Rec 15.0 90 - 110 Sulfate 16.1 mg/L 107

Lab Sample ID: MRL 400-420988/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 420988

Spike MRL MRL %Rec. Added Result Qualifier Analyte Unit D %Rec Limits

5.00

Lab Sample ID: 400-162396-2 MS Client Sample ID: MW-3 **Matrix: Water** Prep Type: Total/NA

4.48 I

mg/L

90

50 - 150

Sulfate

**Analysis Batch: 420988** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Sulfate 1.4 U 10.0 8.50 85 77 - 128 mg/L

Lab Sample ID: 400-162396-2 MSD Client Sample ID: MW-3 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 420988** 

Spike MSD MSD %Rec. RPD Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits RPD Limit Sulfate 10.0 1.4 U 8.92 89 77 - 128 mg/L

Lab Sample ID: MB 400-421795/6 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421795** 

MB MB Analyte Result Qualifier PQL MDL Unit Dil Fac D Prepared Analyzed Sulfate 14 U 5.0 1.4 mg/L 12/03/18 09:16

Lab Sample ID: LCS 400-421795/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Spike LCS LCS %Rec. Added Result Qualifier Limits **Analyte** Unit %Rec Sulfate 15.0 15.3 mg/L 102 90 - 110

# **QC Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant

Analyte

Lab Sample ID: 400-162568-A-1 MSD

TestAmerica Job ID: 400-162396-1

%Rec.

Limits

**Client Sample ID: Matrix Spike Duplicate** 

D %Rec

SDG: Ashpond

**RPD** 

Limit

RPD

### Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Sample Sample

Result Qualifier

Lab Sample ID: MRL 400-42° Matrix: Water	1795/3					Clie	nt Saı	mple ID	: Lab Contr Prep Type	
Analysis Batch: 421795									a. –	
			Spike	MRL	MRL				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate			5.00	4.12	I	mg/L		82	50 - 150	
 Lab Sample ID: 400-162459-	A-1 MS						CI	ient Sa	mple ID: Ma	ntrix Spike
Matrix: Water									Prep Type	: Total/NA
Analysis Batch: 421795										
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	720		9.90	696	J3	mg/L		-277	77 - 128	
Lab Sample ID: 400-162459- Matrix: Water Analysis Batch: 421795	A-1 MSD					Client	Samp	le ID: N	Matrix Spike Prep Type	

Sulfate	720	9.90	688 J3	mg/L	-355	77 - 128	1	5
Lab Sample ID: 400-16256	8-A-1 MS				Client Sa	ample ID:	Matrix S	Spike
Matrix: Water						Prep Ty	pe: Tota	al/NA
	Lab Sample ID: 400-16256 Matrix: Water	Lab Sample ID: 400-162568-A-1 MS Matrix: Water	Lab Sample ID: 400-162568-A-1 MS  Matrix: Water  Client Sample ID: 400-162568-A-1 MS	Lab Sample ID: 400-162568-A-1 MS  Matrix: Water  Client Sample ID: I	Lab Sample ID: 400-162568-A-1 MS  Matrix: Water  Client Sample ID: Matrix: Prep Type: Tot			

MSD MSD

Result Qualifier Unit

Spike

Added

										por rotami
Analysis Batch: 421795										
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	1.4	U	10.0	8.07		mg/L	_	81	77 - 128	

Matrix: Water									Prep Ty	pe: Tot	al/NA
Analysis Batch: 421795											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sulfate	1.4	U	10.0	8.74	J3	mg/L		87	77 - 128	8	5

	Sampler:	Lab PM:	5	Carrier Tranking Note)	ICOC No.	
оrmation	Oct Dishes	Whitmire, Cheyenne	C.		400-53432-23565,1	
Culent Contact: Kristi Mitchell	Phone: 380 7458	E-Mall: cheyenne.whitmi	E-Mall: cheyenne.whitmire@testamericainc.com		Page:	
Company: Gulf Power Company			A	4 4	John : Wash	
Address:	Due Date Requested:		Analysis requested	seled	100 710	
BIN 731 One Energy Place			- 20			
City: Pensacola	TAT Requested (days):		P\$2 '8			
State, Ztp: FL, 32520			8	光光		
Phone: 850-444-6427(Tel)	Po #: Purchase Order not required	358 <sup>-</sup> C1	-inona		G-Amchlor S-H2SO4	0
Emeil: krmitche@southemco.com	WO#:	No)	2,0M,i	200 good	1 - Ice J - DI Water	Jecanydrate
Project Name: CCR Smith Plant	Project #: 40006609	28, Ra	4500 1,00,1		K-EDTA L-EDA	secify)
Site:	SSOW#;	SD (Y	Solids, D,63,68	noo lo	Other	
Sample Identification	Sample Date Time Garanale	Matrix (Waveter, Sweeter, Sweeter, Ownersbeet, Ownersb	Ediosomicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicologicolo	redmuN laso		
	X	C X	0		Special Instructions/Note:	/Note:
2-MM-2	11/19/18/085S G-	Water	メ			
2.5 MW-3	11 19 18 (103 CT	Water				
9-MM of	11/19/18 1110 G	Water				
CO WWW-7	4)19/18 11935 C	Water				
MW-8	-D (C) 21 21/11/11	Water				
MW-9	11/20/18 OS 449 B	Water				
MW-10	11/20 18 1030 G	Water				
MW-12	11/19/18 1233 G	Water				
D-0-01	11/19/18 1133 6	Water				
Dup-03	0 HHLO 81/02/11	Water				
FB-01	1 35/11 1/20/11	Water	ナメーナ			
Possible Hazard Identification	incipality and Indianality		ee may	sessed If samples are retai	ined longer than 1 month)	
sted: 1, II, IV, Other (specify)	(MOLVING)		Special Instructions/QC Requirements	oosal by Lab	Archive For Months	60
Empty Kit Relinquished by:	Date:	Time:	1000	Method of Shipment:		
Relinquished by	Detertime:  30 1/8 (540	Company ROA Re	Received W.	Date/Jime;	Wiedwood 31	
		Company	Coved by.	Date/Time:	5	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: Custody Seal No.:		3	Cooler Temperature(s) °C and Other Remarks	larks.		
18						

**TestAmerica** 

**Chain of Custody Record** 

3355 McLemore Drive Pensacola, Fl. 32514 Phone (850) 474-1001 Fax (850) 478-2671

TestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-162396-1 SDG Number: Ashpond

List Source: TestAmerica Pensacola

Login Number: 162396 List Number: 1

Creator: Whitmire, Chevenne R

Creator: Whitmire, Cheyenne R		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 1.5°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Pensacola

### **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-162396-1
SDG: Ashpond

# Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	12-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA180023	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-162396-2

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Cheyrondruchitmin

Authorized for release by: 12/28/2018 2:03:28 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-2

SDG: Ashpond

Job ID: 400-162396-2

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-162396-2

#### **RAD**

Method(s) PrecSep\_0: Radium 228 Prep Bach 403456: The following samples were reduced due to potential matrix interference: MW-2 (400-162396-1), MW-3 (400-162396-2), MW-7 (400-162396-4), MW-9 (400-162396-6), MW-10 (400-162396-7) and DUP-02 (400-162396-10). The samples had yellow discoloration, sediment, and a strong sulfur odor. Sample 310-144991-1 was reduced due to limited sample volume.

Method(s) PrecSep-21: Radium 226 Prep Bach 403442: The following samples were reduced due to potential matrix interference: MW-2 (400-162396-1), MW-3 (400-162396-2), MW-7 (400-162396-4), MW-9 (400-162396-6), MW-10 (400-162396-7) and DUP-02 (400-162396-10). The samples had yellow discoloration, sediment, and a strong sulfur odor. Sample 310-144991-1 was reduced due to limited sample volume.

# **Method Summary**

I rite Gt: u f riPwop er I omya Gs wro/ect Rhite: I I Wh mitd wra Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

Method	Method Description	Protocol	Laboratory
C613	Waj if m-225 (u Fwl )	h8 945	TAL hL
C620	Waj if m-229 (u Fwl )	h8 945	TAL hL
Wa225_Wa229	lombiGej Wajifm-225 aGj Wajifm-229	TAL-hTL	TAL hL
wrechey_0	wreyaratioG wreciyitate heyaratioG	NoGe	TAL hL
wrechey-21	wreyaratioG wreciyitate heyaratioG(21-DaSIGu roptd)	NoŒ	TAL hL

#### **Protocol References:**

No@ = No@

h8 945 = "Test Metdoj s For EvanfatiQg horij 8 aste, wdSsicanfR demicanMetdoj s", Tdirj Ej itioG, November 1095 AQ Its Uyj ates.

TAL-hTL = TestAmerica Laboratories, ht. Lof is, FacinitShtaQ arj OyeratiQ wrocej f re.

#### **Laboratory References:**

TAL hL = TestAmerica ht. Lof is, 16713 Wj er TrainNortd, Eartd I itS, MO 56043, TEL (614)2C9-9355

TestAmerica we Gsacora

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-2 SDG: Ashpond

pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-1	MW-2	Water	11/19/18 08:55	11/20/18 15:40
400-162396-2	MW-3	Water	11/19/18 11:03	11/20/18 15:40
400-162396-3	MW-6	Water	11/19/18 11:10	11/20/18 15:40
400-162396-4	MW-7	Water	11/19/18 12:25	11/20/18 15:40
400-162396-5	MW-8	Water	11/19/18 15:15	11/20/18 15:40
400-162396-6	MW-9	Water	11/20/18 08:44	11/20/18 15:40
400-162396-7	MW-10	Water	11/20/18 10:30	11/20/18 15:40
400-162396-8	MW-12	Water	11/19/18 12:33	11/20/18 15:40
400-162396-9	DUP-01	Water	11/19/18 11:33	11/20/18 15:40
400-162396-10	DUP-02	Water	11/20/18 07:44	11/20/18 15:40
400-162396-11	FB-01	Water	11/20/18 11:25	11/20/18 15:40

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InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

Client Sample ID: MW-2

Lab Sample ID: 400-162396-1

**Matrix: Water** 

Date Collected: 11/19/18 08:55 Date Received: 11/20/18 15:40

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.596		0314C	03198	1300	030069	yl iRL	11R2CR18 19:08	12R21R18 09:96	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier			40 - 110					113 2318 1: 908	1/3/13/80:95	1

Method: 9320 - Rac	dium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
. aj if m-228	03157	U	03259	03255	1300	03448	yl iRL	11R2CR18 15:90	12R1R18 11:9C	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	10/		40 - 110					113 23 8 169 0	1/3/13/8 119 2	1
. Carrier	85 <b>\</b> 4		40 - 110					113 2318 169 0	1/3/13/8 119 2	1

Method: Ra226 Ra	228 - Com	nbined Rad	dium-226 a	nd Radium	-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.763		03604	0360C	9300	03448	yl iRL		12R27F18 19:10	1

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: MW-3** 

Lab Sample ID: 400-162396-2

**Matrix: Water** 

Date Collected: 11/19/18 11:03 Date Received: 11/20/18 15:40

		,	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.33		03227	03295	1300	03114	yl iRL	11R2CR18 19:08	12R21R18 09:96	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	25Y		40 - 110					113 2318 1: 908	1/3/13/80:95	1
_			40 - 110					113 23 8 1: 908	1/3/13/18 0: 9 5	
Method: 9320 - F	Radium-228 (	(GFPC)	Count	Total						

Method: 9320 - F	Radium-228 (	GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.846		03406	03411	1300	039C1	yl iRL	11R2CR18 15:90	12R1R8 11:9C	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	25Y		40 - 110					113 23 8 169 0	1/3/13/8 119 2	1
. Carrier	7: YI		40 - 110					113 2318 169 0	1/3/13/8 119 2	1

Method: Ra226 R	a228 - Comb	oined Rac	lium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result C	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.18		03456	03484	9300	039C1	yl iRL		12R27F18 19:10	1

I nie G: u f nPwoper I omya GS wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

Client Sample ID: MW-6

Date Collected: 11/19/18 11:10 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-3

Matrix: Water

Method: 9315 - F	Radium-226 (	(GFPC)	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	9.89		03968	1304	1300	030868	yl iRL	11F2CF18 19:08	12R21R18 09:96	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	25Y		40 - 110					113 23 8 1: 908	1/3/13/80:95	1

_										•
Method: 9320 - F	Radium-228 (	GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	17.5		03019	1389	1300	03414	yl iRL	11R2CR18 15:90	12R1R8 11:9C	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	25Y		40 - 110					113 23 8 169 0	1/3/13/8 119 2	1
. Carrier	80 Y		40 - 110					113 2318 169 0	1/3/13/8 119 2	1

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	27.4		1305	2312	9300	03414	yl iRL		12R27F18 19:10	1

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: MW-7** Date Collected: 11/19/18 12:25

Lab Sample ID: 400-162396-4

**Matrix: Water** 

Date Received: 11/20/18 15:40

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	44.9		1362	4329	1300	03129	yl iRL	11R2CR18 19:08	12R21R18 09:97	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2818		40 - 110					113 23/8 1: 908	1/3/13/80:97	1

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	8.57		03796	130C	1300	03400	yl iRL	11R2CR18 15:90	12R1R18 11:9C	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2818		40 - 110					113 23 8 169 0	1/3/13/8 119 2	1
. Carrier	78Y		40 - 110					113 2318 169 0	1/3/13/8 119 2	1

Method: Ra226 Ra	228 - Con	nbined Ra	dium-226 a	nd Radiun	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	53.5		1392	436C	9300	03400	yliRL		12R27F18 19:10	1

I nie G: u f nPwoper I omya GS wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: MW-8** 

Date Collected: 11/19/18 15:15 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-5

**Matrix: Water** 

Method: 9315 - F	Radium-226 (	GFPC)	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	12.1		03508	1329	1300	030C72	yl iRL	11R2CR18 19:08	12R21R18 09:97	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	24 17		40 - 110					113 23 8 1: 908	1/3/13/8 0: 9 7	1

Ba Carrier	24\%		40 - 110					113 2318 1: 908	1/3/13/18/0:97	1
Method: 9320 - F	Radium-228 (	(GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	21.5		1301	2322	1300	03675	yl iRL	11R2CR18 15:90	12R1R8 11:9C	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	24 🕅		40 - 110					113 23 18 169 0	1/3/13/8 119 2	1
. Carrier	77 <b>\%</b>		40 - 110					113 2318 169 0	1/3/13/8 119 2	1

Method: Ra226 Ra	228 - Con	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	33.6		1318	2399	9300	03675	yl iRL		12R27F18 19:10	1

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Matrix: Water** 

**Client Sample ID: MW-9** 

Lab Sample ID: 400-162396-6 Date Collected: 11/20/18 08:44

Date Received: 11/20/18 15:40

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	7.76		03954	038C8	1300	03166	yl iRL	11R2CR18 19:08	12R21R18 09:97	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier			40 - 110					113 2318 1: 908	1/3/13/80:97	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	5.39		0350C	03785	1300	03901	yl iRL	11R2CR18 15:90	12R1R18 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	10/		40 - 110					113 23 8 169 0	1/3/13/8 1/900	1
. Carrier	81 YI		40 - 110					113 2318 169 0	1/3/13/8 1/900	1

Method: Ra226_Ra	228 - Com	nbined Rad	dium-226 a	nd Radium	<b>1-228</b>					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	13.2		03860	131C	9300	03901	yl iRL		12R27F18 19:10	1

I nie G: u f nPwoper I omya GS wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: MW-10** 

Date Collected: 11/20/18 10:30 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-7

Matrix: Water

Method: 9315 - R	Radium-226 (	(GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Posult	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Analyte	Result	Qualifier								DII Fac
Radium-226	5.15		03471	03551	1300	03145	yliRL	11R2CR18 19:08	12R21R18 09:97	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2: YO		40 - 110					113 23 8 1: 908	1/3/13/80:97	1

2: Y0		40 - 110					113 23 8 1: 908	1/3/13/80:97	1
dium-228 (	GFPC)								
		Count	Total						
		Uncert.	Uncert.						
Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
14.7		03C75	1357	1300	03921	yl iRL	11R2CR18 15:90	12R1R18 12:00	1
%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
2: <b>Y</b> 0		40 - 110					113 23 18 169 0	1/3/13/8 1/900	1
7812		40 - 110					113 23 18 169 0	1/3/13/8 1/900	1
	Result 14.7 %Yield 2: 70	Result Qualifier 14.7  %Yield Qualifier 2: 70	Count Uncert.   (2σ+/-)   14.7     2: √0	Count   Total   Uncert.   Uncert.   (2σ+/-)   (2σ+/-)   (2σ+/-)   (3π/5   1π/5   1π/5   (2π/5   1π/5   1π/5   1π/5   1π/5   1π/5   (2π/5   1π/5   1π/5   1π/5   1π/5   1π/5   (2π/5   1π/5   1π/5   1π/5   1π/5   (2π/5   1π/5   1π/5   1π/5   1π/5   (2π/5   1π/5   1π/5   1π/5   1π/5   1π/5   1π/5   1π/5   1π/5   (2π/5   1π/5   1π/5	Count   Total   Uncert.   Uncert.   Uncert.   Total   Uncert.   Uncert.	Count   Total   Uncert.   Uncert.   Uncert.   130   03921	Count   Total   Uncert.   Uncert.   Uncert.   1300   Unit   Un	Count   Total   Uncert.   Uncert.	Count   Total   Uncert.   Uncert.

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	19.8		1308	1380	9300	03921	yl iRL		12R27R18 19:10	1

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I nie G: u f nPwoper I omya GS wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: MW-12** 

Date Collected: 11/19/18 12:33
Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-8

Matrix: Water

		•	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.98		03248	03609	1300	030C19	yl iRL	11R2CR18 19:08	12R21R18 09:97	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	26 \%		40 - 110					113 2318 1: 908	1/3/13/80:97	1

	?adium-228 <i>(</i>	(GEPC)								
Analyte		Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.391		03265	0326C	1300	03697	yl iRL	11R2CR18 15:90	12R1R18 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2618		40 - 110					113 23 8 169 0	1/3/13/8 1/900	1
. Carrier	80 Y		40 - 110					113 2318 169 0	1/3/13/18 1/900	1

Method: Ra226 Ra	1228 - Con	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.37		03642	03687	9300	03697	yl iRL		12R27R18 19:10	1

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I nie G: u f nPwoper I omya GS wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: DUP-01** 

Date Collected: 11/19/18 11:33 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-9

**Matrix: Water** 

Method: 9315 - Ra	dium-226 (	(GFPC)	Count Uncert.	Total Uncert.					
Analyte Radium-226	Result 2.07	Qualifier	( <b>2σ+/-)</b> 0 <b>3</b> 294	( <b>2σ+/-)</b> 0 <b>3</b> 619	1300	MDC 03101	 Prepared 11/2/CR18 19:08	Analyzed 12R21R18 09:97	Dil Fac
<b>Carrier</b> Ba Carrier	%Yield 2/ \%	Qualifier	Limits 40 - 110				<b>Prepared</b> 113 23 8 1: 908	Analyzed  1/3/13/8/0:97	Dil Fac

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.586		03251	03255	1300	03654	yl iRL	11R2CR18 15:90	12R1R18 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2/ 1/5		40 - 110					113 23 8 169 0	1/3/13/8 1/900	1
. Carrier	7: Y		40 - 110					113 2318 169 0	1/3/13/18 1/900	1

Method: Ra226_Ra	228 - Con	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.66		03654	03412	9300	03654	yl iRL		12R27F18 19:10	1

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InieCt: ufnPwoperIomyaCS wro/ectRnite: II. hmitd wna Gt

Radium-228

TestAmerica Job ID: 400-1526C5-2

11R2CR18 15:90 12R11R18 12:00

Analyzed

hDu: AsdyoG

Client Sample ID: DUP-02

4.34

Lab Sample ID: 400-162396-10 Date Collected: 11/20/18 07:44 Date Received: 11/20/18 15:40

**Matrix: Water** 

Method: 9315 - I	Radium-226 (	(GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	7.97		03994	03007	1300	0312C	yl iRL	11R2CR18 19:08	12R21R18 09:98	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					113 23 8 1: 908	1/3/13/8 0: 9 8	1
_ Method: 9320 -	Radium-228 (	(GFPC)								
	· ·	,	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac

Carrier	%Yield Qualifier	Limits		Prepared	Analyzed	Dil Fac
Ba Carrier	100	40 - 110		113 23 8 169 0	1/3/13/8 1/900	1
. Carrier	72 <b>Y</b> 6	40 - 110		113 2318 169 0	1/3/13/8 1/900	1
Method: Ra226_Ra	a228 - Combined Ra	Count	Total			
		Uncert.	Uncert.			

1300

034C7 yl iRL

035C4

Analyte Result Qualifier (2σ+/-) (2σ+/-) RLMDC Unit Prepared 034C7 yl iRL **Combined Radium** 12.3 03706 1314 9300

03957

12R27R18 19:10 226 + 228

Dil Fac

I nie G: u f nPwoper I omya GS wro/ect Rite: II. h mitd wna Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

**Client Sample ID: FB-01** 

Date Collected: 11/20/18 11:25 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-11

Matrix: Water

Method: 9315 - Ra	dium-226 (	GFPC)								
			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
. aj if m-225	030219	U	030978	030978	1300	03108	yl iRL	11R2CR18 19:08	12R21R18 09:98	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	22 <b>Y</b> 7		40 - 110					113 23 8 1: 908	1/3/13/80:98	1

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
. aj if m-228	03222	U	03261	03261	1300	03675	yl iRL	11R2CR18 15:90	12R1R18 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	22 1/7		40 - 110					113 23/8 169 0	1/3/13/8 1/900	1
. Carrier	81Y		40 - 110					113 2318 169 0	1/3/13/8 1/900	1

Method: Ra226_Ra	1228 - Com	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
I ombiŒj . aj if m 225 + 228	03244	U	03268	03268	9300	03675	yl iRL		12R27F18 19:10	1

## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-2

SDG: Ashpond

#### **Qualifiers**

#### Rad

Qualifier	Qualifier Description
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U Result is less than the sample detection limit.

## **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant TestAmerica Job ID: 400-1526j 5-2 RDG: Asdpon3

Client Sample ID: MW-2

Date Collected: 11/19/18 08:55 Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-1

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11 <b>S</b> 2j S18 17:08	C9P	TA9 R9
Total <b>S</b> .A	Analysis	j 617		1	405j 6N	12\$21\$18 07:76	CDh	TA9 R9
Total <b>S</b> . A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total <b>S</b> .A	Analysis	j 620		1	404j 46	129198 11:7j	CDh	TA9 R9
Total <b>S</b> . A	Analysis	h a225Mh a228		1	40NN6N	1252NSI8 17:10	h T_	TA9 R9

Lab Sample ID: 400-162396-2

**Client Sample ID: MW-3** Date Collected: 11/19/18 11:03 **Matrix: Water** 

Date Received: 11/20/18 15:40

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11S2j S18 17:08	C9P	TA9 R9
Total & A	Analysis	j 617		1	405j 6N	12\$21\$18 07:76	CDh	TA9 R9
Total & A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total & A	Analysis	j 620		1	404j 46	129198 11:7j	CDh	TA9 R9
Total & A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	h T_	TA9 R9

Client Sample ID: MW-6 Lab Sample ID: 400-162396-3

Date Collected: 11/19/18 11:10 **Matrix: Water** 

Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11 <b>S</b> 2j S18 17:08	C9P	TA9 R9
Total & A	Analysis	j 617		1	405j 6N	12\$21\$18 07:76	CDh	TA9 R9
Total & A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total & A	Analysis	j 620		1	404j 46	129198 11:7j	CDh	TA9 R9
Total & A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	h T_	TA9 R9

**Client Sample ID: MW-7** Lab Sample ID: 400-162396-4

Date Collected: 11/19/18 12:25 **Matrix: Water** Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21	<del></del> -		406442	11 <b>S</b> 2j S18 17:08	C9P	TA9 R9
Total\$_A	Analysis	j 617		1	405j 65	12\$21\$18 07:7N	CDh	TA9 R9
Total\$ A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total\$_A	Analysis	j 620		1	404j 46	129198 11:7j	CDh	TA9 R9
Total\$ A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	h T_	TA9 R9

Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant TestAmerica Job ID: 400-1526j 5-2 RDG: Asdpon3

Lab Sample ID: 400-162396-5

**Matrix: Water** 

Date Collected: 11/19/18 15:15 Date Received: 11/20/18 15:40

Client Sample ID: MW-8

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11 <b>S</b> 2j S18 17:08	C9P	TA9 R9
Total\$_A	Analysis	j 617		1	405j 65	12 <b>S</b> 21S18 07:7N	CDh	TA9 R9
Total & A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total\$_A	Analysis	j 620		1	404j 46	129 198 11:7j	CDh	TA9 R9
Total & A	Analysis	h a225Mh a228		1	40NN6N	1252NSI8 17:10	h T_	TA9 R9

Lab Sample ID: 400-162396-6

Date Collected: 11/20/18 08:44 Date Received: 11/20/18 15:40

**Client Sample ID: MW-9** 

**Matrix: Water** 

		Batch	Batch		Dilution	Batch	Prepared		
	Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
-	Total & A	Prep	PrecRep-21			406442	11S2j S18 17:08	C9P	TA9 R9
'	Total\$.A	Analysis	j 617		1	405j 65	12\$21\$18 07:7N	CDh	TA9 R9
-	Total\$ A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
'	Total <b>S</b> . A	Analysis	j 620		1	404j 46	123138 12:00	CDh	TA9 R9
L	Total\$.A	Analysis	h a225Mh a228		1	40NN6N	1252NSI8 17:10	h T_	TA9 R9

**Client Sample ID: MW-10** Lab Sample ID: 400-162396-7 Date Collected: 11/20/18 10:30

**Matrix: Water** 

Date Received: 11/20/18 15:40

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
TotalS. A	Prep	PrecRep-21			406442	11S2j S18 17:08	C9P	TA9 R9
Total & A	Analysis	j 617		1	405j 65	12\$21\$18 07:7N	CDh	TA9 R9
Total\$_A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total & A	Analysis	j 620		1	404j 46	12919812:00	CDh	TA9 R9
Total & A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	h T_	TA9 R9

Client Sample ID: MW-12 Lab Sample ID: 400-162396-8

Date Collected: 11/19/18 12:33 **Matrix: Water** 

Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11 <b>S</b> 2j S18 17:08	C9P	TA9 R9
TotalS A	Analysis	j 617		1	405j 65	12\$21\$18 07:7N	CDh	TA9 R9
TotalS A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
TotalS A	Analysis	j 620		1	404j 46	129198 12:00	CDh	TA9 R9
Total & A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	h T_	TA9 R9

### **Lab Chronicle**

Client: Gulf Power Company Pro/ectSRite: CCh Rmitd Plant TestAmerica Job ID: 400-1526j 5-2

RDG: Asdpon3

**Client Sample ID: DUP-01** 

Date Collected: 11/19/18 11:33 Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-9

**TA9 R9** 

**Matrix: Water** 

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11S2j Sl8 17:08	C9P	TA9 R9
Total <b>S</b> .A	Analysis	j 617		1	405j 65	12\$21\$18 07:7N	CDh	TA9 R9
Total & A	Prep	PrecRepM0			406475	11 <b>3</b> 2j S18 15:70	C9P	TA9 R9
Total <b>S</b> .A	Analysis	j 620		1	404j 46	123138 12:00	CDh	TA9 R9
TotalSLA	Analysis	h a225Mh a228		1	40NN6N	12\$2N\$18 17:10	h T_	TA9 R9

Lab Sample ID: 400-162396-10 Client Sample ID: DUP-02

Date Collected: 11/20/18 07:44 Date Received: 11/20/18 15:40

Batch Batch **Dilution** Batch Prepared Prep Type Method Number or Analyzed Туре Run Factor Lab Analyst PrecRep-21 Total & A 406442 11S2j Sl8 17:08 C9P Prep TA9 R9 Total & A Analysis j 617 1 405j 65 12\$21\$18 07:78 CDh **TA9 R9** Total & A Prep PrecRepM0 406475 11S2j S18 15:70 C9P **TA9 R9** Total & A Analysis j 620 1 404j 46 12S1S18 12:00 CDh **TA9 R9** 

Client Sample ID: FB-01 Lab Sample ID: 400-162396-11 Date Collected: 11/20/18 11:25

1

40NN6N 1252NS18 17:10 hT\_

**Matrix: Water** 

Date Received: 11/20/18 15:40

Analysis

h a225Mh a228

Total & A

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11 <b>S</b> 2j S18 17:08	C9P	TA9 R9
Total & A	Analysis	j 617		1	405j 65	12\$21\$18 07:78	CDh	TA9 R9
TotalS.A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total & A	Analysis	j 620		1	404j 46	12919812:00	CDh	TA9 R9
Total & A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	hT_	TA9 R9

## Laboratory References:

TA9 R9 = TestAmerica Rt. 9ouis, 16N17 h i3er Trail Lortd, Eartd City, O 56047, TE9 (614)2j 8-8755

TestAmerica Pensacola

# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-2

SDG: Ashpond

#### Rad

## **Prep Batch: 403442**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-1	MW-2	Total/NA	Water	PrecSep-21	
400-162396-2	MW-3	Total/NA	Water	PrecSep-21	
400-162396-3	MW-6	Total/NA	Water	PrecSep-21	
400-162396-4	MW-7	Total/NA	Water	PrecSep-21	
400-162396-5	MW-8	Total/NA	Water	PrecSep-21	
400-162396-6	MW-9	Total/NA	Water	PrecSep-21	
400-162396-7	MW-10	Total/NA	Water	PrecSep-21	
400-162396-8	MW-12	Total/NA	Water	PrecSep-21	
400-162396-9	DUP-01	Total/NA	Water	PrecSep-21	
400-162396-10	DUP-02	Total/NA	Water	PrecSep-21	
400-162396-11	FB-01	Total/NA	Water	PrecSep-21	
MB 160-403442/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-403442/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
190-18211-K-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

## **Prep Batch: 403456**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-1	MW-2	Total/NA	Water	PrecSep_0	
400-162396-2	MW-3	Total/NA	Water	PrecSep_0	
400-162396-3	MW-6	Total/NA	Water	PrecSep_0	
400-162396-4	MW-7	Total/NA	Water	PrecSep_0	
400-162396-5	MW-8	Total/NA	Water	PrecSep_0	
400-162396-6	MW-9	Total/NA	Water	PrecSep_0	
400-162396-7	MW-10	Total/NA	Water	PrecSep_0	
400-162396-8	MW-12	Total/NA	Water	PrecSep_0	
400-162396-9	DUP-01	Total/NA	Water	PrecSep_0	
400-162396-10	DUP-02	Total/NA	Water	PrecSep_0	
400-162396-11	FB-01	Total/NA	Water	PrecSep_0	
MB 160-403456/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-403456/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
190-18211-K-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

I nie Gt: u f nPwoper I omya GS wro/ectRite: I I U h mitd wra Gt TestAmerica Job ID: 400-1526C5-2

hDu: AsdyoG

## Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-403442/23-A

Lab Sample ID: LCS 160-403442/1-A

**Matrix: Water** 

**Analysis Batch: 406936** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 403442

	MB	MB	Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-225	0704660	9	070328	07032C	1700	07128 yl iR	11R2CR18 1L:08	12F21F18 03:46	1

Total

MB MB

%Yield Qualifier Carrier Limits Prepared Analyzed Ba Carrier 40 - 110 113 2319 18:09 1/3 1319 05:46 101

Count

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 403442

**Matrix: Water** Analysis Batch: 406937

Total LCS LCS

Spike Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits Uaj if m-225 1L71 167L2 1740 1700 0710L yl iR 8C 58 - 163

LCS LCS

Carrier %Yield Qualifier Limits Ba Carrier 10/ 40 - 110

Lab Sample ID: 190-18211-K-1-A DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

Analysis Batch: 406937

**Prep Type: Total/NA** 

**Prep Batch: 403442** 

Total Sample Sample DU DU Uncert. **RER** Analyte Result Qual Result Qual  $(2\sigma + / -)$ RL **MDC** Unit RER Limit Uaj if m-225 -070210 9 0702C30 9 070452 070801 yl iR 0735 1700 DU DU

Carrier %Yield Qualifier Limits Ba Carrier 2576 40 - 110

### Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-403456/23-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA **Analysis Batch: 404941** 

			Count	Total					
	MB	MB	Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-228	076486	9	072C5	07208	1700	07432 yl iR	11R2CR18 15:L0	12R1R18 12:02	1

	IVID	IVID				
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	113 2319 1Y:80	1/3/13/19 1/:0/	1
. Carrier	9074		40 - 110	113 2319 1Y:80	1/311319 1/:0/	1

Dil Fac

10

Prep Batch: 403456

# **QC Sample Results**

InieCt: ufnPwoperIomyaCS wro/ectRite: I I U h mitd wra Gt TestAmerica Job ID: 400-1526C5-2

**Client Sample ID: Duplicate** 

**Prep Type: Total/NA** 

**Prep Batch: 403456** 

hDu: AsdyoG

## Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-403456/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 404943 Prep Batch: 403456

Total Spike LCS LCS Uncert. %Rec. Analyte Added Limits Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Uaj if m-228 1272 11744 1764 1700 07L04 yl iR L5 - 140

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 10/ 40 - 110 . Carrier 9074 40 - 110

Lab Sample ID: 190-18211-K-1-B DU

**Matrix: Water** 

Analysis Batch: 404943

					Total						
	Sample	Sample	DU	DU	Uncert.						RER
Analyte	Result	Qual	Result	Qual	(2σ+/-)	RL	MDC	Unit		RER	Limit
Uaj if m-228	07112	9	 070L468	9	0720C	1700	07655	yl iR	 	0714	1

DU DU Carrier %Yield Qualifier Limits Ba Carrier 2576 40 - 110 Carrier 9471 40 - 110

Months

00

Date/Time;

Date/Time:

Cooler Temperature(s) °C and Other Remarks

eceived by:

ROH

Company

075)

30/18

Dop-01

MW-10 MW-12

MW-8 **6-WW** 

Page 24 of 28

0 64

Date/Time:

Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Mont 400-162396 COC Aethod of Shipment: Carrier Tracking No(s' **Analysis Requested** Special Instructions/QC Requirements cheyenne.whitmire@testamericainc.com Return To Client 020 - As, Ba, B, Be, Ca, Cr, Co, Li, Mo, Se Lab PM: Whitmire, Cheyenne R E-Mali: ナン Total Dissolved Solids, 4500 F. C - Fluoride SM4500 CI E - Chioride, SM4500 SOA E - Sulfate, 2540C 9315\_Re226, 9320\_Re228, Re226Re228\_GFPC Chain of Custody Record ۵ Time: Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No.) Water Preservation Code: Water Matrix Radiological (C=comb, G=grab) Type 9 9 Purchase Order not required 1135 Suches 0855 35 1133 1935 30 HALO 1038 380 258 Sample 1233 [103 Date Unknown TAT Requested (days) THE PARTY Due Date Requested: 20 Sample Date 11/19/18 X 1 19 18 5/100/11 11/19/16 11 19 1X 81 19 11 4 19 18 11/19/18 81/02/11 Project #; 40006609 SSOW#; 8 11/20 #OM Poison B Skin Initant Deliverable Requested: 1, 11, 111, IV, Other (specify) Phone (850) 474-1001 Fax (850) 478-2671 Flammable Possible Hazard Identification Empty Kit Relinquished by: rmitche@southernco.com BIN 731 One Energy Place Sample identification Pensacola, Fl. 32514 Client Information 3355 McLemore Drive Company: Gulf Power Company Non-Hazard 850-444-6427(Tel) CCR Smith Plant DO0-07

Special Instructions/Note:

Total Number of containers

M - Hexane
N - Nanne
N - Nanne
N - Nax02
P - Nax04S
G - Nax204S
G - Nax203
S - Nax04
T - TSP Dodecahydrate
U - Acetone
U - Acetone
W - Inf 4-5
Z - other (specify)

I-Ice J-DI Water K-EDTA L-EDA

A - HCL
B - NaOH
C - Zn Acetate
D - Nibro Acid
F - MeSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid

**TestAmerica** 

**TestAmerica Pensacola** 

Kristi Mitchell

Pensacola State, Zip: FL, 32520

400-53432-23565,1

Page: Page 1 of@

12/28/2018

Custody Seal No.

Custody Seals Intact:

elinquished by:

elinquished by:

A Yes A No

Client: Gulf Power Company

Job Number: 400-162396-2 SDG Number: Ashpond

List Source: TestAmerica Pensacola

Login Number: 162396 List Number: 1

Creator: Whitmire, Cheyenne R

Creator. Willtillie, Cheyenne K		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 1.5°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Gulf Power Company

Job Number: 400-162396-2 SDG Number: Ashpond

List Source: TestAmerica St. Louis

List Creation: 11/27/18 02:25 PM

Login Number: 162396 List Number: 2

Creator: Dupart, Lacee S

Creator: Dupart, Lacee S		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Job ID: 400-1582j 5-8 RDG: Asdpon.

## Laboratory: TestAmerica Pensacola

Client: Gulf Power Company

Pro/ectsRite: CCh Rmitd Plant

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	Rtate Pro3ram	4	40160	05-20-1j
Ag A9	IRB \$OC 1E086		784E1	08-88-80
AriLona	Rtate Pro3ram	j	Az0E10	01-18-80
ArZansas DOk	Rtate Pro3ram	5	QQ05Q	0j -01-1j
California	Rtate Pro3ram	j	8610	05-20-1j
Flori. a	g O7AP	4	OQ1010	05-20-1j
Geor3ia	Rtate Pro3ram	4	OQ1010 (F7)	05-20-1j
Illinois	g O7AP	6	800041	10-0j -1j
lowa	Rtate Pro3ram	E	25E	0Q-01-80
* ansas	g O7AP	E	O-10862	18-21-1QK
* entucZy (URT)	Rtate Pro3ram	4	62	05-20-1j
* entucZy (WW)	Rtate Pro3ram	4	j Q020	18-21-1j
7ouisiana	g O7AP	5	20j E5	05-20-1j
7ouisiana (DW)	g O7AP	5	7A01E	18-21-1j
Marylan.	Rtate Pro3ram	2	822	0j -20-1j
Massacdusetts	Rtate Pro3ram	1	M-F70j 4	05-20-1j
Micdi3an	Rtate Pro3ram	6	j j 18	05-20-1j
g ew Jersey	g O7AP	8	F7005	05-20-1j
g ortd Carolina (WW\$RW)	Rtate Pro3ram	4	214	18-21-1j
BZladoma	Rtate Pro3ram	5	j Q10	0Q21-1j
Pennsylvania	g O7AP	2	5Q0045E	01-21-1j
h do. e Islan.	Rtate Pro3ram	1	7AB0020E	18-20-1QK
Routd Carolina	Rtate Pro3ram	4	j 5085	05-20-1j
Tennessee	Rtate Pro3ram	4	Tg 08j 0E	05-20-1j
Texas	g O7AP	5	T104E048Q5-1Q-16	0j -20-1j
UR Fisd & Wil. life	Fe. eral		7006Q44Q-0	0E-21-1j
URDA	Fe. eral		P220-1Q0014Q	06-1E-81
Vir3inia	g O7AP	2	450155	05-14-1j
Wasdin3ton	Rtate Pro3ram	10	Cj 16	06-16-1j
West Vir3inia DOP	Rtate Pro3ram	2	125	05-20-1j

#### Laboratory: TestAmerica St. Louis

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	Expiration Date
AlasZa	Rtate Pro3ram	10	MB 00064	05-20-1j
Ag A9	DoD O7AP		78206	04-05-1j
AriLona	Rtate Pro3ram	j	Az0Q12	18-0Q-1j
California	Rtate Pro3ram	j	8005	05-20-1j
Connecticut	Rtate Pro3ram	1	PH-0841	02-21-1j
Flori. a	g O7AP	4	OQE5Q	05-20-1j
Illinois	g O7AP	6	800082	11-20-1QK
Iowa	Rtate Pro3ram	E	2E2	18-01-1QK
* ansas	g O7AP	E	O-10825	10-21-1j
* entucZy (DW)	Rtate Pro3ram	4	j 0186	18-21-1QK
7ouisiana	g O7AP	5	040Q0	05-20-1j
7ouisiana (DW)	g O7AP	5	7A1Q001E	18-21-1QK
Marylan.	Rtate Pro3ram	2	210	0j -20-1j
Micdi3an	Rtate Pro3ram	6	j 006	05-20-1j
Missouri	Rtate Pro3ram	Е	EQO	05-20-1j

KAccre. itation Sertification renewal pen. in3 - accre. itation Sertification consi. ere. vali. N

TestAmerica Pensacola

## **Accreditation/Certification Summary**

Client: Gulf Power Company

TestAmerica Job ID: 400-1582j 5-8

Pro/ect\$Rite: CCh Rmitd Plant

RDG: Asdpon.

## Laboratory: TestAmerica St. Louis (Continued)

All accre. itations@ertifications del. by tdis laboratory are liste. Ng ot all accre. itations@ertifications are applicable to tdis reportN

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
g eva. a	Rtate Pro3ram	j	MB 00064801Q-1	0E-21-1j
g ew Jersey	g O7AP	8	MB 008	05-20-1j
g ew YorZ	g O7AP	8	11515	02-21-1j
g ortd DaZota	Rtate Pro3ram	Q	h80E	05-20-1j
ghC	ghC		84-84Q1E-01	18-21-88
B Zladoma	Rtate Pro3ram	5	jjjE	0Q21-1j
Pennsylvania	g O7AP	2	5Q00640	08-8Q1j K
Routd Carolina	Rtate Pro3ram	4	Q6008001	05-20-1j
Texas	g O7AP	5	T104E041j 2-1Q18	0E-21-1j
UR Fisd & Wil. life	Fe. eral		06Q44Q	0E-21-1j
URDA	Fe. eral		P220-1E-008Q	08-80-80
Utad	g O7AP	Q	MB 00064801Q10	0E-21-1j
Vir3inia	g O7AP	2	450820	05-14-1j
Wasdin3ton	Rtate Pro3ram	10	C6j 8	0Q-20-1j
West Vir3inia DOP	Rtate Pro3ram	2	2Q1	0Q21-1j

8

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-162396-3

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 12/14/2018 4:39:31 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### Case Narrative

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3

SDG: Ashpond

Job ID: 400-162396-3

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-162396-3

#### Metals

Method(s) 6020: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-11 (400-162396-12). Elevated reporting limits (RLs) are provided.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-11 (400-162396-12). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 421795 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method(s) SM 4500 SO4 E: Due to the concentration of sulfates in the parent sample the MS/MSD were diluted after the spike. The spike amounts were adjusted by the dilution factor. (400-162459-A-1 MS) and (400-162459-A-1 MSD)

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 421795 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-11 (400-162396-12), (400-162459-A-1), (400-162459-A-1 MS) and (400-162459-A-1 MSD). Elevated reporting limits (RLs) are provided.

# **Detection Summary**

InieCt: ufnPwoperIomyaCS wro/ectRtite: I i . hmitd wna Gt TestAmerica Job ID: 400-1582C5-2

hDu: AsdyoG

## Client Sample ID: MW-11

Client Sample ID: MW-11						ole ID: 400-	162396-12
Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac D	Method	Prep Type
3 onSbj eGf m	0g005C I	0 <b>0</b> 1L	00080	m6R⁄r	L	5080	Totan . ecoBerabre
9oroG- Dv	4gl	0 <b>_</b> 0	0g81	m6R∕r	L0	5080	Totan . ecoBerabre
I ancif m - Dv	180	8g_	1g2	m6R∕r	L0	5080	Totan . ecoBerabre
ArseGc A	0 <b>g</b> 1L	0@0012	000045	m6R∕r	L	5080	Totan . ecoBerabre
9arif m A	0gl1	0 <b>0</b> 08L	0 <b>0</b> 004C	m6R∕r	L	5080	Totan . ecoBerabre
9erSmifmA	0g0011 I	0 <b>g</b> 008L	0	m6R∕r	L	5080	Totan . ecoBerabre
I dromif m A	0g0025	0 <b>0</b> 08L	00011	m6R∕r	L	5080	Totan . ecoBerabre
vitdif m A	0 <b>0</b> 11	0 <b>g</b> 00L0	0 <b>0</b> 0011	m6R∕r	L	5080	Totan . ecoBerabre
TotanDissonBej honijs	4100	L0	24	m6₽⁄r	1	h3 8L40l	Totan
l dnorije	8400	150	110	m6Rr	N0	h3 4L00   n E	Totan MA
hfnRate	8L0	100	8N	m6R∕r	80	h3 4L00 hF4 E	Totan RMA
Cienj yH	5 <b>g</b> L			hU	1	Oienjihamyniko6	Totan MA

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3

SDG: Ashpond

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN

#### **Protocol References:**

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-3

SDG: Ashpond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-12	MW-11	Water	11/20/18 11:46	11/20/18 15:40

Client: Gulf Power Company Project/Site: CCR Smith Plant

Analyte

Field pH

TestAmerica Job ID: 400-162396-3

SDG: Ashpond

Lab Sample ID: 400-162396-12 **Client Sample ID: MW-11** Date Collected: 11/20/18 11:46

**Matrix: Water** 

Method: 6020 - Metals (ICP Analyte	•	coverable Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Molybdenum	0.0069	I	0.015	0.0020			11/30/18 10:45	11/30/18 16:46	
Method: 6020 - Metals (ICP	/MS) - Total Re	coverable	- DL						
Analyte	•	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Boron	4.1		0.50	0.21	mg/L		11/30/18 10:45	12/04/18 16:28	5
Calcium	120		2.5	1.3	mg/L		11/30/18 10:45	12/04/18 16:28	5
Method: 6020 - Metals (ICP	/MS) - Total Re	coverable	- RA						
Analyte	•	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Arsenic	0.015		0.0013	0.00046	mg/L		11/30/18 10:45	12/04/18 18:05	
Barium	0.11		0.0025	0.00049	mg/L		11/30/18 10:45	12/04/18 18:05	
Beryllium	0.0011	L	0.0025	0.00034	mg/L		11/30/18 10:45	12/04/18 18:05	
Chromium	0.0036		0.0025	0.0011	mg/L		11/30/18 10:45	12/04/18 18:05	
Cobalt	0.00040	U	0.0025	0.00040	mg/L		11/30/18 10:45	12/04/18 18:05	
Lithium	0.011		0.0050	0.0011	mg/L		11/30/18 10:45	12/07/18 19:37	
Selenium	0.00071	U	0.0013	0.00071	mg/L		11/30/18 10:45	12/04/18 18:05	
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Dissolved Solids	4100		50	34	mg/L			11/26/18 10:09	
Chloride	2400		160	110	mg/L			12/04/18 10:05	8
Fluoride	0.032	U	0.10	0.032	mg/L			11/28/18 14:49	
Sulfate	250		100	28	mg/L			12/03/18 10:08	2

**PQL** 

MDL Unit

SU

Prepared

Result Qualifier

6.35

Dil Fac

Analyzed

11/20/18 11:46

## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3

SDG: Ashpond

#### **Qualifiers**

#### **Metals**

Qualifier	Qualifier Description
I	The reported Lalue is between the laboratory method detection limit and the laboratory practical zuantitation limit.
V	Indicates that the compound was analyqed for but not detected.

#### **General Chemistry**

Qualifier	Qualifier Description
V	Indicates that the compound was analyged for but not detected.
J3	Estimated Lalue; Lalue may not be accurate. Spike recollery or RPD outside of criteria.
I	The reported Ualue is between the laboratory method detection limit and the laboratory practical zuantitation limit.

## **Glossary**

MDA

MDC

MDL ML

NC

ND

**PQL** 

QC

RER RL

RPD

TEF

**TEQ** 

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recolery
CFL	Contains Free Lizuid
CNF	Contains No Free Lizuid
DER	Duplicate Error Ratio (normaliqed absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision LeUel Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)

Minimum Detectable ActiUty (Radiochemistry)

Method Detection Limit

Minimum LeUel (Dioxin)

Practical Quantitation Limit

RelatiUe Error Ratio (Radiochemistry)

Toxicity EzuiUalent Factor (Dioxin)

Toxicity EzuiUalent Quotient (Dioxin)

Not Calculated

**Quality Control** 

Minimum Detectable Concentration (Radiochemistry)

Reporting Limit or Rezuested Limit (Radiochemistry)

Not Detected at the reporting limit (or MDL or EDL if shown)

RelatiUe Percent Difference, a measure of the relatiUe difference between two points

## **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3

SDG: Ashpond

**Client Sample ID: MW-11** 

Date Collected: 11/20/18 11:46 Date Received: 11/20/18 15:40

Lab Sample ID: 400-162396-12

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 16:46	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	50	422045	12/04/18 16:28	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422045	12/04/18 18:05	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	422591	12/07/18 19:37	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	421838	12/04/18 10:05	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 14:49	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	421795	12/03/18 10:08	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/20/18 11:46	CDH	TAL PEN

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# **QC Association Summary**

InieCt: ufnPwoperIomyaCS wro/ectRtite: I I Whmitd wra Gt TestAmerica Job ID: 400-1526C5-6

hDu: AsdyoG

## **Metals**

Prep Batch: 39237L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	TotanWecoUerabre	3 ater	600MA	
400-1526C5-12 - WA	v 3 -11	TotanWecoUerabre	3 ater	600MA	
400-1526C5-12 - DL	v 3 -11	TotanWecoUerabre	3 ater	600MA	
v 7 400-42145MR-A 8M	vetdoj 7 na OF	TotanWecoUerabre	3 ater	600MA	
LI h 400-42145M <b>?</b> -A	Lab I oGtronhamyre	TotanWecoUerabre	3 ater	600MA	
400-152402-l -C-7 v h 8M	v atriBhyiFe	TotanWecoUerabre	3 ater	600MA	
400-152402-l -C-l v h D 8M	v atriBhyiFe Dfynicate	TotanWecoUerabre	3 ater	600MA	

#### Analysis Batch: 39259(

bal Sample II	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	TotanWecoUerabre	3 ater	5020	42145M
v 7 400-42145MR-A 8M	vetdoj 7 na GF	TotanWecoUerabre	3 ater	5020	42145M
LI h 400-42145M <b>⊋</b> -A	Lab I o Gronhamyne	TotanWecoUerabre	3 ater	5020	42145M
400-152402-l -C-7 v h 8M	v atriBhyiFe	TotanWecoUerabre	3 ater	5020	42145M
400-152402-I -C-I v h D 8M	v atriBhyiFe Df ynicate	TotanWecoUerabre	3 ater	5020	42145M

#### Analysis Batch: 399) 3L

bal Sample 🏻	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12 - DL	v 3 -11	TotanWecoUerabre	3 ater	5020	42145M
400-1526C5-12 - WA	v 3 -11	TotanWecoUerabre	3 ater	5020	42145M

#### Analysis Batch: 399L42

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12 - WA	v 3 -11	TotanWecoUerabre	3 ater	5020	42145M

## 0 eneral Chemistry

## Analysis Batch: 39) 55L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	Totan <b>E</b> A	3 ater	hv 2M40l	
v 7 400-42099MR	vetdoj7na.Œ	Totan <b>Æ</b> A	3 ater	hv 2M40l	
LI h 400-42099MR2	Lab I oGtronhamyne	Totan <b>Æ</b> A	3 ater	hv 2M40l	
400-1526C5-A-1 D^	Df yricate	Totan <b>Æ</b> A	3 ater	hv 2M40l	

## **Analysis Batch: 39221)**

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	TotanEA	3 ater	hv 4M00 k l	
v 7 400-4211NOR6	vetdoj 7 na CF	TotanÆA	3 ater	hv 4M00 k l	
LI h 400-4211N0F4	Lab I oGtronhamyre	Totan <b>Æ</b> A	3 ater	hv 4M00 k l	
400-1526C5-A-Cv h	v atriBhyiFe	TotanÆA	3 ater	hv 4M00 k l	
400-1526C5-A-Cv hD	v atriBhyiFe Dfynicate	Totan <b>Æ</b> A	3 ater	hv 4M00 k l	
400-1526C5-A-19 D^	Df yricate	TotanÆA	3 ater	hv 4M00 k l	

## Analysis Batch: 39254L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	TotanEA	3 ater	hv 4M00 hx 4 O	
v 7 400-4219CMB	vetdoj7naGF	TotanÆA	3 ater	hv 4M00 hx 4 O	
LI h 400-4219CMR9	Lab I o Gtronhamyne	TotanÆA	3 ater	hv 4M00 hx 4 O	
v WL 400-4219CMR6	Lab I o Gronhamyne	TotanÆA	3 ater	hv 4M00 hx 4 O	
400-152M5N-A-1 v h	v atriBhyiFe	TotanÆA	3 ater	hv 4M00 hx 4 O	

TestAmerica we Gacora

12/14/2018

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# **QC Association Summary**

InieCt: ufnPwoperIomyaCS wro/ectRtite: I I Whmitd wra Gt TestAmerica Job ID: 400-1526C5-6

hDu: AsdyoG

## 0 eneral Chemistry © ontinue86

#### Analysis Batch: 39254L Continue86

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-152M5N-A-1 v h D	v atriBhyiFe Dfynicate	TotanEA	3 ater	hv 4M00 hx 4 O	

## Analysis Batch: 3921(1

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	Totan EA	3 ater	hv 4M00 l n O	
v 7 400-421N6NFS	vetdoj7na.CF	TotanÆA	3 ater	hv 4M00 I a O	
LI h 400-421N6NF9	Lab I oGronhamyre	TotanÆA	3 ater	hv 4M00 I a O	
v WL 400-421N6NR6	Lab I oGronhamyre	TotanÆA	3 ater	hv 4M00 I a O	
400-1526C5-A-2 v h	v atriBhyiFe	Totan <b>Æ</b> A	3 ater	hv 4M00 I a O	
400-1526C5-A-2 v hD	v atriBhyiFe Dfynicate	Totan <b>Æ</b> A	3 ater	hv 4M00 I a O	

# Fiel8 Service / Mol ile bal

## Analysis Batch: 39242L

bal Sample IT	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-12	v 3 -11	Totan <b>E</b> A	3 ater	kienj hamyni-Gg	

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3 SDG: Ashpond

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-421465/1-A ^5 **Matrix: Water** 

Analysis Batch: 421723

**Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 421465** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		11/30/18 10:45	11/30/18 15:42	5
Barium	0.00049	U	0.0025	0.00049	mg/L		11/30/18 10:45	11/30/18 15:42	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		11/30/18 10:45	11/30/18 15:42	5
Boron	0.021	U	0.050	0.021	mg/L		11/30/18 10:45	11/30/18 15:42	5
Calcium	0.13	U	0.25	0.13	mg/L		11/30/18 10:45	11/30/18 15:42	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		11/30/18 10:45	11/30/18 15:42	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		11/30/18 10:45	11/30/18 15:42	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		11/30/18 10:45	11/30/18 15:42	5
Molybdenum	0.0020	U	0.015	0.0020	mg/L		11/30/18 10:45	11/30/18 15:42	5
Selenium	0.00071	U	0.0013	0.00071	mg/L		11/30/18 10:45	11/30/18 15:42	5

Lab Sample ID: LCS 400-421465/2-A

Matrix: Water

**Analysis Batch: 421723** 

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

**Prep Batch: 421465** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Arsenic	0.0500	0.0495	-	mg/L		99	80 - 120	
Barium	0.0500	0.0483		mg/L		97	80 - 120	
Beryllium	0.0500	0.0560		mg/L		112	80 - 120	
Boron	0.100	0.106		mg/L		106	80 - 120	
Calcium	5.00	4.89		mg/L		98	80 - 120	
Chromium	0.0500	0.0498		mg/L		100	80 - 120	
Cobalt	0.0500	0.0518		mg/L		104	80 - 120	
Lithium	0.0500	0.0548		mg/L		110	80 - 120	
Molybdenum	0.0500	0.0477		mg/L		95	80 - 120	
Selenium	0.0500	0.0492		mg/L		98	80 - 120	

Lab Sample ID: 400-162402-C-9-B MS ^5

**Matrix: Water** 

Analysis Batch: 421723

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** Prep Batch: 421465

Alialysis Balcii. 421725	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	0.023		0.0500	0.0745		mg/L		102	75 - 125
Barium	0.0014	1	0.0500	0.0512		mg/L		100	75 - 125
Beryllium	0.00034	U	0.0500	0.0504		mg/L		101	75 - 125
Boron	0.030	I	0.100	0.135		mg/L		104	75 - 125
Calcium	6.0		5.00	10.9		mg/L		99	75 - 125
Chromium	0.0011	U	0.0500	0.0509		mg/L		102	75 - 125
Cobalt	0.00040	U	0.0500	0.0530		mg/L		106	75 - 125
Lithium	0.0011	U	0.0500	0.0510		mg/L		102	75 - 125
Molybdenum	0.0046	1	0.0500	0.0544		mg/L		99	75 - 125
Selenium	0.0033		0.0500	0.0509		mg/L		95	75 <sub>-</sub> 125

Lab Sample ID: 400-162402-C-9-C MSD ^5

M

Matrix: Water							P	rep Ty	pe: Total I		
Analysis Batch: 421723									Prep Ba	itch: 42	21465
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.023		0.0500	0.0753		mg/L		104	75 - 125	1	20

TestAmerica Pensacola

**Client Sample ID: Matrix Spike Duplicate** 

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Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3 SDG: Ashpond

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-162402-C-9-C MSD ^5 **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total Recoverable** Prep Batch: 421465 **Analysis Batch: 421723** Spike MSD MSD RPD Sample Sample %Rec. Result Qualifier Added Result Qualifier Limits RPD Analyte Unit %Rec Limit 0.0014 I 0.0500 0.0516 100 75 - 125 20 mg/L 0.00034 U 0.0500 0.0506 mg/L 101 75 - 125 0 20 0.030 I 0.100 0.131 101 75 - 125 3 20 mg/L 6.0 5.00 11.0 mg/L 100 75 - 125 20

Barium Beryllium Boron Calcium Chromium 0.0011 U 0.0500 0.0521 mg/L 104 75 - 125 20 75 - 125 20 Cobalt 0.00040 U 0.0500 0.0536 mg/L 107 Lithium 0.0011 U 0.0500 0.0516 103 75 - 125 20 mg/L Molybdenum 0.0500 mg/L 99 75 - 12520 0.0046 I 0.0542 0 Selenium 0.0033 0.0500 0.0509 mg/L 95 75 - 125 20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-420775/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 420775 MR MR

PQL Result Qualifier **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids 5.0 3 4 П 3.4 mg/L 11/26/18 10:09

Lab Sample ID: LCS 400-420775/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 420775** 

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Analyte D **Total Dissolved Solids** 293 350 mg/L 78 - 122 119

Lab Sample ID: 400-162396-A-1 DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

**Analysis Batch: 420775** 

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier D RPD Analyte Unit Limit **Total Dissolved Solids** 88 88.0 mg/L 0

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-421838/6 Client Sample ID: Method Blank

**Matrix: Water** 

**Analysis Batch: 421838** 

MB MB

Result Qualifier **PQL** Analyte **MDL** Unit **Prepared** Analyzed Dil Fac 2.0 Chloride 14 II 1.4 mg/L 12/04/18 09:25

Lab Sample ID: LCS 400-421838/7 Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421838** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chloride 30.0 32.4 mg/L 108 90 - 110

TestAmerica Pensacola

Prep Type: Total/NA

Prep Type: Total/NA

TestAmerica Job ID: 400-162396-3 SDG: Ashpond

50 - 150

84

# Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: MRL 400-421838/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 421838** Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits

Lab Sample ID: 400-162396-A-2 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

1.69 Ī

mg/L

2.00

**Analysis Batch: 421838** 

Chloride

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Sample Sample Spike MS MS %Rec. Result Qualifier Added Limits **Analyte** Result Qualifier Unit %Rec 10.0 Chloride 13 23.5 mg/L 107 73 - 120

Lab Sample ID: 400-162396-A-2 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 421838

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit **Analyte** Unit D %Rec Chloride 13 10.0 23.2 mg/L 105

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-421180/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

MR MR Analyte Result Qualifier **PQL MDL** Unit Prepared Analyzed Fluoride 0.032 U 0.10 0.032 ma/L 11/28/18 14:20

Lab Sample ID: LCS 400-421180/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Fluoride 4.00 3.90 mg/L 98 90 - 110

Lab Sample ID: 400-162396-A-9 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

Sample Sample Spike MS MS %Rec. Added Result Qualifier Analyte Result Qualifier Unit %Rec Limits Fluoride 1.00 75 - 125 0.13 1.10 mg/L 97

Lab Sample ID: 400-162396-A-9 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

Sample Sample Spike MSD MSD %Rec. **RPD** 

Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits **RPD** Limit Fluoride 0.13 1.00 1.10 mg/L 97 75 - 125

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-3

SDG: Ashpond

## Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-162396-A-17 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit Fluoride 0.032 U NC 0.032 U mg/L

### Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-421795/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

MB MB PQL Result Qualifier **MDL** Unit Analyte Analyzed Dil Fac Prepared Sulfate 1.4 U 5.0 1.4 mg/L 12/03/18 09:16

Lab Sample ID: LCS 400-421795/7 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 421795** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits Sulfate 15.0 15.3 90 - 110 mg/L

Lab Sample ID: MRL 400-421795/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier D %Rec Limits Unit Sulfate 5.00 4.12 Ī mg/L 82 50 - 150

Lab Sample ID: 400-162568-A-1 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421795** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 1.4 U 10.0 Sulfate 8.07 81 77 - 128 mg/L

Lab Sample ID: 400-162568-A-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421795** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec Sulfate 1.4 U 10.0 8.74 J3 mg/L 87 77 - 128

3355 Mcl emore Drive				
Pensacola, FL 32514	Chain of Cu	Chain of Custody Record		TestAmerica
Phone (850) 474-1001 Fax (850) 478-2671				
Client Information	Sampler:	Lab PM:	Carrier Tracking Nofs):	OCCUR.
Crist Contact: Kristi Mitchell	5			400-53432-23565.1
Company: Gulf Power Company	٥	cheyenne.whitmire@testamericainc.com		Page 1 of (2)
Address: BIN 731 One Energy Place	Due Data Requested:	Analysis Requested	ested	Jos # 162396
City. Pensacota	TAT Requested (days):	2540C		
State, Zp: FL, 32520				
Frions: 850-444-6427(Tel)	Po#: Purchase Order not required	8 GFP	19	E - NaHSO4 Q - NaZSO3 F - MeOH R - NaZSZO3
Email: Krinitche@southemco.com	W0#:	10,56 10,56 10,56		
Froject Name: CCR Smith Plant	Project #:	OT NO. 10 SAN 450 F. 200 F. 20	1912	J - DI Water K - EDTA
Site:	SSOW#:	Ra228 Portde, Sids, 4 Ca,Cr,	nlatno	L-EDA
	Salues	Tanger See See See See See See See See See S		Curer:
Samila Hantifle seine	Sample	Washing (Washington) of Filts (Orm Market) o	qunN	
	_	BTTTssue, Andry   Field	[Sio]	
MW-11		X		Special insurctions/Note:
	1 30 11 N C	Water XXX		
	8	Water		
1				
Non-Hazard Flammable Skin Imient Poison B Deliverable Requested: 1.11 III IV Other Concession	on B Unknown Radiological	Sample Disposal ( A fee may be	essed if samples are retain	ed longer than 1 month)
Emak Vi Bat V.: Date (about )		Special Instructions/QC Requiren	Disposal by Lab Archive For Archive For Nents:	ive For Months
Reinquished by:	Date:	TIme:	Mathod of Shiomant	
Relinmistrad hu	Date Time: (( ) 20 1/8 1540	Company Cox Rocered by		
Reinaushed by		Company thefived by:	Date/Time:	1540 S
	Date/Time:	Company Received by:	Date/Time:	Aradina
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) C and Other Remark	200	Company
		10000	5 6 2117	10,19,0

TestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-162396-3 SDG Number: Ashpond

List Source: TestAmerica Pensacola

Login Number: 162396

List Number: 1

Creator: Whitmire, Cheyenne R

Answer	Comment
N/A	
True	
N/A	
True	
True	
True	
True	0.0°C, 0.0°C, 1.5°C IR-7
True	
N/A	
True	
True	
N/A	
	N/A True N/A True True True True True True True True

TestAmerica Pensacola

# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-162396-3
SDG: Ashpond

# **Laboratory: TestAmerica Pensacola**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
lowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	12-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA180023	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-162396-4

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Cheyroud Whitmin

Authorized for release by: 12/28/2018 2:03:52 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 400-162396-4 SDG: Ashpond

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### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-4

SDG: Ashpond

Job ID: 400-162396-4

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-162396-4

#### **RAD**

Method(s) PrecSep\_0: Radium 228 Prep Bach 403456: The following samples were reduced due to potential matrix interference: MW-11 (400-162396-12). The samples had yellow discoloration, sediment, and a strong sulfur odor. Sample 310-144991-1 was reduced due to limited sample volume.

Method(s) PrecSep-21: Radium 226 Prep Bach 403442: The following samples were reduced due to potential matrix interference: MW-11 (400-162396-12). The samples had yellow discoloration, sediment, and a strong sulfur odor. Sample 310-144991-1 was reduced due to limited sample volume.

# **Method Summary**

I rite G: u f riPwop er I omya Gs wro/ect Rite: I I Wh mitd wra Gt TestAmerica Job ID: 400-1526C5-4

hDu: AsdyoG

Method	Method Description	Protocol	Laboratory
C613	Waj if m-225 (u Fwl )	h8 945	TAL hL
C620	Waj if m-229 (u Fwl )	h8 945	TAL hL
Wa225_Wa229	I ombiŒj Waj if m-225 aG Waj if m-229	TAL-hTL	TAL hL
wrechey_0	wreyaratioG wreciyitate heyaratioG	NoGe	TAL hL
wrechey-21	wreyaratioG wreciyitate heyaratioG(21-DaSIGu roptd)	NoGe	TAL hL

#### **Protocol References:**

No@ = No@

h8 945 = "Test Metdoj s For EvanfatiQg horij 8 aste, wdSsicanfR demicanMetdoj s", Tdirj Ej itioG, November 1095 AQ Its Uyj ates.

TAL-hTL = TestAmerica Laboratories, ht. Lof is, FacinitShtaQ arj OyeratiQ wrocej f re.

#### **Laboratory References:**

TAL hL = TestAmerica ht. Lof is, 16713 Wj er TrainNortd, Eartd I itS, MO 56043, TEL (614)2C9-9355

TestAmerica we Gsacora

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1:

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-4

SDG: Ashpond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-12	MW-11	Water	11/20/18 11:46	11/20/18 15:40

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-4

SDG: Ashpond

**Client Sample ID: MW-11** 

Lab Sample ID: 400-162396-12 **Matrix: Water** 

Date Collected: 11/20/18 11:46 Date Received: 11/20/18 15:40

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	21.2		0.926	2.12	1.00	0.129	pCi/L	11/29/18 15:08	12/21/18 07:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2678		40 - 110					113 2319 18:09	1/3/13/19 05:46	1

adium-228 (	GFPC)	Count	Total						
Pocult	Qualifier	Uncert.	Uncert.	DI	MDC	Unit	Propared	Analyzod	Dil Fac
Resuit	Qualifier			KL _			·		DII Fac
7.37		0.725	0.993	1.00	0.529	pCi/L	11/29/18 16:50	12/11/18 12:00	1
%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
2678		40 - 110					113 2319 1Y:80	1/3/13/19 1/:00	1
9075		40 - 110					113 2319 1Y:80	1/311319 1/:00	1
	Result   7.37   %Yield   2678	%Yield Qualifier	Count Uncert.   (2σ+/-)   7.37   0.725	Count Uncert. Uncert.	Count Uncert. Uncert.   Uncert.   Count Uncert.   Uncert.   Uncert.   Count Uncert.   Uncert.   Count Uncer	Count Uncert. Uncert. Uncert.   Variety   V	Count Uncert. Uncert. Uncert.   Total Uncert.   Uncert.   Uncert.   Total Uncert.   Uncert.   Total Uncert.   Uncert.   Uncert.   Total Uncert.   Uncert.   Total Uncert.   Uncert.   Total Uncert.   Uncert.   Total Uncer	Count Uncert. Uncert. Uncert.   Variety   V	Count Uncert. Uncert. Uncert.   Count Uncer

Method: Ra226 Ra	228 - Con	nbined Ra	dium-226 a	nd Radiun	n-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	28.6		1.18	2.34	5.00	0.529	pCi/L		12/27/18 15:10	1

## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-4

SDG: Ashpond

#### **Qualifiers**

#### Rad

U Result is less than the sample detection limit.

## **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

**PQL Practical Quantitation Limit** 

QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

## **Lab Chronicle**

Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant TestAmerica Job ID: 400-1526j 5-4

RDG: Asdpon3

**Client Sample ID: MW-11** 

Lab Sample ID: 400-162396-12

**Matrix: Water** 

Date Collected: 11/20/18 11:46 Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11S2j S18 17:08	C9P	TA9 R9
Total\$ A	Analysis	j 617		1	405j 65	12\$21\$18 0N:46	CDh	TA9 R9
Total & A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total\$_A	Analysis	j 620		1	404j 46	12919812:00	CDh	TA9 R9
Total <b>S</b> . A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	hT_	TA9 R9

#### **Laboratory References:**

TA9 R9 = TestAmerica Rt. 9ouis, 16M17 h i3er Trail L ortd, Eartd City, \_ O 56047, TE9 (614)2j 8-8755

# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-4

SDG: Ashpond

## Rad

## **Prep Batch: 403442**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
400-162396-12	MW-11	Total/NA	Water	PrecSep-21
MB 160-403442/23-A	Method Blank	Total/NA	Water	PrecSep-21
LCS 160-403442/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21
190-18211-K-1-A DU	Duplicate	Total/NA	Water	PrecSep-21

## **Prep Batch: 403456**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-12	MW-11	Total/NA	Water	PrecSep_0	
MB 160-403456/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-403456/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
190-18211-K-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

InieCt: ufnPwoperIomyaCS wro/ectRite: I I U h mitd wra Gt TestAmerica Job ID: 400-1526C5-4

hDu: AsdyoG

## Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-403442/23-A

**Matrix: Water** 

**Analysis Batch: 406936** 

**Client Sample ID: Method Blank Prep Type: Total/NA** 

Prep Batch: 403442

	MB	MB	Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-225	0704660	9	070328	07032C	1700	07128 yl iR	11R2CR18 1L:08	12R21R18 03:46	1

Total

Count

MB MB

Carrier %Yield Qualifier Limits Ba Carrier 40 - 110 101

**Client Sample ID: Lab Control Sample** 

<u>113 2319 18:09</u> <u>1/3 1319 05:46</u>

Prepared

Prep Type: Total/NA

Prep Batch: 403442

Analyzed

Lab Sample ID: LCS 160-403442/1-A **Matrix: Water** 

Analysis Batch: 406937

				Total					
	Spike	LCS	LCS	Uncert.				%Rec.	
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	
Uaj if m-225	1L71	167L2		1740	1700	0710L yl iR		58 - 163	

LCS LCS

%Yield Qualifier Carrier Limits Ba Carrier 10/ 40 - 110

Lab Sample ID: 190-18211-K-1-A DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

Analysis Batch: 406937

**Prep Type: Total/NA Prep Batch: 403442** 

					Total						
	Sample	Sample	DU	DU	Uncert.						RER
Analyte	Result	Qual	Result	Qual	(2σ+/-)	RL	MDC	Unit		RER	Limit
Uaj if m-225	-070210	9	0702C30	9	070452	1700	070801	yl iR		0735	1
	ו ווח	111									

%Yield Qualifier

Carrier Limits Ba Carrier 2576 40 - 110

### Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-403456/23-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA **Prep Batch: 403456** 

Analysis Batch: 404941

7 tildiyolo Batolli 40	1011							. Top Batom	100100
_			Count	Total					
	MB	MB	Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-228	076486	9	072C5	07208	1700	07432 yl iR	11R2CR18 15:L0	12R1R18 12:02	1
	Analyte	Analyte Result	MB MB Analyte Result Qualifier	Count  MB MB Uncert.  Analyte Result Qualifier (2σ+/-)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Count Total  MB MB Uncert. Uncert.  Analyte Result Qualifier (2σ+/-) (2σ+/-) RL	Count Total  MB MB Uncert. Uncert.  Analyte Result Qualifier (2σ+/-) (2σ+/-) RL MDC Unit	Count Total  MB MB Uncert. Uncert.  Analyte Result Qualifier (2σ+/-) (2σ+/-) RL MDC Unit Prepared	Count Total  MB MB Uncert. Uncert.  Analyte Result Qualifier (2σ+/-) (2σ+/-) RL MDC Unit Prepared Analyzed

	IVIB I	WIB			
Carrier	%Yield 0	Qualifier Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101	40 - 11	0 113 2319 1Y:80	1/3/13/19 1/:0/	1
. Carrier	9074	40 - 11	0 113 23/9 1Y:80	1/311319 1/:0/	1

Dil Fac

# **QC Sample Results**

InieCt: ufnPwoperIomyaCS wro/ectRite: I I U h mitd wra Gt TestAmerica Job ID: 400-1526C5-4

hDu: AsdyoG

## Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-403456/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 404943 Prep Batch: 403456

				Total					
	Spike	LCS	LCS	Uncert.				%Rec.	
Analyte	Added	Result	Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	
Uaj if m-228	1272	11744		1764	1700	07L04 yliR	C4	L5 - 140	

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 10/ 40 - 110 Carrier 9074 40 - 110

Lab Sample ID: 190-18211-K-1-B DU

**Client Sample ID: Duplicate Matrix: Water Prep Type: Total/NA** Analysis Batch: 404943

**Prep Batch: 403456** Total Sample Sample DU DU Uncert. **RER** 

Result Qual Analyte Result Qual  $(2\sigma + / -)$ RL **MDC** Unit RER Limit Uaj if m-228 07112 9 070L468 9 0720C 1700 07655 yl iR 0714

Carrier %Yield Qualifier Limits Ba Carrier 2576 40 - 110 Carrier 9471 40 - 110

DU DU

TestAmerica	COC.No.	400-53432-23565.1	Page 1 of 2	Job #: 162396		B - NaCH N - None C - Zn Acetate O - AsNaO2			J - DI Water K - EDTA	L.EDA	r of co Other:	<b>ə</b> qwn <sub>N</sub>		Special instructions/Note:								e refained longer than 1 month)	Archive For Months			1540 Outs 31-0	Сотрану	Company	17 0,020,02
cord	Lab PM: Carrier Tracking No(s):		nne.whitmire@testamericainc.com	Analysis Requested	240C -		g GFP(	6Ra22 00_504 01 - 504 10,58	OF MC SM450 300 F 7.005	(Yes Ra228 oride, ilds, 49	5/MSD 9320_1 64 Soli 18,86,C	70 mv M; 2026_21_ 20_06; 2026 2026 2026 2026 2026 2026 2026 2	169 1769 NAS BLOT DS08	N Q N QX	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	Special Instructions/QC Requirements:	. f	Method of Method of Method of	1		Date/Time:	Cooler lefter autifies) C and the Remarks of UNA
Chain of Custody	" ret Sures	NYD THE		Due Date Requested:	TAT Requested (days):	T	PO#		Project #:		Madel	Sample (C=comp,	BTWTissue, Avair)	Preservation Code;	1 20 1/8 11 4/6 G Water	Water						Poison B Unknown Rediclopical		Date:	Company		Date/Time: Company		
<b>TestAmerica Pensacola</b> 3355 McLemore Drive Pensacola, Fl. 32514 Phone (850) 474-1001 Fax (850) 478-2671	Client Information	Kristi Mitchell	Company: Gulf Power Company	Address: BIN 731 One Energy Place	City. Pensacota	State, Zip: FL, 32520	Phone: 850-444-6427(Tel)	Email: krmitche@southerneo.com	Project Name: CCR Smith Plant	Site:		Sample Identification		MW-11							Possible Hazard Identification	Non-Hazard Flammable Skin Initent Po		Empty Kit Rejnquished by:	reeminduished by:	Relinquished by:	Reinquished by:	Custody Seals Intact: Custody Seal No.:	a res a No

Client: Gulf Power Company

Job Number: 400-162396-4 SDG Number: Ashpond

List Source: TestAmerica Pensacola

Login Number: 162396

List Number: 1

Creator: Whitmire, Cheyenne R

Answer	Comment
N/A	
True	
N/A	
True	
True	
True	
True	0.0°C, 0.0°C, 1.5°C IR-7
True	
N/A	
True	
True	
N/A	
	N/A True N/A True True True True True True True True

Client: Gulf Power Company

Job Number: 400-162396-4 SDG Number: Ashpond

List Source: TestAmerica St. Louis

List Creation: 11/27/18 02:25 PM

List Number: 2 Creator: Dupart, Lacee S

Login Number: 162396

Creator. Dupart, Lacee 5		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Gulf Power Company TestAmerica Job ID: 400-1582j 5-4 Pro/ectsRite: CCh Rmitd Plant RDG: Asdpon.

## Laboratory: TestAmerica Pensacola

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	Rtate Pro3ram	4	40160	05-20-1j
Ag A9	IRB \$OC 1E086		784E1	08-88-80
AriLona	Rtate Pro3ram	j	Az0E10	01-18-80
ArZansas DOk	Rtate Pro3ram	5	QQ05Q	0j -01-1j
California	Rtate Pro3ram	j	8610	05-20-1j
Flori. a	g O7AP	4	OQ1010	05-20-1j
Geor3ia	Rtate Pro3ram	4	OQ1010 (F7)	05-20-1j
Illinois	g O7AP	6	800041	10-0j -1j
lowa	Rtate Pro3ram	E	25E	0Q·01-80
* ansas	g O7AP	E	O-10862	18-21-1QK
* entucZy (URT)	Rtate Pro3ram	4	62	05-20-1j
* entucZy (WW)	Rtate Pro3ram	4	j Q020	18-21-1j
7ouisiana	g O7AP	5	20j E5	05-20-1j
7ouisiana (DW)	g O7AP	5	7A01E	18-21-1j
Marylan.	Rtate Pro3ram	2	822	0j -20-1j
Massacdusetts	Rtate Pro3ram	1	M-F70j 4	05-20-1j
Micdi3an	Rtate Pro3ram	6	j j 18	05-20-1j
g ew Jersey	g O7AP	8	F7005	05-20-1j
g ortd Carolina (WW\$RW)	Rtate Pro3ram	4	214	18-21-1j
B⊿adoma	Rtate Pro3ram	5	j Q10	0Q-21-1j
Pennsylvania	g O7AP	2	5Q0045E	01-21-1j
h do. e Islan.	Rtate Pro3ram	1	7AB 0020E	18-20-1QK
Routd Carolina	Rtate Pro3ram	4	j 5085	05-20-1j
Tennessee	Rtate Pro3ram	4	Tg 08j 0E	05-20-1j
Texas	g O7AP	5	T104E048Q5-1Q-16	0j -20-1j
UR Fisd & Wil. life	Fe. eral		7006Q44Q0	0E-21-1j
URDA	Fe. eral		P220-1Q0014Q	06-1E-81
Vir3inia	g O7AP	2	450155	05-14-1j
Wasdin3ton	Rtate Pro3ram	10	Cj 16	06-16-1j
West Vir3inia DOP	Rtate Pro3ram	2	125	05-20-1j

#### Laboratory: TestAmerica St. Louis

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	Expiration Date
AlasZa	Rtate Pro3ram	10	MB 00064	05-20-1j
Ag A9	DoD O7AP		78206	04-05-1j
AriLona	Rtate Pro3ram	j	Az0Q12	18-0Q-1j
California	Rtate Pro3ram	j	8005	05-20-1j
Connecticut	Rtate Pro3ram	1	PH-0841	02-21-1j
Flori. a	g O7AP	4	OQE5Q	05-20-1j
Illinois	g O7AP	6	800082	11-20-1QK
Iowa	Rtate Pro3ram	E	2E2	18-01-1QK
* ansas	g O7AP	E	O-10825	10-21-1j
* entucZy (DW)	Rtate Pro3ram	4	j 0186	18-21-1QK
7ouisiana	g O7AP	5	040Q0	05-20-1j
7ouisiana (DW)	g O7AP	5	7A1Q001E	18-21-1QK
Marylan.	Rtate Pro3ram	2	210	0j -20-1j
Micdi3an	Rtate Pro3ram	6	j 006	05-20-1j
Missouri	Rtate Pro3ram	Е	EQO	05-20-1j

KAccre. itation Sertification renewal pen. in3 - accre. itation Sertification consi. ere. vali. N

TestAmerica Pensacola

# **Accreditation/Certification Summary**

Client: Gulf Power Company

TestAmerica Job ID: 400-1582j 5-4

Pro/ect\$Rite: CCh Rmitd Plant

RDG: Asdpon.

## Laboratory: TestAmerica St. Louis (Continued)

All accre. itations&ertifications del. by tdis laboratory are liste. Ng ot all accre. itations&ertifications are applicable to tdis reportN

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
g eva. a	Rtate Pro3ram	j	MB 00064801Q1	0E-21-1j
g ew Jersey	g O7AP	8	MB 008	05-20-1j
g ew YorZ	g O7AP	8	11515	02-21-1j
g ortd DaZota	Rtate Pro3ram	Q	h80E	05-20-1j
ghC	ghC		84-84Q1E-01	18-21-88
B⊿adoma	Rtate Pro3ram	5	jjjE	0Q-21-1j
Pennsylvania	g O7AP	2	5Q00640	08-8Q-1j K
Routd Carolina	Rtate Pro3ram	4	Q6008001	05-20-1j
Texas	g O7AP	5	T104E041j 2-1Q18	0E-21-1j
UR Fisd & Wil. life	Fe. eral		06Q44Q	0E-21-1j
URDA	Fe. eral		P220-1E-008Q	08-80-80
Utad	g O7AP	Q	MB00064801Q10	0E-21-1j
Vir3inia	g O7AP	2	450820	05-14-1j
Wasdin3ton	Rtate Pro3ram	10	C6j 8	0Q20-1j
West Vir3inia DOP	Rtate Pro3ram	2	2Q1	0Q21-1j

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# THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica** 

# ANALYTICAL REPORT

### TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

## TestAmerica Job ID: 400-162396-7

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

## For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 12/14/2018 4:40:38 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 400-162396-7 SDG: Ashpond

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#### **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-7

SDG: Ashpond

Job ID: 400-162396-7

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-162396-7

#### Metals

Method(s) 6020: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-162396-14). Elevated reporting limits (RLs) are provided.

#### **General Chemistry**

Method(s) SM 4500 CI- E: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-162396-14). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: Due to the concentration of sulfates in the parent sample the MS/MSD were diluted after the spike. The spike amounts were adjusted by the dilution factor. (400-162459-A-1 MS) and (400-162459-A-1 MSD)

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 421795 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-13 (400-162396-14), (400-162459-A-1), (400-162459-A-1 MS) and (400-162459-A-1 MSD). Elevated reporting limits (RLs) are provided.

# **Detection Summary**

n Ceut: f PCAp oy er n om Sauh proRect.dite: nn3 dmitj p@ut TestAmerica Job ID: 400-1528C5-I

dDf: Asj Sou/

# Client Sample ID: MW-1L

					ba4 Sam	ple ID: 066-1	123L92-10
Result	Qualifier	PQb	MDb	Unit	Dil Fac D	Method	Prep Type
0g0015		0g0018	0000045	mL.6	В	5020	TotaG
							3 ecoverab@
0g0l C		0g002B	0g0004C	mL.6	В	5020	TotaG
							3 ecoverab@
0g020		0g01B	0g0020	mL.6	В	5020	TotaG
							3 ecoverab@
15		2g0	0 <b>g</b> 74	mL.6	200	5020	TotaG
							3 ecoverab@
BB0		10	Bg0	mL.6	200	5020	TotaG
							3 ecoverab@
0 <u>9</u> 25		0g0B0	0g011	mL.6	B0	5020	TotaG
							3 ecoverab@
7500		2B0	11 0	mL.6	1	dM 2B40n	TotaGNA
4B00		200	140	mL.6	100	dM 4B00 nGE	TotaGNA
0g040	1	0g10	0g082	mL.6	1	dM 4B00 F n	TotaGNA
710		1B0	42	mL.6	80	dM 4B00 dO4 E	TotaGNA
5qCC				dU	1	Fie G dam S Gu L	TotaGNA
	0g015 0g01 C 0g020 15 BB0 0g25 7500 4B00 0g040	0g01 C 0g020 15 BB0 0g25 7500 4B00 0g040 I 710	0g015         0g018           0g01 C         0g002B           0g020         0g01B           15         2g0           BB0         10           0g25         0g0B0           7500         2B0           4B00         200           0g40 I         0g10           710         1B0	0g015         0g018         0g0045           0g01 C         0g002B         0g0004C           0g020         0g01B         0g0020           15         2g0         0g74           BB0         10         Bg0           0g25         0g0B0         0g011           7500         2B0         11 0           4B00         200         140           0g040         1         0g10         0g082           710         1B0         42	0g015         0g018         0g0045         ml.6           0g1 C         0g002B         0g0004C         ml.6           0g020         0g01B         0g0020         ml.6           15         2g0         0g74         ml.6           BB0         10         Bg0         ml.6           0g25         0g0B0         0g011         ml.6           7500         2B0         11 0         ml.6           4B00         200         140         ml.6           0g040         0g082         ml.6           710         1B0         42         ml.6	Result         Qualifier         PQb         MDb         Unit         Dil Fac         D           0g015         0g0018         0g00045         mL.6         B           0g01 C         0g002B         0g0004C         mL.6         B           0g020         0g01B         0g0020         mL.6         B           15         2g0         0g74         mL.6         200           BB0         10         Bg0         mL.6         200           0g25         0g0B0         0g011         mL.6         B           7500         2B0         11 0         mL.6         1           4B00         200         140         mL.6         100           0g040 I         0g10         0g082         mL.6         1           710         1B0         42         mL.6         80	Og015         Og0018         Og00045         mL.6         B         5020           Og01 C         Og002B         Og0004C mL.6         B         5020           Og020         Og01B         Og0020 mL.6         B         5020           15         2g0         Og74 mL.6         200         5020           BB0         10         Bg0 mL.6         200         5020           0g25         Og0B0         Og011 mL.6         B0         5020           7500         2B0         11 0 mL.6         1 dM 2B40n           4B00         200         140 mL.6         100 dM 4B00 n GE           0g40 I         0g10         0g82 mL.6         1 dM 4B00 F n           710         1B0         42 mL.6         80 dM 4B00 dO4 E

# **Method Summary**

I rite Gt: u f riPwop er I omya Gs wro/ect Rhite: I I Wh mitd wra Gt TestAmerica Job ID: 400-162396-C

hDu: AsdyoG

Method	Method Description	Protocol	Laboratory
6020	( etars )II wR hL	h8 M46	TAE wN5
h( 2, 40l	honij svTotanDissonFej )TDhL	h(	TAE wN5
h( 4,001 n N	I dnorij evTotan	h(	TAE wN5
h( 4, 00 OI	Off orij e	h(	TAE wN5
h( 4,00 hg4 N	hfnatevTotan	h(	TAE wN5
Oienji hamyniG=	Cienj hamyniG=	NwA	TAE wN5
300, A	wreyaratio@vTotanWecoFerabre or DissorFej (etars	h8 M46	TAE wN5

#### **Protocol References:**

NwA U" h NGFiroGmeGtanwrotectioGA=eGcS

h( UxhtaQ arj ( etdoj s Cor Tde N. amiCatioGg P8 ater AQ 8 astep aterx

h8 M46 UxTest (etdojs Cor NFanfatiG= honij 8 astevwdSsicanR demican(etdojswTdirj NjitioQv5 oFember 19M6 AQ Its "yjates7

#### **Laboratory References:**

TAE wN5 UTestAmerica we@sacorav33, , ( cEemore DriFevwe@sacorav0E32, 14vTNE)M, 0L4C4-1001

TestAmerica weGsacora

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-7

SDG: Ashpond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-14	MW-13	Water	11/19/18 14:25	11/20/18 15:40

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-7

SDG: Ashpond

Client Sample ID: MW-13

Lab Sample ID: 400-162396-14

Matrix: Water

Date Collected: 11/19/18 14:25 Date Received: 11/20/18 15:40

AnalFte	Result	Quali <b>B</b> er	PQL	MDL	f nit	D	Prepared	<b>AnalFUed</b>	Dil zac
Arsenic	0y0016		0.0013	0.00046	mg/L		11/30/18 10:45	11/30/18 18:02	5
. arium	0y0 <b>G</b> 9		0.0025	0.00049	mg/L		11/30/18 10:45	11/30/18 18:02	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		11/30/18 10:45	11/30/18 18:02	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		11/30/18 10:45	11/30/18 18:02	5
MolFbdenum	0y020		0.015	0.0020	mg/L		11/30/18 10:45	11/30/18 18:02	5
Selenium	0.00071	U	0.0013	0.00071	mg/L		11/30/18 10:45	11/30/18 18:02	5
Method: 6020 - Metals (ICF	P/MS) - Total Re	coverable	- DL						
AnalFte	,	Quali <b>B</b> er	PQL	MDL	f nit	D	Prepared	AnalFUed	Dil zac
oron	16		2.0	0.84	mg/L		11/30/18 10:45	12/04/18 16:35	200
Calcium	550		10	5.0	mg/L		11/30/18 10:45	12/04/18 16:35	200
•	•	coverable QualiBer	- RA PQL	MDL	f nit	D	Prepared	AnalFUed	Dil zac
AnalFte	•	Quali <b>B</b> er		MDL 0.00034		<u>D</u>	Prepared 11/30/18 10:45	AnalFUed 12/04/18 18:08	
AnalFte Beryllium	Result	Quali <b>B</b> er	PQL		mg/L	D	11/30/18 10:45		5
AnalFte Beryllium Lithium	0.00034	Quali <b>B</b> er	PQL 0.0025	0.00034	mg/L	<u>D</u>	11/30/18 10:45	12/04/18 18:08	5
AnalFte Beryllium Lithium g eneral ChemistrF	Result 0.00034 0y26	Quali <b>B</b> er	PQL 0.0025	0.00034	mg/L mg/L	<u>D</u>	11/30/18 10:45	12/04/18 18:08	50
AnalFte Beryllium Lithium g eneral ChemistrF AnalFte	Result 0.00034 0y26	QualiBer U	PQL 0.0025 0.050	0.00034 0.011 <b>MDL</b>	mg/L mg/L	=	11/30/18 10:45 11/30/18 10:45	12/04/18 18:08 12/07/18 20:28	50
AnalFte Beryllium Lithium g eneral ChemistrF AnalFte Fotal Dissolved Solids	Result 0.00034 0y26 Result	QualiBer U	0.0025 0.050 PQL	0.00034 0.011 <b>MDL</b> 170	mg/L mg/L	=	11/30/18 10:45 11/30/18 10:45	12/04/18 18:08 12/07/18 20:28 AnalFUed	50 50 <b>Dil zac</b>
AnalFte Beryllium Lithium g eneral ChemistrF AnalFte Total Dissolved Solids Chloride	Result	QualiBer U QualiBer	PQL 0.0025 0.050 PQL 250	0.00034 0.011 <b>MDL</b> 170	mg/L mg/L  f nit mg/L mg/L	=	11/30/18 10:45 11/30/18 10:45	12/04/18 18:08 12/07/18 20:28 AnalFUed 11/26/18 10:09	Dil zac
AnalFte Beryllium Lithium g eneral ChemistrF AnalFte Total Dissolved Solids Chloride zluoride	Result 0.00034 0y26 Result 8600 4500	QualiBer U QualiBer	PQL 0.0025 0.050 PQL 250 200	0.00034 0.011 MDL 170 140 0.032	mg/L mg/L  f nit mg/L mg/L	=	11/30/18 10:45 11/30/18 10:45	12/04/18 18:08 12/07/18 20:28 AnalFUed 11/26/18 10:09 12/04/18 10:21	Dil zac
AnalFte Beryllium Lithium  g eneral ChemistrF AnalFte Total Dissolved Solids Chloride zluoride SulBate	Result 0.00034 0y26  Result 8600 4500 0y040 810	QualiBer  QualiBer	PQL 0.0025 0.050  PQL 250 200 0.10	0.00034 0.011 MDL 170 140 0.032	mg/L mg/L  f nit mg/L mg/L mg/L mg/L	=	11/30/18 10:45 11/30/18 10:45	12/04/18 18:08 12/07/18 20:28 AnalFUed 11/26/18 10:09 12/04/18 10:21 11/28/18 14:55	55 50 <b>Dil zac</b> 1 100 1
Method: 6020 - Metals (ICF AnalFte Beryllium Lithium  g eneral ChemistrF AnalFte Total Dissolved Solids Chloride zluoride SulBate  Method: zield SamplinH - z AnalFte	Result 0.00034 0y26  Result 8600 4500 0y040 810  zield SamplinH	QualiBer  QualiBer	PQL 0.0025 0.050  PQL 250 200 0.10	0.00034 0.011 MDL 170 140 0.032	mg/L mg/L  f nit mg/L mg/L mg/L mg/L	=	11/30/18 10:45 11/30/18 10:45	12/04/18 18:08 12/07/18 20:28 AnalFUed 11/26/18 10:09 12/04/18 10:21 11/28/18 14:55	Dil zac 5 50  Dil zac 1 100 1  Dil zac

## **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-7

SDG: Ashpond

#### **Qualifiers**

#### **Metals**

Qualifier Qualifier Description

U Indicates that the compound was analyzed for but not detected.

## **General Chemistry**

Qualifier	Qualifier	Description

The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

U Indicates that the compound was analyzed for but not detected.

J3 Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

## Glossary

Abbreviation	These commonly	v used abbreviations may	v or may not	be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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## **Lab Chronicle**

Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant TestAmerica Job ID: 400-162396-j

RDG: Asdpon5

**Client Sample ID: MW-14** 

Date Collected: 11/19/18 10:3R Date v ecei5ed: 11/36/18 1R:06

Lab Sample ID: 066-123492-10

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	v un	Factor	Number	or Analyzed	Analyst	Lab
Total h eco7erable	Prep	3008A			421468	11\$30\$1E 10:48	DhL	TANPLv
Total h eco7erable	Analysis	6020		8	421j 23	11\$30\$IE 1E:02	DhL	TANPLv
Total h eco7erable	Prep	3008A	DN		421468	11\$30\$1E 10:48	DhL	TANPLv
Total h eco7erable	Analysis	6020	DN	200	422048	12 <b>\$</b> 04 <b>\$</b> 1E 16:38	DhL	TANPLv
Total h eco7erable	Prep	3008A	hΑ		421468	11\$30\$1E 10:48	DhL	TANPLv
Total h eco7erable	Analysis	6020	hΑ	8	422048	12 <b>\$</b> 04\$1E1E:0E	DhL	TANPLv
Total h eco7erable	Prep	3008A	hΑ		421468	11\$30\$1E 10:48	DhL	TANPLv
Total h eco7erable	Analysis	6020	hΑ	80	422891	1250j SIE 20:2E	DhL	TANPLv
TotalS A	Analysis	RM 2840C		1	420j j 8	11\$26\$1E 10:09	CNB	TANPLv
TotalS A	Analysis	RM 4800 CI- L		100	421E3E	12 <b>\$</b> 04\$1E 10:21	hhC	TANPLv
TotalS A	Analysis	RM 4800 F C		1	4211E0	11\$2E\$1E 14:88	BAB	TANPLv
TotalS A	Analysis	RM 4800 RO4 L		30	421j 98	12\$03\$1E 10:00	hhC	TANPLv
Total& A	Analysis	Fiel5 Rampling		1	421918	11SI9SIE 14:28	CDH	TANPLv

#### Laboratory v eferences:

TANPLv = TestAmerica Pensacola, 3388 McNemore Dri7e, Pensacola, FN32814, TLN(E80)4j 4-1001

12/14/2018

# **QC Association Summary**

n Ceut: f PCApoyern om Sauh proRectWrite: nn3 dmitj p@ut TestAmerica Job ID: 400-1526C5-I

dDf: Asj Sou/

## **Metals**

Prep Batch: 39237L

bal Sample IT	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14	UM-16	TotaG3 ecoLerab@	Mater	600vA	
400-1526C5-14 - 3 A	UM-16	TotaG3 ecoLerab@	Mater	600vA	
400-1526C5-14 - D7	UM-16	TotaG3 ecoLerab@	Mater	600vA	
U8 400-42145vW-A Fv	Uetj o/ 8@uB	TotaG3 ecoLerab@	Mater	600vA	
7n d 400-42145v\ <b>2</b> ⁄-A	7ab n outro@damS@	TotaG3 ecoLerab@	Mater	600vA	
400-152402-n-C-8 Ud Fv	U atriE d SiBe	TotaG3 ecoLerab@	Mater	600vA	
400-152402-n-C-n UdD Fv	UatriEdSiBe DPS@cate	Tota@ ecoLerab@	Mater	600vA	

#### Analysis Batch: 39259(

bal Sample IT	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14	UM-16	Tota@ ecoLerab@	Mater	5020	42145v
U8 400-42145vW-A Fv	Uetjo/8@uB	TotaG3 ecoLerab@	Mater	5020	42145v
7n d 400-42145v\2/A	7ab n outro@damS@	Tota G3 ecoLerab @	Mater	5020	42145v
400-152402-n-C-8 Ud Fv	U atriEd SiBe	Tota G3 ecoLerab@	Mater	5020	42145v
400-152402-n-C-n UdD Fv	UatriEdSiBe DPS@cate	TotaG3 ecoLerab@	Mater	5020	42145v

#### Analysis Batch: 399) 3L

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14 - D7	UM-16	Tota@ ecoLerab@	Mater	5020	42145v
400-1526C5-14 - 3 A	UM-16	Tota G ecoLerab @	Mater	5020	42145v

#### Analysis Batch: 399L42

bal Sample IT	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14 - 3 A	UM-16	Tota@ ecoLerab@	Mater	5020	42145v

## **0** eneral Chemistry

## Analysis Batch: 39) 55L

b	al Sample 🏻	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
40	00-1526C5-14	UM-16	Tota 😘 A	Mater	dU 2v40n	
U	8 400-420I I vW	Uetjo/8@uB	Tota 😘 A	Mater	dU 2v40n	
71	nd 400-420II vW2	7ab noutro@lamS@	Tota 😘 A	Mater	dU 2v40n	
40	00-1526C5-A-1 D^	DPS@cate	Tota OB/A	Mater	dU 2v40n	

## **Analysis Batch: 39221)**

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14	UM-16	Tota 😘 A	Mater	dU 4v00 k n	<del></del> -
U8 400-4211N0W	Uetj o/ 8@uB	Tota 😘 A	Mater	dU 4v00 k n	
7n d 400-4211N0W/	7ab n outro cd am S@	Tota 😘 A	Mater	dU 4v00 k n	
400-1526C5-A-CUd	U atriE d SiBe	Tota 😘 A	Mater	dU 4v00 k n	
400-1526C5-A-CUdD	UatriEdSiBeDPS@cate	Tota 😘 A	Mater	dU 4v00 k n	
400-1526C5-A-1I D^	DPS@cate	Tota 🗫 A	Mater	dU 4v00 k n	

## Analysis Batch: 39254L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8 Prep Batch
400-1526C5-14	UM-16	Tota@NA	Mater	dU 4v00 dx 4 O
U8 400-421I CvV6/	Uetj o/ 8@uB	Tota@AYA	Mater	dU 4v00 dx 4 O
7n d 400-421l OvW	7ab n outro cd am S@	Tota 😘 A	Mater	dU 4v00 dx 4 O
U37 400-4211 CvW	7ab n outro cd amS@	Tota@AA	Mater	dU 4v00 dx 4 O
400-1524vC-A-1 Ud	U atriEd SiBe	Tota 😘 A	Mater	dU 4v00 dx 4 O

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# **QC Association Summary**

n Geut: f PGxpoy er nomSauh proRectWrite: nn3 dmitj p@ut TestAmerica Job ID: 400-1526C5-I

dDf: Asj Sou/

# 0 eneral Chemistry ©ontinue86

Analysis Batch: 39254L Continue86

bal Sample IT	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1524vC-A-1 UdD	UatriEdSiBe DPS@ate	Tota <b>QB</b> /A	Mater	dU 4v00 dx 4 O	

Analysis Batch: 3921(1

bal Sample II	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14	UM-16	Tota 😘 A	Mater	dU 4v00 nGO	
U8 400-421N6NA5/	Uetj o/ 8@uB	Tota 😘 A	Mater	dU 4v00 nGO	
7n d 400-421N6NNV	7ab n outro@damS@	Tota 🗫 A	Mater	dU 4v00 nGO	
U 3 7 400-421N6NM	7ab n outro@damS@	Tota 🗫 A	Mater	dU 4v00 nGO	
400-1526C5-A-2 Ud	U atriE d SiBe	Tota 😘 A	Mater	dU 4v00 nGO	
400-1526C5-A-2 UdD	UatriEdSiBe DPS@cate	Tota <b>ଔ</b> A	Mater	dU 4v00 nGO	

# Fiel8 Service / Mol ile bal

Analysis Batch: 39242L

bal Sample IT	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-14	UM-16	Tota <b>QA</b> /A	Mater	kie G dam S Gug	

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InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wra Gt TestAmerica Job ID: 400-162396-C

hDu: AsdyoG

### Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-421465/1-A ^5 **Matrix: Water** 

**Analysis Batch: 421723** 

**Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 421465** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ArseGc	000046	g	000013	0 <b>/</b> 00046	mLR8		11R30R15 10:4B	11R30R15 1B:42	В
Marif m	0 <b>\(\O)</b> 0049	g	0 <b>0</b> 002B	0 <b>\times</b> 0049	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
MerSmif m	0000034	g	0 <b>0</b> 002B	0 <b>\text{\$\text{\$0}}0034</b>	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
MoroG	00021	g	0 <b>0</b> B0	0 <b>\@</b> 21	mLR8		11R30R15 10:4B	11R30R15 1B:42	В
I ancif m	0113	g	0 <b>12</b> B	0113	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
I dromif m	000011	g	0 <b>0</b> 002B	000011	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
I obant	000040	g	0 <b>0</b> 02B	0 <b>\(\O)</b> 0040	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
8itdif m	0 <b>७</b> 011	g	0 <b>0</b> 00B0	000011	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
7 on Soje Gfm	000020	g	0 <b>७</b> 1B	0 <b>\@</b> 020	mLR8		11 <b>R3</b> 0R15 10:4B	11R30R15 1B:42	В
heneGf m	0 <b>0</b> 00C1	g	00013	0 <b>0</b> 000C1	mLR8		11R30R15 10:4B	11R30R15 1B:42	В

Lab Sample ID: LCS 400-421465/2-A

**Matrix: Water** 

**Analysis Batch: 421723** 

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable** 

**Prep Batch: 421465** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Unit D %Rec ArseGc 0**0**B00 0**/**049B mLR8 50 - 120 Marif m 0**0**0B00 000453 mLR8 9C 50 - 120 MerSmif m 0**10**B00 0**W**B60 mLR8 112 50 - 120 MoroG 0000 106 50 - 120 01106 mLR8 I arcif m B**W**0 4559 mLR8 95 50 - 1200**0**B00 100 I dromif m 000495 mLR8 50 - 120I obant 0**0**B00 0**W**B15 mLR8 104 50 - 120 8itdif m 0**0**B00 0**W**B45 mLR8 110 50 - 120 7 on Sbj eGf m 0**0**B00 0**/**040C mLR8 9B 50 - 120 hereGf m 0**0**B00 000492 mLR8 95 50 - 120

Lab Sample ID: 400-162402-C-9-B MS ^5

**Matrix: Water** 

Analysis Batch: 421723

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** Prep Batch: 421465

Alialysis Datcii. 421725	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
ArseGc	00023		0 <b>0</b> B00	0 <b>W</b> C4B		mLF8		102	OB- 12B
Marif m	<b>0\(\pi\)</b> 014	1	0 <b>0</b> 0B00	0 <b>0</b> 0B12		mLF8		100	OB - 12B
MerSminfm	0000034	g	0 <b>0</b> 0B00	0 <b>0</b> 0B04		mLF8		101	OB - 12B
MoroG	00030	l	0000	0U3B		mLF8		104	CB-12B
I ancif m	6 <b>W</b>		B <b>W</b> 0	1019		mLF8		99	OB - 12B
I dromif m	<b>0\(\pi\)</b> 011	g	0 <b>0</b> 0B00	0 <b>0</b> 0B09		mLF8		102	OB - 12B
I obant	000040	g	0 <b>0</b> B00	0 <b>0</b> B30		mLF8		106	OB - 12B
8itdif m	<b>0\(\pi\)</b> 011	g	0 <b>0</b> 0B00	0 <b>0</b> 0B10		mLF8		102	OB - 12B
7 onSojeGfm	<b>0\(\pi\)</b> 046	1	0 <b>0</b> 0B00	0 <b>0</b> 0B44		mLF8		99	OB - 12B
heneGf m	000033		0 <b>0</b> B00	0 <b>0</b> B09		mLF8		9B	CB <sub>-</sub> 12B

Lab Sample ID: 400-162402-C-9-C MSD ^5

**Matrix: Water** 

Analyte ArseGc

**Analysis Batch: 421723** 

						Prep Type: Total Recoverable				
								Prep Ba	atch: 42	21465
Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
00023		0 <b>0</b> B00	0 <b>W</b> CB3		mLR8	_	104	CB <sub>-</sub> 12B	1	20

TestAmerica we Gacora

**Client Sample ID: Matrix Spike Duplicate** 

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I nie Gt: ufn Pwoper I omya GS TestAmerica Job ID: 400-162396-C wro/ectRtite: II. hmitd wna Gt hDu: AsdyoG

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-162402-C-9-C MSD ^5 **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total Recoverable Analysis Batch: 421723 Prep Batch: 421465** MSD MSD RPD Sample Sample Spike %Rec. Result Qualifier Added Result Qualifier Limits RPD Analyte Unit %Rec Limit Marif m 0**0**0014 I 0**0**B00 0**0**B16 mLR8 100 CB<sub>-</sub> 12B 20 MerSmif m 0**0**00034 g 0**W**B00 0WB06 mLR8 101 **CB**<sub>-</sub> 12B 0 20 MoroG 00030 00100 01131 mLR8 101 CB 12B 3 20 I ancif m 6**W** B**W**0 1100 mLR8 100 **CB-12B** 20 I dromif m 0**0**0011 g 0**0**B00 0**0**B21 mLR8 104 CB<sub>-</sub> 12B 20 0**0**B00 20 I obart 0000040 0**0**B36 mLR8 10C **CB-12B** 

Method: SM 2540C - Solids, Total Dissolved (TDS)

0**0**0011 g

0**0**0046 I

000033

Lab Sample ID: MB 400-420775/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

0**0**B16

0WB42

0WB09

mLR8

mLR8

mLR8

103

99

9B

CB<sub>-</sub>12B

**CB**<sub>-</sub> 12B

**CB-12B** 

8itdif m

7 orSbj eGf m

hereOf m

**Analysis Batch: 420775** MR MR

Result Qualifier **PQL MDL** Unit Prepared Analyzed Dil Fac BLO 314 mLF8 TotanDissonvej honijs 314 11R26R15 10:09 a

Lab Sample ID: LCS 400-420775/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 420775** 

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Analyte 293 3B0 TotanDissorvej horijs ml R8 C5 <sub>-</sub> 122 119

0**0**B00

0WB00

0**0**B00

Lab Sample ID: 400-162396-A-1 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 420775** 

Sample Sample DU DU **RPD** Result Qualifier RPD Analyte Result Qualifier Unit D Limit TotanDissonvej honij s 55 55**W** mLR8 0

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-421838/6 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421838** 

MB MB

PQL Analyte Result Qualifier **MDL** Unit **Prepared** Analyzed Dil Fac 1**4** g 200 I drorij e 14 mLR8 12R04R15 09:2B

Lab Sample ID: LCS 400-421838/7 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 421838

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
l dnorij e	 3000	3214		mLR8	_	105	90 - 110	 

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12/14/2018

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InieCt: ufnPwoperIomyaCS wro/ectRite: II. hmitd wra Gt TestAmerica Job ID: 400-162396-C

hDu: AsdyoG

# Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: MRL 400-421838/3	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 421838	

	Эріке	IVIKL	IVIKL				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I drorij e	 2000	1669	I	mLF8	_	54	B0 - 1B0	

Lab Sample ID: 400-162396-A-2 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421838** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
I drorij e	13		1000	23UB		mLR8		10C	C3 - 120	

Lab Sample ID: 400-162396-A-2 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 421838** 

•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
l dnorij e	13		1000	2312		mLR8		10B	C3 <sub>-</sub> 120	1	5

#### Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-421180/3 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 421180

MB MB Analyte Result Qualifier PQL **MDL** Unit Prepared Analyzed Frfi orij e 0**0**32 g 0110 00/32 mLR8 11R25R15 14:20

Lab Sample ID: LCS 400-421180/4 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 421180** 

	<b>Бріке</b>	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Frfi orij e	4400	3190		mLF8		95	90 - 110	

Lab Sample ID: 400-162396-A-9 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Frfi orij e	0U3		1000	1110		mLR8		9C	OB - 12B	

Lab Sample ID: 400-162396-A-9 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 421180											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Frfi orij e	0U3		1000	1110		mLF8		9C	CB - 12B	0	4

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I nie Gt: ufn Pwoper I omya GS wro/ectRtite: II. hmitd wna Gt TestAmerica Job ID: 400-162396-C

hDu: AsdyoG

Method:	SM	4500	F	C -	<b>Fluoride</b>	(Continued)
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Lab Sample ID: 400-162396-A-17 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit 0**Ш**32 g mLR8 Frfi orij e 0**0**32 g NI

#### Method: SM 4500 SO4 E - Sulfate, Total

Client Sample ID: Method Blank Lab Sample ID: MB 400-421795/6 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

MB MB

PQL **MDL** Unit Analyte Result Qualifier Analyzed Dil Fac Prepared hf mate <u>14</u> q BLØ 14 mLR8 12R03R15 09:16

Lab Sample ID: LCS 400-421795/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits hf nPate 1BW 1B**\**3 mLR8 90 - 110

Lab Sample ID: MRL 400-421795/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

MRL MRL Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits hf mPate B**W**0 4U2 Ī mLR8 B0 - 1B0

Lab Sample ID: 400-162459-A-1 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421795** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits C20 9190 696 J3 hf mate mLR8 -2CC CC- 125

Lab Sample ID: 400-162459-A-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421795** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec 9190 hf nPate C20 655 J3 mLR8 CC\_ 125 -3BB

Client Information	Samples:	Whitmi	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-53432-23565 1	23565 1
	2	E-Mail:	E-Mail: chevenne.whitmire@testamencainc.com	T -	Page:	_
Company: Gulf Power Company			Academa	Analysis Description	Job #:	7 8
Address: BIN 731 One Energy Diace	Due Date Requested:			neseen neseen	Preservation Codes:	n Codes:
City. Densamla	TAT Requested (days):	T	S240C		A - HCL B - NaOH	
State, Zp: FL, 32520			etstlu2 e		C - Zn Acetate D - Nivic Acid E - NaHSO4	P - Na204S
Phone: 850-444-6427(Tel)	PO#: Purchase Order not required		228_67 64_ <u>E -</u> Fluorid		F - MeOH G - Amchlor	
Email: krmitche@soufhernco.com	WO#;		No. Servanto (1900 Se		I - Recordic	
Project Name: CCR Smith Plant	Project #: 40006609	,	28, Ra e, SM4 4600 1, Co.L		tainer K-EDTA L-EDA	W - ph 4-5 Z - other (specify)
Site:	SSOW#:		Se R as 05 Se R as 100 Ho 100		noo to	
Sample Identification	Sample Date Time (	Sample Matrix Type (wester, grandle, cargons), Grandle, Grandle, cargons)	MiRM amohaq the assay 21se the assay 21se - 3 10 2024M2 bevlozeld ison 18,68,5A - 0506 - 9nildmeSbiol		Total Mumber of	Special Instructions Motor.
	X	ation Code:	Q N QX			ad monacacharace.
DMW-13	11/19/18/1475	Water Water	XXX			
≥ 16		Water				
of						
18						
					Ref	
1			Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	be assessed if samples are	retained longer	than 1 month)
Non-Hazard Flammable Skin Irritant Poison B Deliverable Requested: 1.11 III. IV Other (snecity)	Unknown	Radiological	Return To Client	oosal By Lab	Archive For	Months
			Special instructions/QC Requirements	.		
Empty Kil Relipquished by:	Date:		ne:	Method of Snipment:		
weininguished by	81/00/1)	1540 Company RDM	Receivedor	Date/Time:	1 ×1.00	Le Company
Relinquished by:	Date/Time:	Сотрапу	1	Date/Time:		Company
	Date/Time:	Сатрапу	Received by:	Date/Time:		Company
Custody Seals Intact: Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks	ither Remarks.		
18						

TestAmerica

Chain of Custody Record

3355 McLemore Drive Pensacola, FL 32514 Phone (850) 474-1001 Fax (850) 478-2671

TestAmerica Pensacola

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-162396-S

DAG Number: s hdpon/

List Source: TestAmerica Pensacola

Login Number: 162396

List Number: 1

Creator: Whitmire, Cheyenne R

Creator: Whitmire, Cheyenne R		
Question	Answer	Comment
c a/ ioavti' ity wahnkt vdev <e a="" ah="" bav<.="" by="" ey="" hur'="" ih="Rg" meahure="" metert<="" or="" roun="" td=""><td>NRs</td><td></td></e>	NRs	
, de voolerlh vuhto/ y heal° if prehent° ih intavtT	, rue	
Dample vuhto/ y healh° if prehent° are intavtT	NRs	
, de vooler or hampleh / o not appear to da' e been vompromihe/ or tampere/ witdT	, rue	
Dampleh were revei' e/ on iveT	, rue	
Cooler , emperature ih avveptableT	, rue	
Cooler , emperature ih revor/ e/ T	, rue	0105C° 0105C° 111 5C 7c -S
COC ih prehentT	, rue	
COC ih fille/ out in in< an/ le. ibleT	, rue	
COC ih fille/ out witd all pertinent informationT	, rue	
7h tde Fiel/ Damplerkh name prehent on COC?	, rue	
, dere are no / ihvrepanvieh between tde vontainerh revei' e/ an/ tde COCT	, rue	
Dampleh are revei' e/ witdin Hol/ in. , ime (exvlu/ in. tehth witd imme/ iate H, h)	, rue	
Dample vontainerh da' e le. ible labelhT	, rue	
Containerh are not bro <en lea<in.="" or="" t<="" td=""><td>, rue</td><td></td></en>	, rue	
Dample vollevtion / ateRimeh are pro' i/ e/ T	, rue	
s ppropriate hample vontainerh are uhe/ T	, rue	
Dample bottleh are vompletely fille/ T	, rue	
Dample Preher' ation Verifie/ T	, rue	
, dere ih huffivient ' olTfor all requehte/ analyheh° invlTany requehte/ MDRMDAh	, rue	
Containerh requirin. zero dea/ hpave da' e no dea/ hpave or bubble ih =6mm (1¾")T	NRs	
Multipdahiv hampleh are not prehentT	, rue	
Dampleh / o not require hplittin. or vompohitin. T	, rue	
c ehi/ ual Cdlorine Cdev <e t<="" td=""><td>NRs</td><td></td></e>	NRs	

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Pro/ect\$Rite: CCh Rmitd Plant

TestAmerica Job ID: 400-162396-j
RDG: Asdpon.

# **Laboratory: TestAmerica Pensacola**

All accre. itations&ertifications del. by tdis laboratory are liste. N 5 ot all accre. itations&ertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	Rtate ProBram	4	401g0	06-30-19
A5 AO	IRE \$7 C 1j 02g		L24j 1	02-22-20
Arizona	Rtate ProBram	9	AZ0j 10	01-12-20
Arkansas D7Q	Rtate ProBram	6	88-0689	09-01-19
California	Rtate ProBram	9	2g10	06-30-19
Flori. a	57LAP	4	781010	06-30-19
GeorBia	Rtate ProBram	4	781010 (FL)	06-30-19
Illinois	57LAP	g	200041	10-09-19
lowa	Rtate ProBram	j	36j	08-01-20
Kansas	57LAP	j	7-102g3	12-31-18
Kentucky (URT)	Rtate ProBram	4	g3	06-30-19
Kentucky (WW)	Rtate ProBram	4	98030	12-31-18
Louisiana	57LAP	6	309j 6	06-30-19
Louisiana (DW)	57LAP	6	LA180023	12-31-18
Marylan.	Rtate ProBram	3	233	09-30-19
Massacdusetts	Rtate ProBram	1	M-FL094	06-30-19
MicdiBan	Rtate ProBram	g	9912	06-30-19
5 ew Jersey	57LAP	2	FL006	06-30-19
5 ortd Carolina (WW\$RW)	Rtate ProBram	4	314	12-31-19
Ekladoma	Rtate ProBram	6	9810	08-31-19
Pennsylvania	57LAP	3	68-0046j	01-31-19
h do. e Islan.	Rtate ProBram	1	LAE 0030j	12-30-18
Routd Carolina	Rtate ProBram	4	96026	06-30-19
Tennessee	Rtate ProBram	4	T5 0290j	06-30-19
Texas	57LAP	6	T104j 04286-18-1g	09-30-19
UR Fisd & Wil. life	Fe. eral		L70g8448-0	0j -31-19
URDA	Fe. eral		P330-18-00148	0g-1j -21
VirBinia	57LAP	3	460166	06-14-19
WasdinBton	Rtate ProBram	10	C91g	0g-1g-19
West VirBinia D7P	Rtate ProBram	3	136	06-30-19

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-162396-8

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Cheyrond Whitmin

Authorized for release by: 12/28/2018 2:04:57 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Case Narrative**

Client: Gulf Power Company Pro/ectSRite: CCh Rmitd Plant TestAmerica Job ID: 400-162396-j

RDG: AsdponM

Job ID: 400-162396-8

**Laboratory: TestAmerica Pensacola** 

**Narrative** 

Job Narrative 400-162396-8

#### RAD

( etdoM)s PrecRep80: h aMum 22j Prep Bacd 403456: Tde following samples were reMuceMMue to potential matrix interference: ( W-13 )400-162396-14. Tde samples daMyellow Mscoloration, seMment, anMa strong sulfur oMbr. Rample 310-144991-1 was reMiceMMue to limiteMsample volume.

( etdoMys\_PrecRep-21: haMum 226 Prep Bacd 403442: Tde following samples were reMuceMMue to potential matrix interference: ( W-13 )400-162396-14\_. Tde samples daMyellow Mscoloration, seMment, anMa strong sulfur oMbr. Rample 310-144991-1 was reMuceMMue to limiteMsample volume.

# **Method Summary**

n Ceut: f PCApoyern om Sauh profect/Wite: nn8 dmitj p@ut TestAmerica Job ID: 400-1526C5-I

dDf: Asj Sou/

Method	Method Description	Protocol	Laboratory
C613	8a/ iPm-225 (f Fpn)	d9 I 45	TAL dL
C620	8 a/ iPm-22l (f Fpn)	d9   45	TAL dL
8 a225_8 a22l	n ombiue/ 8 a/ iPm-225 au/ 8 a/ iPm-22l	TAL-dTL	TAL dL
precdeS_0	preSaratiou, preciSitate deSaratiou	Noue	TAL dL
precdeS-21	preSaratiou, preciSitate deSaratiou (21-Dah lu-f roy tj )	Noue	TAL dL

#### **Protocol References:**

Noue = Noue

d9 | 45 = "Test Metj o/ s For Eva@atiug do@ 9 aste, pj hsica@Nj emica@Metj o/ s", Tj ir/ E/ itiou, November 10 5 Au/ Its US/ ates.

TAL-dTL = TestAmerica Laboratories, dt. LoPis, Faci@th dtau/ ar/ OSeratiug proce/ Pre.

#### **Laboratory References:**

TAL dL = TestAmerica dt. LoPis, 16713 8 i/ er TraiGNortj , Eartj nith, MO 56043, TEL (614)20 -l 355

# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-8

SDG: Ashpond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-14	MW-13	Water	11/19/18 14:25	11/20/18 15:40

# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-8

SDG: Ashpond

**Client Sample ID: MW-13** 

Lab Sample ID: 400-162396-14

**Matrix: Water** 

Date Collected: 11/19/18 14:25 Date Received: 11/20/18 15:40

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	6.12		0.499	0.743	1.00	0.131	pCi/L	11/29/18 15:08	12/21/18 07:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					113 2318 1: 908	1/3/13/8 05946	

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	5.49		0.617	0.797	1.00	0.522	pCi/L	11/29/18 16:50	12/11/18 12:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					113 23 8 1. 9 0	1/3/13/8 1/901	1
Y Carrier	527.		40 - 110					113 2318 1. 9 0	1/3/13/8 1/901	1

Method: Ra226_Ra	228 - Con	nbined Rad	dium-226 a	nd Radium	1-228					
_			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	11.6		0.794	1.09	5.00	0.522	pCi/L		12/27/18 15:10	1

# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-8

SDG: Ashpond

#### **Qualifiers**

#### Rad

Qualifier	Qualifier	Description
-----------	-----------	-------------

U Result is less than the sample detection limit.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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#### **Lab Chronicle**

Client: Gulf Power Company Pro&ctRite: CCd hmit3 Plant TestAmerica Job ID: 400-1526j 5-/

hDG: As3pon8

**Client Sample ID: MW-14** 

Date Collected: 11/19/18 10:3R Date vecei5ed: 11/36/18 1R:06

Lab Sample ID: 066-123492-10

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	v un	Factor	Number	or Analyzed	Analyst	Lab
TotalR. A	Prep	Prechep-21			406442	11F2j F1/ 17:0/	C9P	TA9 h9
TotalR. A	Analysis	j 617		1	405j 65	12R21R1/ 0N:46	CDd	TA9 h9
TotalR. A	Prep	Prech epM0			406475	11F2j F1/ 15:70	C9P	TA9 h9
TotalR. A	Analysis	j 620		1	404j 46	12R11R1/ 12:01	CDd	TA9 h9
Total <b>R</b> .A	Analysis	d a225Md a22/		1	40NN6N	12R2NR1/ 17:10	d T_	TA9 h9

#### Laboratory v eferences:

TA9 h9 = TestAmerica ht. 9ouis, 16M17 di8er Trail Lort3, Eart3 City, \_ O 56047, TE9 (614)2j / -/ 755

# **QC Association Summary**

I nieGt: ufnPwoperIomyaGS wro/ectRtite:IIWhmitdwnaGt TestAmerica Job ID: 400-162396-C

hDu: AsdyoG

#### Rad

**Prep Batch: 403442** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-14	NM-13	TotanBA	Mater	wrechey-21	
Nk 160-403442R23-A	NetdojknaGL	Totan BA	Mater	wrechey-21	
8l h 160-403442R-A	8ab I o Gronhamyne	Totan BA	Mater	wrechey-21	
190-1C211-K-1-A DU	Df yricate	Totan BA	Mater	wrechey-21	

#### **Prep Batch: 403456**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-14	NM-13	TotanBA	Mater	wrechey_0	
Nk 160-403456R23-A	Netdoj knaGL	Totan RBA	Mater	wrechey_0	
8l h 160-403456R-A	8ab I oGronhamyre	Totan RBA	Mater	wrechey_0	
190-1C211-K-1-k DU	Df yricate	TotanBA	Mater	wrechey_0	

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n Geut: f PGAp oy er n om Sauh profectulite: nn9 dmitj p@ut TestAmerica Job ID: 400-1526C5-I

dDf: Asj Sou/

## Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-403442/23-A

Lab Sample ID: LCS 160-403442/1-A

**Matrix: Water** 

Analyte

9 a/ iPm-225

**Matrix: Water** 

Analyte

9 a/ iPm-225

Ba Carrier

Analysis Batch: 406936

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 403442** 

Count Total мв мв Uncert. Uncert. Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit **Prepared** Analyzed Dil Fac 0704660 8 070321 07032C 1700 0712I Sn iU 1112CU1 1L:01 12121U1 03:46

RL

1700

MB MB

%Yield Carrier Qualifier Limits Ba Carrier 101 40 - 110

**Client Sample ID: Lab Control Sample** 

<u>113 2319 18:09</u> <u>1/3 1319 05:46</u>

Prep Type: Total/NA

Prep Batch: 403442

Analyzed

Total

LCS LCS

Result Qual

167L2

1740

Uncert.

 $(2\sigma + / -)$ 

MDC Unit 0710L SniU

%Rec ΤC

Prepared

Limits 5l <sub>-</sub> 163

%Rec.

LCS LCS

Carrier %Yield Qualifier

Analysis Batch: 406937

Limits 40 - 110

Spike

Added

1L71

Lab Sample ID: 190-18211-K-1-A DU

10/

**Matrix: Water** 

Analysis Batch: 406937

**Client Sample ID: Duplicate Prep Type: Total/NA** 

Prep Batch: 403442

Sample Sample DU DU

Analyte Result Qual 9 a/ iPm-225 -070210 8

Result Qual 0702C30 8

Uncert.  $(2\sigma + / -)$ 070452

Total

RL **MDC** Unit 1700 070I 01 Sn iU

RER Limit 0735

חום חום

Carrier %Yield Qualifier Limits Ba Carrier 2576 40 - 110

# Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-403456/23-A

**Matrix: Water** 

**Analysis Batch: 404941** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 403456

Total Count MB MB Uncert. Uncert.

Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit **Prepared** Analyzed 9 a/ iPm-22l 076416 8 072C5 072G 1700 07432 SniU 1112CUI 15:L0 12U1UI 12:02

MB MB

Carrier **%Yield Qualifier** Limits 40 - 110 Ba Carrier 101 9074 40 - 110 Carrier

Analyzed

Dil Fac

Dil Fac

113 2319 1Y:80 1/311319 1/:0/ 113 2319 1Y:80 1/311319 1/:0/

Prepared

TestAmerica peusaco@

Dil Fac

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**RER** 

# **QC Sample Results**

n Geut: f PGxpoy er nomSauh proRectUdite: nn9 dmitj p@ut TestAmerica Job ID: 400-1526C5-I

**Client Sample ID: Duplicate** 

dDf: Asj Sou/

#### Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-403456/1-A

Matrix: Water

Analysis Batch: 404943

Prep Batch: 403456

Total

Spike LCS LCS Uncert. %Rec. Added **Analyte** Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Limits 9 a/ iPm-22l 1272 11744 1764 1700 07L04 SniU C4 L5 - 140

 Carrier
 %Yield Qualifier
 Limits

 Ba Carrier
 10/
 40 - 110

 . Carrier
 9074
 40 - 110

Lab Sample ID: 190-18211-K-1-B DU

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 404943

Prep Batch: 403456

Analysis Batch: 404943 Prep Batch: 403456

Sample Sample DU DU Uncert. **RER** Analyte Result Qual Result Qual  $(2\sigma + / -)$ RL **MDC** Unit RER Limit 1700 9 a/ iPm-22I 07112 8 070L46l 8 0720C 07655 SniU 0714

 DU DU

 Carrier
 %Yield Qualifier
 Limits

 Ba Carrier
 2576
 40 - 110

 . Carrier
 947l
 40 - 110

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**Chain of Custody Record** 

3355 McLemore Drive Pensacola, FL 32514 Phone (850) 474-1001 Fax (850) 478-2671

**TestAmerica Pensacola** 

**TestAmerica** 

	1	Lab PM:		Carrier Tracking No(s):	COC No:	
Client Information	士	Whitmire,	Whitmire, Cheyenne R		400-53432-23565.1	
Kristi Mitchell	380 2458	E-wall: cheyenne	E-wall: cheyenne.whitmire@testamericainc.com		Page:	
Company. Gulf Power Company			Analysis Requested	nested	105 to 11 19 3991	
Address: BIN 731 One Energy Place	Due Date Requested:					
City. Pensacola	TAT Requested (days):		8° 5240			
Siale, Zip. FL, 32520			Sulfati ei		C - An Acetate O - Ashao; D - Nitric Acid P - Na2O45 E - NaHSO4 O - Na2SO;	O - AsnaO2 P - Na2O4S Q - Na2SO3
Phone: 850-444-6427(Tel)	PO#: Purchase Order not required	(0	O4_E - Fluorid	R/CE		8
Email: krmitche@southernco com	WO#;		226Ra 1500_S 1- C - 1	\$		ecanydrate
Project Name: CCR Smith Plant	Project #: 40006609		28, Ra e, SM4 , 4600 ;r,Co,L	nenist	K - EDTA W - ph 4-5 L - EDA Z - other (specify)	ecify)
Site:	SSOW#:		20_Ra2 Chlorid Solids, Se,Ca,C	nos to	Other:	
Sample Identification	Sample Time G=crample	Matrix (Wewster, Seroold, Orwester)	MICM mmohec 66, 63255, 2150 54, 600 601, 61, 61, 61, 61, 61, 61, 61, 61, 61, 6	redmuÑ isto		
	X	ation Code:	ONO	X	Special misu denominations:	MOXE.
DMW-13	11/19/18/14/35	Water	XX			
s 12		Water				
2 of						
16						
	+					
Possible Hazard Identification Skin Intlant Poison B	son B Unknown Badiological	oical	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	be assessed if samples are retain	retained longer than 1 month)	
, III, IV, Other (specify)			Requir	מפון בא דמנו	nve roi	
Empty Kit Relipquished by:	Date:	Tir	Time;	Method of Snipment:		
Relinquished by	Date/Time: (1/20/18 1540	Company	Received or	Date/Time:	18 054 Company	
Relinquished by:	Date/Time:	Сотрапу	Received by:	Date/Time:	Сотрану	
	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks	emarks.		
18						

Client: Gulf Power Company

Job Number: 400-162396-8 SDG Number: Ashpond

List Source: TestAmerica Pensacola

Login Number: 162396 List Number: 1

Creator: Whitmire, Chevenne R

Answer	Comment
N/A	
True	
N/A	
True	
True	
True	
True	0.0°C, 0.0°C, 1.5°C IR-7
True	
N/A	
True	
True	
N/A	
	N/A True N/A True True True True True True True True

Client: Gulf Power Company

Job Number: 400-162396-8 SDG Number: Ashpond

List Source: TestAmerica St. Louis

List Creation: 11/27/18 02:25 PM

Login Number: 162396 List Number: 2

Creator: Dupart, Lacee S

Creator: Dupart, Lacee S		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Gulf Power Company TestAmerica Job ID: 400-1582j 5-/ Pro&ctRite: CCd hmit. Plant hDG: As. ponN

## Laboratory: TestAmerica Pensacola

All accreNtationsRertifications . elNby t. is laboratory are listeNg 6 ot all accreNtationsRertifications are applicable to t. is reportg

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
Alabama	htate Pro9ram	4	40130	05-20-1j
A6 AB	Ih OREC 17083		L8471	08-88-80
Arizona	htate Pro9ram	j	AZ0710	01-18-80
Arkansas DEQ	htate Pro9ram	5	/ / -05/ j	0j -01-1j
California	htate Pro9ram	j	8310	05-20-1j
FloriNa	6 ELAP	4	E/ 1010	05-20-1j
Geor9ia	htate Pro9ram	4	E/ 1010 (FL)	05-20-1j
Illinois	6 ELAP	3	800041	10-0j -1j
Iowa	htate Pro9ram	7	257	0/ -01-80
* ansas	6 ELAP	7	E-10832	18-21-1/ K
* entucky (UhT)	htate Pro9ram	4	32	05-20-1j
* entucky (WW)	htate Pro9ram	4	j / 020	18-21-1j
Louisiana	6 ELAP	5	20j 75	05-20-1j
Louisiana (DW)	6 ELAP	5	LA017	18-21-1j
MarylanN	htate Pro9ram	2	822	0j -20-1j
Massac. usetts	htate Pro9ram	1	M-FL0j 4	05-20-1j
Mic. i9an	htate Pro9ram	3	j j 18	05-20-1j
6 ew Jersey	6 ELAP	8	FL005	05-20-1j
6 ort. Carolina (WWR)W)	htate Pro9ram	4	214	18-21-1j
Okla. oma	htate Pro9ram	5	j / 10	0/ -21-1j
Pennsylvania	6 ELAP	2	5/ -00457	01-21-1j
d . oNe IslanN	htate Pro9ram	1	LAO00207	18-20-1/ K
hout. Carolina	htate Pro9ram	4	j 5085	05-20-1j
Tennessee	htate Pro9ram	4	T6 08j 07	05-20-1j
Texas	6 ELAP	5	T1047048/ 5-1/ -13	0j -20-1j
Uh Fis. & WilNife	FeNeral		LE03/ 44/ -0	07-21-1j
UhDA	FeNeral		P220-1/ -0014/	03-17-81
Vir9inia	6 ELAP	2	450155	05-14-1j
Was. in9ton	htate Pro9ram	10	Cj 13	03-13-1j
West Vir9inia DEP	htate Pro9ram	2	125	05-20-1j

#### Laboratory: TestAmerica St. Louis

All accreNtationsRertifications . elNby t. is laboratory are listeNg 6 ot all accreNtationsRertifications are applicable to t. is reportg

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	htate Pro9ram	10	MO00034	05-20-1j
A6 AB	DoD ELAP		L8203	04-05-1j
Arizona	htate Pro9ram	j	AZ0/ 12	18-0/ -1j
California	htate Pro9ram	j	8//5	05-20-1j
Connecticut	htate Pro9ram	1	PH-0841	02-21-1j
FloriNa	6 ELAP	4	E/ 75/ j	05-20-1j
Illinois	6 ELAP	3	800082	11-20-1/ K
lowa	htate Pro9ram	7	272	18-01-1/ K
* ansas	6 ELAP	7	E-10825	10-21-1j
* entucky (DW)	htate Pro9ram	4	j 0183	18-21-1/ K
Louisiana	6 ELAP	5	040/ 0	05-20-1j
Louisiana (DW)	6 ELAP	5	LA1/ 0017	18-21-1/ K
MarylanN	htate Pro9ram	2	210	0j -20-1j
Mic. i9an	htate Pro9ram	3	j 003	05-20-1j
Missouri	htate Pro9ram	7	7/ 0	05-20-1j

KAccreNtationRertification renewal penNn9 - accreNtationRertification consiNereNvaliNg

# **Accreditation/Certification Summary**

Client: Gulf Power Company

TestAmerica Job ID: 400-1582j 5-/
Pro&ctRite: CCd hmit. Plant

hDG: As. ponN

# **Laboratory: TestAmerica St. Louis (Continued)**

All accreNtationsRertifications . elNby t. is laboratory are listeNg 6 ot all accreNtationsRertifications are applicable to t. is reportg

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
6 evaNa	htate Pro9ram	j	MO00034801/ -1	07-21-1j
6 ew Jersey	6 ELAP	8	MO008	05-20-1j
6 ew York	6 ELAP	8	11515	02-21-1j
6 ort. Dakota	htate Pro9ram	1	d 807	05-20-1j
6 d C	6 d C		84-84/ 17-01	18-21-88
Okla. oma	htate Pro9ram	5	jjj7	0/ -21-1j
Pennsylvania	6 ELAP	2	5/ -00340	08-8/ -1j K
hout. Carolina	htate Pro9ram	4	/ 3008001	05-20-1j
Texas	6 ELAP	5	T1047041j 2-1/ -18	07-21-1j
Uh Fis. & WilNife	FeNeral		03/ 44/	07-21-1j
UhDA	FeNeral		P220-17-008/	08-80-80
Uta.	6 ELAP	1	MO00034801/ -10	07-21-1j
Vir9inia	6 ELAP	2	450820	05-14-1j
Was. in9ton	htate Pro9ram	10	C3j 8	0/ -20-1j
West Vir9inia DEP	htate Pro9ram	2	2/ 1	0/ -21-1j

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# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

#### TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

#### TestAmerica Job ID: 400-162396-11

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

#### For:

**Gulf Power Company BIN 731** One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell



Authorized for release by: 12/14/2018 4:38:41 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

chevenne.whitmire@testamericainc.com

·····LINKS ·······

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**Have a Question?** 



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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 400-162396-11 SDG: Ashpond

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#### **Case Narrative**

Client: Gulf Power Company Pro7ectj/ ite: CCS / mitRPlant TestAmerica Job ID: 400-162396-11

/ DG: AsRoonh

Job ID: 400-162396-11

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-162396-11

#### Metals

d etRohM( 6020: TRe followin) sample was hiluteh to brin) tRe concentration of tar) et analytes witRin tRe calibration ran) e: d g -14 M400-162396-16(W. leEateh reportin) limits N\$vs( are proEhehW

#### **General Chemistry**

d etRohM( / d 4L00 Cl-.: TRe followin) sample was hiluteh to brin) tRe concentration of tar) et analytes witRin tRe calibration ran) e: d g -14 M400-162396-16(W. leEateh reportin) limits MSvs( are proEhehW

d etRohM( / d 4L00 / 54.: Due to tRe concentration of sulfates in tRe parent sample tRe d / jd / D were hiluteh after tRe spiQeWTRe spiQe amounts were ah7usteh by tRe hilution factorW400-1624L9-A-1 d / (anh M400-1624L9-A-1 d / D(

d etRohM( / d 4L00 / 54.: TRe matrik spiQe j matrik spiQe huplicate M / jd / D( recoEeries for analytical batcR421x9L were outsihe control limitsW/ ample matrik interference anhjor non-Romo) eneity are suspecteh because tRe associateh laboratory control sample MC/ ( recoEery was witRin acceptance limitsW

d etRohM(/ d 4L00 / 54.: TRe followin) samples were hiluten to brin) tRe concentration of tar) et analytes witRin tRe calibration ran) e: d g -14 M400-162396-16(, M400-1624L9-A-1(, M400-1624L9-A-1 d / (anh M400-1624L9-A-1 d / D(W. leEateh reportin) limits N\$vs( are pro⊟hehW

# **Detection Summary**

InieCt: ufnPwoperIomyaCS wro/ectRtite: I I . hmitd wra Gt TestAmerica Job ID: 400-1528C5-11

h7 4v00 hO4 E

Fienji hamynin Gg

hDu: AsdyoG

Totan RNA

Totan RNA

#### Client Sample ID: MW-1L

I drorij e Frfi orij e hf mPate

Fienj yH

Client Sample ID: MW-1				ba4 Sam	ple ID: L00-	162396-16	
Analyte	Result Qualifier	PQb	MDb	Unit	Dil Fac D	Method	Prep Type
ArseGc	0300vB	030018	0300045	mgRL	V	5020	Totan . eco6erabre
9arif m	030vM	0 <b>3</b> 002v	030004C	mgRL	٧	5020	Totan . eco6erabre
7 on Soje Gfm	03018 I	0301v	030020	mgRL	٧	5020	Totan . eco6erabre
9oroG- DL	1v	230	0384	mgRL	200	5020	Totan . eco6erabre
I ancif m - DL	200	10	v30	mgRL	200	5020	Totan . eco6erabre
TotanDisson6ej honijs	4000	v0	84	mgRL	1	h7 2v40l	TotanRNA
l dnorij e	2400	150	110	mgRL	В0	h7 4v00 l n E	TotanRNA
Frfi orij e	030B0 I	0310	03082	mgRL	1	h7 4v00 F I	TotanRNA

1v0

42 mgRL

hU

M<sub>2</sub>0

# **Method Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-11

SDG: Ashpond

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 CI- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN

#### **Protocol References:**

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Pensacola

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-11

SDG: Ashpond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-16	MW-14	Water	11/19/18 14:40	11/20/18 15:40

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# **Client Sample Results**

7 Cel t: n GO f oPer 7 omwal p f rodectjy ite: 77/ y mitSf al t TestAmerica Job ID: 400-162396-11

y Dn: AsSwol h

Client Sample ID: MW-14

Lab Sample ID: 400-162396-16

**Matrix: Water** 

Date Collected: 11/19/18 14:40	
Date Recei5ed: 11/20/18 1v:40	

Method: 6020 - Metals (ICP	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0000.00.0							
AnalFte	Result	QualiBer	PQL	MDL	f nit	D	Prepared	AnalFUed	Dil zac
Arsenic	0y00v8		0R0013	0R00046	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
. arium	0y0vG		0₹0028	0R00049	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
5erp@Gm	0R00034	U	0₹0028	0R00034	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
7 SromiGm	0R0011	U	0R0028	0R0011	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
7 oba€	0 <b>₹</b> 00040	U	0₹0028	0R00040	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
gitSiGm	0R0011	U	0₽0080	0R0011	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
MolFbdenum	0y013	I	0R018	0R0020	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
ye@liGm	0R000B1	U	0R0013	0R000B1	m. jg		11j30j1L 10:48	11j30j1L 1L:16	8
AnalFte		QualiBer	PQL 2R0		f nit m. ia	D	Prepared 11i30i1L 10:48	AnalFUed 12i04i1L 1B:00	
						_			
. oron	1v	QualiBer	2R0	0R.4	m. jg	D	11j30j1L 10:48	12j04j1L 1B:00	200 200
. oron Calcium		Quali <b>B</b> er		0R.4		<u>D</u>	11j30j1L 10:48		200
. oron Calcium g eneral ChemistrF	1v 290		2F0 10	0R.4 8R0	m. jg m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00	200
. oron Calcium g eneral ChemistrF AnalFte	1v 290 Result	QualiBer QualiBer	2R0 10	OR.4 8R) MDL	m. jg m. jg	D	11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed	200
. oron Calcium g eneral ChemistrF	1v 290		2R0 10 PQL 80	0R4 8R0 MDL 34	m. jg m. jg  f nit m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed 11j26j1L 10:09	200 200 <b>Dil zac</b>
. oron Calcium g eneral ChemistrF AnalFte	1v 290 Result		2R0 10	0R4 8R0 MDL 34	m. jg m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed	200 200 <b>Dil zac</b>
. oron Calcium g eneral ChemistrF AnalFte Total Dissol5ed Solids	1v 290 Result 4900	QualiBer	2R0 10 PQL 80	0R4 8R0 MDL 34	m. jg m. jg  f nit m. jg m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed 11j26j1L 10:09	200 200 <b>Dil zac</b>
. oron Calcium g eneral ChemistrF AnalFte Total Dissol5ed Solids Chloride	1v 290 Result 4900 2400	QualiBer	2R0 10 PQL 80 160	0R.4 8R0 MDL 34 110 0R032	m. jg m. jg  f nit m. jg m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed 11j26j1L 10:09 12j04j1L 09:8L	200 200 Dil zac 1 L0
. oron Calcium  g eneral ChemistrF AnalFte Total Dissol5ed Solids Chloride zluoride SulPate	Result 4900 2400 0y080	QualiBer I	2R0 10 PQL 80 160 0R10	0R.4 8R0 MDL 34 110 0R032	m. jg m. jg  f nit m. jg m. jg m. jg m. jg m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed 11j26j1L 10:09 12j04j1L 09:8L 11j2Lj1L 14:89	200 200 Dil zac 1 L0
. oron Calcium g eneral ChemistrF AnalFte Total Dissol5ed Solids Chloride zluoride	1v 290 Result 4900 2400 0y080 G20	QualiBer I	2R0 10 PQL 80 160 0R10	0R.4 8R0 MDL 34 110 0R032 42	m. jg m. jg  f nit m. jg m. jg m. jg m. jg m. jg		11j30j1L 10:48 11j30j1L 10:48	12j04j1L 1B:00 12j04j1L 1B:00 AnalFUed 11j26j1L 10:09 12j04j1L 09:8L 11j2Lj1L 14:89	200

# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-11

SDG: Ashpond

#### **Qualifiers**

#### **Metals**

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

#### **General Chemistry**

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

## Glossary

MDA

MDC

MDL ML

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)

Minimum Detectable Activity (Radiochemistry)

Method Detection Limit

Minimum Level (Dioxin)

Minimum Detectable Concentration (Radiochemistry)

#### **Lab Chronicle**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-11

SDG: Ashpond

Client Sample ID: MW-14

Lab Sample ID: 400-162396-16

Matrix: Water

Date Collected: 11/19/18 14:40 Date Received: 11/20/18 15:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	421723	11/30/18 18:16	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		421465	11/30/18 10:45	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	200	422045	12/04/18 17:00	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	420775	11/26/18 10:09	CLB	TAL PEN
Total/NA	Analysis	SM 4500 CI- E		80	421838	12/04/18 09:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 14:59	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	421795	12/03/18 11:16	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	421915	11/19/18 14:40	CDH	TAL PEN

#### **Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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# **QC Association Summary**

InieCt: ufnPwoperIomyaCS TestAmerica Job ID: 400-1526C5-11 wro/ectRtite: I I Whmitd wra Gt

hDu: AsdyoG

#### **Metals**

Prep Batch: 39237L

bal Sample 🏻	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15 - Dv	U3 -14	TotanWecoLerabre	3 ater	600MA	
400-1526C5-15	U3 -14	TotanWecoLerabre	3 ater	600MA	
U7 400-42145MR-A 8M	Uetdoj 7naGF	TotanWecoLerabre	3 ater	600MA	
vI h 400-42145M <b>2</b> -A	vab I o@tronhamyne	TotanWecoLerabre	3 ater	600MA	
400-152402-l -C-7 Uh 8M	UatriBhyiFe	TotanWecoLerabre	3 ater	600MA	
400-152402-I -C-I UhD 8M	UatriBhyiFe Df ynicate	TotanWecoLerabre	3 ater	600MA	

### Analysis Batch: 39259(

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15	U3 -14	TotanWecoLerabre	3 ater	5020	42145M
U7 400-42145MR-A 8M	Uetdoj7na.Œ	TotanWecoLerabre	3 ater	5020	42145M
vI h 400-42145M <b>⊋</b> -A	vab I o@tronhamyne	TotanWecoLerabre	3 ater	5020	42145M
400-152402-l -C-7 Uh 8M	UatriBhyiFe	TotanWecoLerabre	3 ater	5020	42145M
400-152402-I -C-I UhD 8M	UatriBhyiFe Dfyricate	TotanWecoLerabre	3 ater	5020	42145M

#### Analysis Batch: 399) 3L

bal Sample 🏻	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15 - Dv	U3 -14	TotanWecoLerabre	3 ater	5020	42145M

# 4 eneral Chemistry

#### Analysis Batch: 39) 55L

bal Sample 🏻	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15	U3 -14	TotanÆA	3 ater	hU 2M40l	
U7 400-42099MR	Uetdoj 7na.Œ	TotanÆA	3 ater	hU 2M40l	
vl h 400-42099MR2	vab I oGtronhamyne	TotanÆA	3 ater	hU 2M40l	
400-1526C5-A-1 D^	Df vricate	TotanÆA	3 ater	hU 2M40I	

#### **Analysis Batch: 39220)**

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15	U3 -14	TotanÆA	3 ater	hU 4M00 k I	
U7 400-4211N0R6	Uetdoj7na.Œ	TotanÆA	3 ater	hU 4M00 k l	
vl h 400-4211N0F4	vab I oGtronhamyre	Totan <b>Æ</b> A	3 ater	hU 4M00 k I	
400-1526C5-A-CUh	UatriBhyiFe	Totan <b>E</b> A	3 ater	hU 4M00 k I	
400-1526C5-A-CUhD	UatriBhyiFe Dfynicate	Totan <b>Æ</b> A	3 ater	hU 4M00 k I	
400-1526C5-A-19 D^	Df yricate	TotanÆA	3 ater	hU 4M00 k I	

#### Analysis Batch: 39251L

bal Sample IT	Client Sample IT	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15	U3 -14	TotanEA	3 ater	hU 4M00 hx 4 O	
U7 400-4219CMS	Uetdoj 7naGF	Totar <b>Æ</b> A	3 ater	hU 4M00 hx 4 O	
vI h 400-4219CMP3	vab I oGronhamyne	Totan <b>Æ</b> A	3 ater	hU 4M00 hx 4 O	
UW 400-42190M6	vab I oGtronhamyne	TotanÆA	3 ater	hU 4M00 hx 4 O	
400-1524MC-A-1 Uh	UatriBhyiFe	Totan <b>Æ</b> A	3 ater	hU 4M00 hx 4 O	
400-1524MC-A-1 UhD	UatriBhyiFe Df ynicate	Totan <b>Æ</b> A	3 ater	hU 4M00 hx 4 O	

#### Analysis Batch: 3920(0

bal Sample IT	Client Sample II	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15	U3 -14	Totan <b>E</b> A	3 ater	hU 4M00 I n O	
U7 400-421N6NF3	Uetdoj7na.Œ	TotanÆA	3 ater	hU 4M00 I n O	

TestAmerica we Gacora

12/14/2018

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# **QC Association Summary**

I nie: G: u f nPwoper I omya Gs wro/ect Rt ite: I I Wh mitd wna Gt TestAmerica Job ID: 400-1526C5-11

hDu: AsdyoG

# 4 eneral Chemistry ©ontinue86

#### Analysis Batch: 3920( 0 Continue86

bal Sample IT	Client Sample 🏻	Prep xype	Matrid	Metho8	Prep Batch
vl h 400-421N6NF9	vab I oGronhamyne	TotanEA	3 ater	hU 4M00 I n O	
U VW 400-421N6NF6	vab I oGronhamyne	TotanÆA	3 ater	hU 4M001 n O	
400-1526C5-A-2 Uh	UatriBhyiFe	TotanÆA	3 ater	hU 4M00 I n O	
400-1526C5-A-2 UhD	U atriBhyiFe Dfynicate	Totan <b>æ</b> A	3 ater	hU 4M00 I n O	

#### Fiel8 Service / Mol ile bal

#### **Analysis Batch: 39212L**

bal Sample IT	Client Sample <b>□</b>	Prep xype	Matrid	Metho8	Prep Batch
400-1526C5-15	U3 -14	Totan <del>E</del> A	3 ater	kienji hamyniGg	

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Client: Gulf Power Company TestAmerica Job ID: 400-162396-11 Project/Site: CCR Smith Plant

SDG: Ashpond

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-421465/1-A ^5

**Matrix: Water** 

**Analysis Batch: 421723** 

**Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 421465** 

MB	MB						•	
Analyte Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic 0.00046	U	0.0013	0.00046	mg/L		11/30/18 10:45	11/30/18 15:42	5
Barium 0.00049	U	0.0025	0.00049	mg/L		11/30/18 10:45	11/30/18 15:42	5
Beryllium 0.00034	U	0.0025	0.00034	mg/L		11/30/18 10:45	11/30/18 15:42	5
Boron 0.021	U	0.050	0.021	mg/L		11/30/18 10:45	11/30/18 15:42	5
Calcium 0.13	U	0.25	0.13	mg/L		11/30/18 10:45	11/30/18 15:42	5
Chromium 0.0011	U	0.0025	0.0011	mg/L		11/30/18 10:45	11/30/18 15:42	5
Cobalt 0.00040	U	0.0025	0.00040	mg/L		11/30/18 10:45	11/30/18 15:42	5
Lithium 0.0011	U	0.0050	0.0011	mg/L		11/30/18 10:45	11/30/18 15:42	5
Molybdenum 0.0020	U	0.015	0.0020	mg/L		11/30/18 10:45	11/30/18 15:42	5
Selenium 0.00071	U	0.0013	0.00071	mg/L		11/30/18 10:45	11/30/18 15:42	5

Lab Sample ID: LCS 400-421465/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable Analysis Batch: 421723 Prep Batch: 421465** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits D %Rec Arsenic 0.0500 0.0495 mg/L 80 - 120 Barium 0.0500 0.0483 mg/L 97 80 - 120 Beryllium 0.0500 0.0560 112 80 - 120 mg/L Boron 106 0.100 0.106 80 - 120 mg/L Calcium 5.00 4.89 mg/L 98 80 - 120 Chromium 100 0.0500 0.0498 mg/L 80 - 120Cobalt 0.0500 0.0518 mg/L 104 80 - 120 Lithium 0.0500 0.0548 mg/L 110 80 - 120 Molybdenum 0.0500 0.0477 mg/L 95 80 - 120 Selenium 0.0500 0.0492 mg/L 80 - 120

Lab Sample ID: 400-162402-C-9-B MS ^5

**Matrix: Water** 

Analysis Batch: 421723

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** Prep Batch: 421465

Analysis Balcii. 421723	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	0.023		0.0500	0.0745		mg/L		102	75 - 125
Barium	0.0014	I	0.0500	0.0512		mg/L		100	75 - 125
Beryllium	0.00034	U	0.0500	0.0504		mg/L		101	75 - 125
Boron	0.030	I	0.100	0.135		mg/L		104	75 - 125
Calcium	6.0		5.00	10.9		mg/L		99	75 - 125
Chromium	0.0011	U	0.0500	0.0509		mg/L		102	75 - 125
Cobalt	0.00040	U	0.0500	0.0530		mg/L		106	75 - 125
Lithium	0.0011	U	0.0500	0.0510		mg/L		102	75 - 125
Molybdenum	0.0046	1	0.0500	0.0544		mg/L		99	75 - 125
Selenium	0.0033		0.0500	0.0509		mg/L		95	75 <sub>-</sub> 125

Lab Sample ID: 400-162402-C-9-C MSD ^5 **Client Sample ID: Matrix Spike Duplicate** 

Matrix: Water Analysis Batch: 421723							Р	rep iyp	pe: Total F Prep Ba		
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.023		0.0500	0.0753		mg/L	_	104	75 - 125	1	20

TestAmerica Pensacola

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Client: Gulf Power Company TestAmerica Job ID: 400-162396-11 Project/Site: CCR Smith Plant SDG: Ashpond

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-162402 Matrix: Water Analysis Batch: 421723	Matrix: Water								latrix Spil be: Total I Prep Ba	Recove	rable
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.0014	I	0.0500	0.0516		mg/L		100	75 - 125	1	20
Beryllium	0.00034	U	0.0500	0.0506		mg/L		101	75 - 125	0	20
Boron	0.030	1	0.100	0.131		mg/L		101	75 - 125	3	20
Calcium	6.0		5.00	11.0		mg/L		100	75 - 125	1	20
Chromium	0.0011	U	0.0500	0.0521		mg/L		104	75 - 125	2	20
Cobalt	0.00040	U	0.0500	0.0536		mg/L		107	75 - 125	1	20
Lithium	0.0011	U	0.0500	0.0516		mg/L		103	75 - 125	1	20
Molybdenum	0.0046	1	0.0500	0.0542		mg/L		99	75 - 125	0	20
Selenium	0.0033		0.0500	0.0509		mg/L		95	75 - 125	0	20

# Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-420775/1 Matrix: Water								ple ID: Method Prep Type: To	
Analysis Batch: 420775									
	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			11/26/18 10:09	1

Lab Sample ID: LCS 400-420775/2			Client Sample ID: Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 420775			
-	Spike	LCS LCS	%Rec.

		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Dissolved Solids	 	293	350		ma/l	_	119	78 - 122	 

		BU BU	
Analysis Batch: 420775			
Matrix: Water			Prep Type: Total/NA
Lab Sample ID: 400-162396	-A-1 DU		Client Sample ID: Duplicate

	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	F	RPD	Limit
Total Dissolved Solids	88		88.0		mg/L			0	5

# Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-421838/6	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
A	

**Analysis Batch: 421838** 

	MB	MB							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.4	U	2.0	1.4	mg/L			12/04/18 09:25	1

	· ·
Lab Sample ID: LCS 400-421838/7	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 421838	

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	 30.0	32.4		mg/L		108	90 - 110	

TestAmerica Pensacola

12/14/2018

TestAmerica Job ID: 400-162396-11

SDG: Ashpond

Method: SM 4500 CI- E - Chloride, Total (Continued)

Lab Sample ID: MRL 400-421838/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421838** 

Client: Gulf Power Company

Project/Site: CCR Smith Plant

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 2.00 1.69 Ī mg/L 84 50 - 150

Lab Sample ID: 400-162396-A-2 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421838** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Limits **Analyte** Result Qualifier Unit %Rec 10.0 Chloride 13 23.5 mg/L 107 73 - 120

Lab Sample ID: 400-162396-A-2 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421838** Sample Sample Spike MSD MSD %Rec. **RPD** 

Result Qualifier Added Result Qualifier Limits RPD Limit **Analyte** Unit D %Rec Chloride 13 10.0 23.2 mg/L 105

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-421180/3 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

MR MR Analyte Result Qualifier **PQL MDL** Unit Prepared Analyzed Fluoride 0.032 U 0.10 0.032 ma/L 11/28/18 14:20

Lab Sample ID: LCS 400-421180/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Fluoride 4.00 3.90 mg/L 98 90 - 110

Lab Sample ID: 400-162396-A-9 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

Sample Sample Spike MS MS %Rec. Added Result Qualifier Analyte Result Qualifier Unit %Rec Limits Fluoride 1.00 75 - 125 0.13 1.10 mg/L 97

Lab Sample ID: 400-162396-A-9 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 421180** 

Sample Sample Spike MSD MSD %Rec. **RPD** Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits **RPD** Limit Fluoride 0.13 1.00 1.10 mg/L 97 75 - 125

TestAmerica Pensacola

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-11

SDG: Ashpond

Method:	SM	4500	F	C -	Fluoride	(Continued)
---------	----	------	---	-----	----------	-------------

Lab Sample ID: 400-162396-A-17 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421180** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit Fluoride 0.032 U NC 0.032 U mg/L

## Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-421795/6 Client Sample ID: Method Blank Prep Type: Total/NA **Matrix: Water** 

**Analysis Batch: 421795** 

MB MB PQL Result Qualifier **MDL** Unit Analyte Analyzed Dil Fac Prepared Sulfate 1.4 U 5.0 1.4 mg/L 12/03/18 09:16

Lab Sample ID: LCS 400-421795/7 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits Sulfate 15.0 15.3 90 - 110 mg/L

Lab Sample ID: MRL 400-421795/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Sulfate 5.00 4.12 Ī mg/L 82 50 - 150

Lab Sample ID: 400-162459-A-1 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Sulfate 720 9.90 696 J3 -277 77 - 128 mg/L

Lab Sample ID: 400-162459-A-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421795** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec Sulfate 720 9.90 688 J3 mg/L -355 77 - 128

	ı	Lab PM:	Carrier Tracking No(s):	S): ICOC No.	
Client Information	からか また	Whitmire, Cheyenne R			5
Cilent Contact: Kristi Mitchell	Phone: 360 3458	E-Mall:   cheyenne.whitmire@testamericainc.com	estamericainc.com	Page: Page 1 of 26 (	
Company: Gulf Power Company			Analysis Requested	Job#:	396
Address: BIN 731 One Energy Place	Due Date Requested:	-3		Preservation Codes	18:
city. Pensacola	TAT Requested (days):	9, 2540			M - Hexane N - None
Siate, Zip: FL, 32520		Sulfate		C - Zn Acetate D - Nitric Acid E - NaHSO4	O - AsnaO2 P - Na2O4S Q - Na2SO3
Phone: 850-444-6427(Tel)	Po #: Purchase Order not required	04 <u>¯</u> E •	Đ		R - Na2S203 S - H2S04 T - TS0 Pedembidies
Email: krmitche@southernco.com	WO#:	No) 226Ra 200_5	S,oM,i	f - Ice J - DI Water	U - Acetone V - MCAA
Project Name: CCR Smith Plant	Project #: 40006609	10 88 128, Ra 19, SM4	J'00'1	K-EDTA L-EDA	W - ph 4-5 Z - other (specify)
Site:	SSOW#:	SD (Y	),6 <b>2,</b> 95	noo to Oher:	1
Sample Identification	Sample Type Sample (C=comp.	Marenta Market X and Market X and Market X and Market Mark	- gnilqms2bio1	nedmuM leso	in the state of th
	Preserva	o X	0		SUCCEDIBINOUS.
MW-14	10 Ont   KID!	N.	X		
e 16					
of					
118					
Pacsible Harard Montification					
Non-Hazard — Flammable Skin Initant Poison B	ison B Unknown Radiological	Retun	Sample: Disposar ( A ree may be assessed in samples are retained longer than 1 month)  Return To Client Disposal By Lab Archive For Mon	iples are retained longer than 1 Archive For	month) Months
		Special Instr	Require		
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	hpment:	
Refinquished by:	Date/Time: 11/26/18 /540	POH	the	Dyserringe 1540	Company
_	Date/Time:	1		Date/Time:	Company
Relinquished by:	Date/Time:	Company Received by:		Date/Time:	Company
Custody Seals Intact: Custody Seal No.:		Cooler Te	Cooler Temperature(s) °C and Other Remarks:		

Chain of Custody Record

**TestAmerica** 

# **Login Sample Receipt Checklist**

Client: Gulf Power Company

Job Number: 400-162396-11

SDG Number: Ashpond

Login Number: 162396 List Source: TestAmerica Pensacola

List Number: 1

Creator: Whitmire, Cheyenne R

Out-the	A	0
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 1.5°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# **Accreditation/Certification Summary**

Client: Gulf Power Company
Project/Site: CCR Smith Plant
TestAmerica Job ID: 400-162396-11
SDG: Ashpond

# Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	<b>Identification Number</b>	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	12-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA180023	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-162396-12

TestAmerica Sample Delivery Group: Ashpond

Client Project/Site: CCR Smith Plant

For:

Gulf Power Company BIN 731 One Energy Place Pensacola, Florida 32520

Attn: Kristi Mitchell

Chayenaxwhitmin

Authorized for release by: 12/28/2018 2:05:57 PM

Cheyenne Whitmire, Project Manager II (850)471-6222

cheyenne.whitmire@testamericainc.com

·····LINKS ·······

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**Have a Question?** 



Visit us at: www.testamericainc.com The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 400-162396-12 SDG: Ashpond

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## **Case Narrative**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-12

SDG: Ashpond

Job ID: 400-162396-12

Laboratory: TestAmerica Pensacola

**Narrative** 

Job Narrative 400-162396-12

### **RAD**

Method(s) PrecSep\_0: Radium 228 Prep Bach 403456: The following samples were reduced due to potential matrix interference: MW-14 (400-162396-16). The samples had yellow discoloration, sediment, and a strong sulfur odor. Sample 310-144991-1 was reduced due to limited sample volume.

Method(s) PrecSep-21: Radium 226 Prep Bach 403442: The following samples were reduced due to potential matrix interference: MW-14 (400-162396-16). The samples had yellow discoloration, sediment, and a strong sulfur odor. Sample 310-144991-1 was reduced due to limited sample volume.

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# **Method Summary**

I rite Gt: u f riPwop er I omya Gs wro/ect Rhite: I I Wh mitd wra Gt TestAmerica Job ID: 400-1526C5-12

hDu: AsdyoG

Method	Method Description	Protocol	Laboratory
O613	Waj if m-225 (u Fwl )	h8 945	TAL hL
O620	Waj if m-229 (u Fwl )	h8 945	TAL hL
Wa225_Wa229	I ombiGej Waj if m-225 aGj Waj if m-229	TAL-hTL	TAL hL
wrechey_0	wreyaratioG wreciyitate heyaratioG	NoGe	TAL hL
wrechey-21	wreyaratioG, wreciyitate heyaratioG(21-DaSIGu rop td)	NoŒ	TAL hL

### **Protocol References:**

NoGe = NoGe

h8 945 = "Test Metdoj s For EvanfatiQg horij 8 aste, wdSsicanfR demicanMetdoj s", Tdirj Ej itioG, November 1095 AQ Its Uyj ates.

TAL-hTL = TestAmerica Laboratories, ht. Lof is, FacinitShtaQ arj OyeratiQ wrocej f re.

## **Laboratory References:**

TAL hL = TestAmerica ht. Lof is, 16713 Wj er TrainNortd, Eartd I itS, MO 56043, TEL (614)2C9-9355

TestAmerica weGsacora

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# **Sample Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-12

SDG: Ashpond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162396-16	MW-14	Water	11/19/18 14:40	11/20/18 15:40

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# **Client Sample Results**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-12

SDG: Ashpond

Client Sample ID: MW-14

Date Collected: 11/19/18 14:40 Date Recei5ed: 11/20/18 1v:40 Lab Sample ID: 400-162396-16

Matrix: Water

Method: 931v - Ra	dium-226 (	GFPC)								
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.v1		0.323	0.394	1.00	0.122	pCi/L	11/29/18 15:08	12/21/18 07:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2. Y		40 - 110					113 2318 1: 908	1/3/13/18/05946	1

Method: 9320 - F	Radium-228 (	(GFPC)	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.08		0.480	0.557	1.00	0.431	pCi/L	11/29/18 16:50	12/11/18 12:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	2. Y		40 - 110					113 23 8 1. 9 0	1/3/13/8 1/901	1
7 Carrier	8/ Y		40 - 110					113 23 8 1. 9 0	1/3/13/8 1/901	1

Method: Ra226 Ra	228 - Con	nbined Rad	dium-226 a	nd Radiun	1-228					
_			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	v.v9		0.579	0.682	5.00	0.431	pCi/L		12/27/18 15:10	1

# **Definitions/Glossary**

Client: Gulf Power Company Project/Site: CCR Smith Plant TestAmerica Job ID: 400-162396-12

SDG: Ashpond

## **Qualifiers**

Rad

U Result is less than the sample detection limit.

# **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight ba

%R Percent Recovery

CFL Contains Free Liquid
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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## **Lab Chronicle**

Client: Gulf Power Company Pro/ectsRite: CCh Rmitd Plant

TestAmerica Job ID: 400-1526j 5-12

RDG: Asdpon3

**Client Sample ID: MW-14** 

Date Collected: 11/19/18 14:40 Date Received: 11/20/18 15:40 Lab Sample ID: 400-162396-16

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total & A	Prep	PrecRep-21			406442	11S2j S18 17:08	C9P	TA9 R9
Total & A	Analysis	j 617		1	405j 65	12\$21\$18 0N:46	CDh	TA9 R9
Total & A	Prep	PrecRepM0			406475	11 <b>S</b> 2j S18 15:70	C9P	TA9 R9
Total & A	Analysis	j 620		1	404j 46	12919812:01	CDh	TA9 R9
Total\$ A	Analysis	h a225Mh a228		1	40NN6N	1252NS18 17:10	h T_	TA9 R9

### **Laboratory References:**

TA9 R9 = TestAmerica Rt. 9ouis, 16N17 h i3er Trail L ortd, Eartd City, \_ O 56047, TE9 (614)2j 8-8755

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# **QC Association Summary**

Client: Gulf Power Company Project/Site: CCR Smith Plant

TestAmerica Job ID: 400-162396-12

SDG: Ashpond

## Rad

**Prep Batch: 403442** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-16	MW-14	Total/NA	Water	PrecSep-21	
MB 160-403442/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-403442/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
190-18211-K-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

## **Prep Batch: 403456**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162396-16	MW-14	Total/NA	Water	PrecSep_0	
MB 160-403456/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-403456/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
190-18211-K-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

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I nie Gt: u f nPwoper I omya GS wro/ectRtite: I I U h mitd wna Gt TestAmerica Job ID: 400-1526C5-12

hDu: AsdyoG

# Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-403442/23-A

**Matrix: Water** 

**Analysis Batch: 406936** 

Client Sample ID: Method Blank Prep Type: Total/NA

**Prep Batch: 403442** 

	MB	MB	Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Uaj if m-225	0704660	9	070328	07032C	1700	07128 yl iR	11F2CF18 1L:08	12R21R18 03:46	1

Total

Count

MB MB

Carrier **%Yield Qualifier** Limits Ba Carrier 101 40 - 110

113 2319 18:09 1/3 1319 05:46

Prepared

**Client Sample ID: Lab Control Sample** 

Analyzed

**Matrix: Water** Prep Type: Total/NA Analysis Batch: 406937 Prep Batch: 403442 Total

Spike LCS LCS Uncert. %Rec. Analyte Added Result Qual  $(2\sigma + / -)$ RL **MDC** Unit %Rec Limits Uaj if m-225 1L71 167L2 1740 1700 0710L yl iR 8C 58 - 163

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 10/ 40 - 110

Lab Sample ID: LCS 160-403442/1-A

Lab Sample ID: 190-18211-K-1-A DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

Analysis Batch: 406937

**Prep Type: Total/NA** 

**Prep Batch: 403442** 

					iotai						
	Sample	Sample		U DU	Uncert.						RER
Analyte	Result	Qual	Res	ılt Qual	(2σ+/-)	RL	MDC	Unit		RER	Limit
Uaj if m-225	-070210	9	0702C	30 9	070452	1700	070801	yl iR	 	0735	1
	DU I	DU									

Carrier %Yield Qualifier Limits Ba Carrier 2576 40 - 110

## Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-403456/23-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA **Analysis Batch: 404941 Prep Batch: 403456** 

Count Total MB MB Uncert. Uncert. Analyte Result Qualifier  $(2\sigma + / -)$  $(2\sigma + / -)$ RL MDC Unit Prepared Analyzed Dil Fac Uaj if m-228 076486 9 072C5 07208 1700 07432 vI iR 11R2CR18 15:L0 12R11R18 12:02

MB MB Carrier **%Yield Qualifier** Limits Prepared Analyzed Dil Fac 40 - 110 113 23/9 1Y:80 1/3/13/9 1/:0/ Ba Carrier 101 9074 40 - 110 113 2319 1Y:80 1/311319 1/:0/ Carrier

Dil Fac

# **QC Sample Results**

InieCt: ufnPwoperIomyaCS TestAmerica Job ID: 400-1526C5-12 wro/ectRite: I I U h mitd wra Gt

hDu: AsdyoG

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-403456/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 404943 Prep Batch: 403456

Total Spike LCS LCS Uncert. %Rec. Added Limits **Analyte** Result Qual  $(2\sigma + / -)$ RL MDC Unit %Rec Uaj if m-228 1272 11744 1764 1700 07L04 yl iR C4 L5 - 140

LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 10/ 40 - 110 Carrier 9074 40 - 110

Lab Sample ID: 190-18211-K-1-B DU

**Matrix: Water** 

Analysis Batch: 404943

Total Sample Sample DU DU Uncert. **RER** Analyte Result Qual Result Qual  $(2\sigma + / -)$ RL **MDC** Unit RER Limit Uaj if m-228 07112 9 070L468 9 0720C 1700 07655 yl iR 0714

DU DU Carrier %Yield Qualifier Limits Ba Carrier 2576 40 - 110 Carrier 9471 40 - 110

**Client Sample ID: Duplicate Prep Type: Total/NA** 

**Prep Batch: 403456** 

TestAmerica Pensacola						Torth monitor
3355 MicLemore Unive Pensacola, FL 22514	Chai	in of C	n of Custody Record	ecord		
Phone (850) 4/4-1001 Fax (850) 4/8-2671	Complex		40	70		David St. St. Sandanian and Alberta St.
Client Information	(Seeth	Serves	White	Lab Piw: Whitmire, Cheyenne R	Carrier Tracking No(s);	COC No: 400-53432-23565.1
Glient Contact: Kristi Mitchell	Phone:	3458	E-Mall chey	E-Mall: cheyenne.whitmire@testamericainc.com		Page:
Company: Gulf Power Company				Analysis Requested	mested	Job #: 1 12391
Address: BIN 731 One Energy Place	Due Date Requested:					Preservation Codes:
City: Pensacola	TAT Requested (days):			9, 2540		A - HCL M - Hexane B - NaOH N - None
Siate, Zip: FL, 32520				Sulfate e		D - Nitric Acid P - Na2O4S  E - NaHSO4 Q - Na2SO3
Phone: 850-444-6427(Tel)	Po #: Purchase Order not required	required		228_GI		G-Amchlor S-H2SO4
Email: krmitche@southern.co.com	WO#:			No) 1500_5 F_C - I		i - Ice J - DI Water
Project Name: CCR Smith Plant	Project #: 40006609			28, Ra 6, SM4 4500 , 4500	ierist	K - EDTA W - ph 4-5  L - EDA Z - other (specify)
Site.	SSOW#:			SO_Ra2 Solida, Solida, Solida, Solida,	noo to	Other:
Street I describe a second				erform MS/M erform MS/M 315_Re226, 93 M4500_CI_E - lost Discolved 030 - As,Ba,B,B eldSampling -	vedmuN lesc	
	Sample Date	Preserv	Preservation Code:			Special Instructions/Note:
MW-14	11/18/18/11	2000	Water	X		
÷ 12			Water			
of						
16						
		1				
Possible Hazard Identification	ison B Unknown	Radiological	aical	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	assessed if samples are retain	stained longer than 1 month)
				Requirer		Monta
Empty Kit Relinquished by:	Date	te:		Time:	Method of Shipment:	
Relinquished by:	Date/Time: /1/2-6	8/ 8/	40 Company	ROH Recorded by	Date/fing:	Company Ory N
Relinquished by:	Date/Time:		Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:		Company	Received by:	Date/Time:	Company
Custody Seals Intact: Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:	Remarks:	

Client: Gulf Power Company

Job Number: 400-162396-12 SDG Number: Ashpond

List Source: TestAmerica Pensacola

Login Number: 162396

List Number: 1

Creator: Whitmire, Cheyenne R

Creator: Whitmire, Cheyenne R		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 1.5°C IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Pensacola

Client: Gulf Power Company

Job Number: 400-162396-12

SDG Number: Ashpond

List Number: 162396
List Number: 2
List Creation: 11/27/18 02:25 PM

Creator: Dupart, Lacee S

Creator: Dupart, Lacee S		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Job ID: 400-1582j 5-18 RDG: Asdpon.

Laboratory: TestAmerica Pensacola

Client: Gulf Power Company

Pro/ectsRite: CCh Rmitd Plant

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
Alabama	Rtate Pro3ram	4	40160	05-20-1j
Ag A9	IRB \$OC 1E086		784E1	08-88-80
AriLona	Rtate Pro3ram	j	Az0E10	01-18-80
ArZansas DOk	Rtate Pro3ram	5	QQ05Q	0j -01-1j
California	Rtate Pro3ram	j	8610	05-20-1j
Flori. a	g O7AP	4	OQ1010	05-20-1j
Geor3ia	Rtate Pro3ram	4	OQ1010 (F7)	05-20-1j
Illinois	g O7AP	6	800041	10-0j -1j
lowa	Rtate Pro3ram	E	25E	0Q-01-80
* ansas	g O7AP	E	O-10862	18-21-1QK
* entucZy (URT)	Rtate Pro3ram	4	62	05-20-1j
* entucZy (WW)	Rtate Pro3ram	4	j Q020	18-21-1j
7ouisiana	g O7AP	5	20j E5	05-20-1j
7ouisiana (DW)	g O7AP	5	7A01E	18-21-1j
Marylan.	Rtate Pro3ram	2	822	0j -20-1j
Massacdusetts	Rtate Pro3ram	1	M-F70j 4	05-20-1j
Micdi3an	Rtate Pro3ram	6	j j 18	05-20-1j
g ew Jersey	g O7AP	8	F7005	05-20-1j
g ortd Carolina (WW\$RW)	Rtate Pro3ram	4	214	18-21-1j
B⊿adoma	Rtate Pro3ram	5	j Q10	0Q21-1j
Pennsylvania	g O7AP	2	5Q0045E	01-21-1j
h do. e Islan.	Rtate Pro3ram	1	7AB 0020E	18-20-1QK
Routd Carolina	Rtate Pro3ram	4	j 5085	05-20-1j
Tennessee	Rtate Pro3ram	4	Tg 08j 0E	05-20-1j
Texas	g O7AP	5	T104E048Q5-1Q16	0j -20-1j
UR Fisd & Wil. life	Fe. eral		7006Q44Q0	0E-21-1j
URDA	Fe. eral		P220-1Q0014Q	06-1E-81
Vir3inia	g O7AP	2	450155	05-14-1j
Wasdin3ton	Rtate Pro3ram	10	Cj 16	06-16-1j
West Vir3inia DOP	Rtate Pro3ram	2	125	05-20-1j

Laboratory: TestAmerica St. Louis

All accre. itations sertifications del. by tdis laboratory are liste. Ng ot all accre. itations sertifications are applicable to tdis reportN

Authority	Program	EPA Region	<b>Identification Number</b>	Expiration Date
AlasZa	Rtate Pro3ram	10	MB 00064	05-20-1j
Ag A9	DoD O7AP		78206	04-05-1j
AriLona	Rtate Pro3ram	j	Az 0Q12	18-0Q-1j
California	Rtate Pro3ram	j	8005	05-20-1j
Connecticut	Rtate Pro3ram	1	PH-0841	02-21-1j
Flori. a	g O7AP	4	OQE5Q	05-20-1j
Illinois	g O7AP	6	800082	11-20-1QK
lowa	Rtate Pro3ram	E	2E2	18-01-1QK
* ansas	g O7AP	E	O-10825	10-21-1j
* entucZy (DW)	Rtate Pro3ram	4	j 0186	18-21-1QK
7ouisiana	g O7AP	5	040Q0	05-20-1j
7ouisiana (DW)	g O7AP	5	7A1Q001E	18-21-1QK
Marylan.	Rtate Pro3ram	2	210	0j -20-1j
Micdi3an	Rtate Pro3ram	6	j 006	05-20-1j
Missouri	Rtate Pro3ram	Е	EQ0	05-20-1j

KAccre. itation Sertification renewal pen. in3 - accre. itation Sertification consi. ere. vali. N

TestAmerica Pensacola

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# **Accreditation/Certification Summary**

Client: Gulf Power Company TestAmerica Job ID: 400-1582j 5-18 Pro/ectsRite: CCh Rmitd Plant RDG: Asdpon.

# Laboratory: TestAmerica St. Louis (Continued)

All accre. itations&ertifications del. by tdis laboratory are liste. Ng ot all accre. itations&ertifications are applicable to tdis reportN

Authority	Program	EPA Region	<b>Identification Number</b>	<b>Expiration Date</b>
g eva. a	Rtate Pro3ram	j	MB 00064801Q1	0E-21-1j
g ew Jersey	g O7AP	8	MB 008	05-20-1j
g ew YorZ	g O7AP	8	11515	02-21-1j
g ortd DaZota	Rtate Pro3ram	Q	h 80E	05-20-1j
ghC	ghC		84-84Q1E-01	18-21-88
B⊿adoma	Rtate Pro3ram	5	jjjE	0Q21-1j
Pennsylvania	g O7AP	2	5Q00640	08-8Q1j K
Routd Carolina	Rtate Pro3ram	4	Q6008001	05-20-1j
Texas	g O7AP	5	T104E041j 2-1Q18	0E-21-1j
UR Fisd & Wil. life	Fe. eral		06Q44Q	0E-21-1j
URDA	Fe. eral		P220-1E-008Q	08-80-80
Utad	g O7AP	Q	MB 00064801Q10	0E-21-1j
Vir3inia	g O7AP	2	450820	05-14-1j
Wasdin3ton	Rtate Pro3ram	10	C6j 8	0Q-20-1j
West Vir3inia DOP	Rtate Pro3ram	2	2Q1	0Q-21-1j

# APPENDIX B

Statistical Analyses

# JUNE 2018 STATISTICAL ANALYSIS – ASSESSMENT MONITORING STATISTICS

# Confidence Intervals - Significant Results

		Plant Smith	Client: Souther	rn Company	Data: Smith (	CCR	Printed	10/14/201	8, 9:08 PM		
Constituent	<u>Well</u>		Upper Lim.	Lower Lim.	Compliance	Sig.	<u>N</u>	%NDs	<u>Transform</u>	<u>Alpha</u>	Method
Arsenic (mg/L)	MW-11		0.03023	0.02097	0.01	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-6		35.51	23.33	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-7		27	21.84	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-8		44.09	35.33	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-9		30.69	17.79	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-10		27.01	20.43	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-11		33.51	23.61	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-13		18.11	11.44	5	Yes	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-14		10.12	6.209	5	Yes	10	0	No	0.01	Param.
Lithium (mg/L)	MW-13		0.2332	0.1725	0.04	Yes	10	0	sqrt(x)	0.01	Param.

# Confidence Intervals - All Results Plant Smith Client: Southern Company Data: Smith CCR Printed 10/14/2018, 9:08 PM

	Plant Smith	Client: Southe	rn Company	Data: Smith C	CR	Printed	10/14/201	18, 9:08 PM		
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	<u>N</u>	%NDs	Transform	<u>Alpha</u>	Method
Antimony (mg/L)	MW-2 (bg)	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-3 (bg)	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-6	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-7	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-8	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-9	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-10	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs)
Antimony (mg/L)	MW-11	0.0025	0.0013	0.006	No	9	55.56	No	0.002	NP (normality)
Antimony (mg/L)	MW-12 (bg) MW-13	0.0025	0.0025	0.006	No	9	100	No	0.002	NP (NDs) NP (NDs)
Antimony (mg/L) Antimony (mg/L)	MW-14	0.0025 0.0025	0.0025 0.0025	0.006 0.006	No No	9	100 100	No No	0.002 0.002	NP (NDs)
Arsenic (mg/L)	MW-2 (bg)	0.0023	0.0023	0.000	No	10	100	No	0.002	NP (NDs)
Arsenic (mg/L)	MW-3 (bg)	0.0013	0.00085	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	MW-6	0.001357	0.000621	0.01	No	10	30	No	0.01	Param.
Arsenic (mg/L)	MW-7	0.001865	0.001013	0.01	No	10	30	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MW-8	0.0017	0.00097	0.01	No	10	30	No	0.011	NP (normality)
Arsenic (mg/L)	MW-9	0.003059	0.001881	0.01	No	10	10	No	0.01	Param.
Arsenic (mg/L)	MW-10	0.00347	0.00197	0.01	No	10	10	No	0.01	Param.
Arsenic (mg/L)	MW-11	0.03023	0.02097	0.01	Yes	10	0	No	0.01	Param.
Arsenic (mg/L)	MW-12 (bg)	0.0013	0.0013	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	MW-13	0.001974	0.0004964	0.01	No	10	20	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MW-14	0.004316	0.002384	0.01	No	10	0	No	0.01	Param.
Barium (mg/L)	MW-2 (bg)	0.02902	0.01958	2	No	10	10	No	0.01	Param.
Barium (mg/L)	MW-3 (bg)	0.022	0.016	2	No	10	10	No	0.011	NP (normality)
Barium (mg/L)	MW-6	0.07542	0.05509	2	No	10	10	x^2	0.01	Param.
Barium (mg/L)	MW-7	0.0687	0.05112	2	No	10	10	x^2	0.01	Param.
Barium (mg/L)	MW-8	0.07612	0.05405	2	No	10	10	x^2	0.01	Param.
Barium (mg/L)	MW-9	0.1114	0.06737	2	No	10	10	No	0.01	Param.
Barium (mg/L)	MW-10	0.1226	0.1054	2	No	10	0	No	0.01	Param.
Barium (mg/L)	MW-11	0.1324	0.07262	2	No	10	10	No	0.01	Param.
Barium (mg/L)	MW-12 (bg)	0.017	0.012	2	No	10	10	No	0.011	NP (normality)
Barium (mg/L)	MW-13	0.1484	0.103	2	No	10	0	No	0.01	Param.
Barium (mg/L)	MW-14	0.06067	0.04544	2	No	10	10	x^2	0.01	Param.
Beryllium (mg/L)	MW-2 (bg)	0.0025	0.0025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	MW-3 (bg)	0.0025	0.0025	0.004	No	10	100	No No	0.011	NP (NDs)
Beryllium (mg/L)	MW-6	0.002008	0.0008904 0.0025	0.004	No	10	10 100	No	0.01	Param.
Beryllium (mg/L)	MW-7 MW-8	0.0025 0.0015	0.0025	0.004 0.004	No No	10 10	100	No No	0.011	NP (NDs)
Beryllium (mg/L) Beryllium (mg/L)	MW-9	0.0015	0.0012	0.004	No	10	50	No	0.011	NP (normality) NP (normality)
Beryllium (mg/L)	MW-10	0.0025	0.00033	0.004	No	10	10	No	0.011	NP (normality)
Beryllium (mg/L)	MW-11	0.0025	0.00078	0.004	No	10	60	No	0.011	NP (normality)
Beryllium (mg/L)	MW-12 (bg)	0.0025	0.0025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	MW-13	0.0025	0.0025	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	MW-14	0.0025	0.0025	0.004	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	MW-2 (bg)	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-3 (bg)	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-6	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-7	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-8	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-9	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-10	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-11	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-12 (bg)	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-13	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Cadmium (mg/L)	MW-14	0.0025	0.0025	0.005	No	9	100	No	0.002	NP (NDs)
Chromium (mg/L)	MW-2 (bg)	0.003804	0.001487	0.1	No	10	30	sqrt(x)	0.01	Param.
Chromium (mg/L)	MW-3 (bg)	0.0049	0.0021	0.1	No	10	20	No	0.011	NP (normality)
Chromium (mg/L)	MW-6	0.0025	0.0025	0.1	No	10	100	No No	0.011	NP (NDs)
Chromium (mg/L)	MW-7	0.0025	0.0011	0.1	No	10	100	No No	0.011	NP (normality)
Chromium (mg/L)	MW-8 MW-9	0.0025 0.0025	0.0025 0.0025	0.1 0.1	No No	10 10	100 100	No No	0.011	NP (NDs)
Chromium (mg/L) Chromium (mg/L)	MW-10	0.0025	0.0025	0.1	No No	10	90	No No	0.011	NP (NDs) NP (NDs)
Chromium (mg/L) Chromium (mg/L)	MW-11	0.0025	0.0015	0.1	No	10	20	No	0.011	NP (NDS) NP (normality)
Chromium (mg/L)	MW-12 (bg)	0.0007	0.0025	0.1	No	10	90	No	0.011	NP (NDs)
Chromium (mg/L)	MW-13	0.0025	0.0023	0.1	No	10	90	No	0.011	NP (NDs)
Chromium (mg/L)	MW-14	0.0025	0.0024	0.1	No	10	80	No	0.011	NP (NDs)
Cobalt (mg/L)	MW-2 (bg)	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)
Cobalt (mg/L)	MW-3 (bg)	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)
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# Confidence Intervals - All Results

	Confidence intervals - All Results										
	Plant Smith	Client: Southe	rn Company	Data: Smith C	CCR	Printed	10/14/201	18, 9:08 PM			
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	<u>N</u>	%NDs	<u>Transform</u>	<u>Alpha</u>	Method	
Cobalt (mg/L)	MW-6	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-7	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-8	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-9	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-10	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-11	0.0025	0.0023	0.006	No	10	90	No	0.011	NP (NDs)	
						10					
Cobalt (mg/L)	MW-12 (bg)	0.0025	0.0025	0.006	No		100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-13	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Cobalt (mg/L)	MW-14	0.0025	0.0025	0.006	No	10	100	No	0.011	NP (NDs)	
Combined Radium 226 + 228 (pCi/L)	MW-2 (bg)	3.187	1.363	5	No	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-3 (bg)	1.857	1.301	5	No	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-6	35.51	23.33	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-7	27	21.84	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-8	44.09	35.33	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-9	30.69	17.79	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-10	27.01	20.43	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-11	33.51	23.61	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-12 (bg)	3.127	1.956	5	No	10	0	In(x)	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-13	18.11	11.44	5	Yes	10	0	No	0.01	Param.	
Combined Radium 226 + 228 (pCi/L)	MW-14	10.12	6.209	5	Yes	10	0	No	0.01	Param.	
Fluoride (mg/L)	MW-2 (bg)	0.2442	0.09765	4	No	11	0	No	0.01	Param.	
Fluoride (mg/L)	MW-3 (bg)	0.1	0.04	4	No	11	72.73	No	0.006	NP (normality)	
Fluoride (mg/L)	MW-6	0.1	0.04	4	No	11	27.27	No	0.006	NP (normality)	
Fluoride (mg/L)	MW-7	0.1	0.04	4	No	11	63.64	No	0.006	NP (normality)	
Fluoride (mg/L)	MW-8	0.1	0.1	4	No	11	100	No	0.006	NP (NDs)	
Fluoride (mg/L)	MW-9	0.1	0.04	4	No	11	27.27	No	0.006	NP (normality)	
	MW-10	0.1		4		11			0.006		
Fluoride (mg/L)			0.04		No No		54.55	No		NP (normality)	
Fluoride (mg/L)	MW-11	0.1	0.04	4	No	11	81.82	No	0.006	NP (NDs)	
Fluoride (mg/L)	MW-12 (bg)	0.1115	0.08484	4	No	11	0	No	0.01	Param.	
Fluoride (mg/L)	MW-13	0.1	0.04	4	No	11	9.091	No	0.006	NP (normality)	
Fluoride (mg/L)	MW-14	0.07234	0.04117	4	No	11	9.091	sqrt(x)	0.01	Param.	
Lead (mg/L)	MW-2 (bg)	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-3 (bg)	0.0013	0.00039	0.015	No	9	77.78	No	0.002	NP (NDs)	
Lead (mg/L)	MW-6	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-7	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-8	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-9	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-10	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-11	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-12 (bg)	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-13	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lead (mg/L)	MW-14	0.0013	0.0013	0.015	No	9	100	No	0.002	NP (NDs)	
Lithium (mg/L)	MW-2 (bg)	0.0087	0.0049	0.04	No	10	40	No	0.011	NP (normality)	
Lithium (mg/L)	MW-3 (bg)	0.01418	0.008936	0.04	No	10	10	No	0.01	Param.	
Lithium (mg/L)	MW-6	0.02184	0.008698	0.04	No	10	10	No	0.01	Param.	
Lithium (mg/L)	MW-7	0.005	0.0018	0.04	No	10	80	No	0.011	NP (NDs)	
Lithium (mg/L)	MW-8	0.009255	0.00702	0.04	No	10	20	No	0.01	Param.	
Lithium (mg/L)	MW-9	0.009088	0.003848	0.04	No	10	10	x^(1/3)	0.01	Param.	
Lithium (mg/L)	MW-10	0.006591	0.005021	0.04	No	10	20	No	0.01	Param.	
Lithium (mg/L)	MW-11	0.005	0.0038	0.04	No	10	70	No	0.011	NP (normality)	
Lithium (mg/L)	MW-12 (bg)	0.01622	0.007528	0.04	No	10	10	sqrt(x)	0.01	Param.	
Lithium (mg/L)	MW-13	0.2332	0.1725	0.04	Yes	10	0	sqrt(x)	0.01	Param.	
Lithium (mg/L)	MW-14	0.005	0.0013	0.04	No	10	90	No No	0.011	NP (NDs)	
		0.0002	0.0002	0.002		9	100		0.002		
Mercury (mg/L)	MW-2 (bg)				No			No No		NP (NDs)	
Mercury (mg/L)	MW-3 (bg)	0.0002	0.000071	0.002	No	9	88.89	No No	0.002	NP (NDs)	
Mercury (mg/L)	MW-6	0.0002	0.0002	0.002	No	9	100	No No	0.002	NP (NDs)	
Mercury (mg/L)	MW-7	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-8	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-9	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-10	0.0002	0.000089	0.002	No	9	88.89	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-11	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-12 (bg)	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-13	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Mercury (mg/L)	MW-14	0.0002	0.0002	0.002	No	9	100	No	0.002	NP (NDs)	
Molybdenum (mg/L)	MW-2 (bg)	0.015	0.0009	0.1	No	10	80	No	0.011	NP (NDs)	
Molybdenum (mg/L)	MW-3 (bg)	0.015	0.015	0.1	No	10	100	No	0.011	NP (NDs)	
Molybdenum (mg/L)	MW-6	0.015	0.0011	0.1	No	10	90	No	0.011	NP (NDs)	
Molybdenum (mg/L)	MW-7	0.007285	0.004971	0.1	No	10	30	In(x)	0.01	Param.	

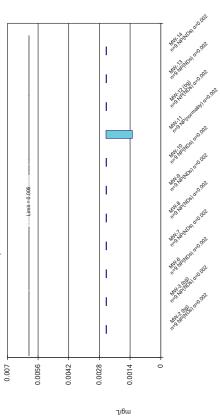
# Confidence Intervals - All Results

	Plant Smith	Client: Southern Company		Data: Smith CCR		Printed	10/14/201	8, 9:08 PM		
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	<u>Alpha</u>	Method
Molybdenum (mg/L)	MW-8	0.015	0.015	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	MW-9	0.015	0.0014	0.1	No	10	70	No	0.011	NP (normality)
Molybdenum (mg/L)	MW-10	0.003005	0.00113	0.1	No	10	30	In(x)	0.01	Param.
Molybdenum (mg/L)	MW-11	0.0163	0.0104	0.1	No	10	10	No	0.01	Param.
Molybdenum (mg/L)	MW-12 (bg)	0.015	0.015	0.1	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	MW-13	0.03384	0.01152	0.1	No	10	10	No	0.01	Param.
Molybdenum (mg/L)	MW-14	0.01816	0.0129	0.1	No	10	0	No	0.01	Param.
Selenium (mg/L)	MW-2 (bg)	0.0013	0.00038	0.05	No	10	90	No	0.011	NP (NDs)
Selenium (mg/L)	MW-3 (bg)	0.0013	0.0003	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	MW-6	0.0013	0.00025	0.05	No	10	60	No	0.011	NP (normality)
Selenium (mg/L)	MW-7	0.0013	0.00028	0.05	No	10	60	No	0.011	NP (normality)
Selenium (mg/L)	MW-8	0.0013	0.0003	0.05	No	10	60	No	0.011	NP (normality)
Selenium (mg/L)	MW-9	0.0013	0.00033	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	MW-10	0.0013	0.00025	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	MW-11	0.0013	0.00046	0.05	No	10	50	No	0.011	NP (normality)
Selenium (mg/L)	MW-12 (bg)	0.0013	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	MW-13	0.0013	0.00031	0.05	No	10	70	No	0.011	NP (normality)
Selenium (mg/L)	MW-14	0.0013	0.00024	0.05	No	10	80	No	0.011	NP (NDs)
Thallium (mg/L)	MW-2 (bg)	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-3 (bg)	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-6	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-7	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-8	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-9	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-10	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-11	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-12 (bg)	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-13	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)
Thallium (mg/L)	MW-14	0.0005	0.0005	0.002	No	9	100	No	0.002	NP (NDs)

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# Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

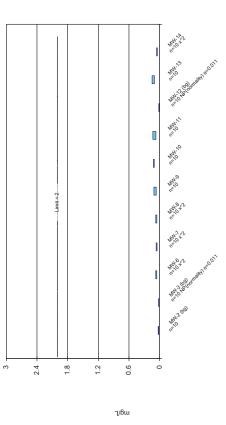


Constituent: Antimony Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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# Parametric and Non-Parametric (NP) Confidence Interval

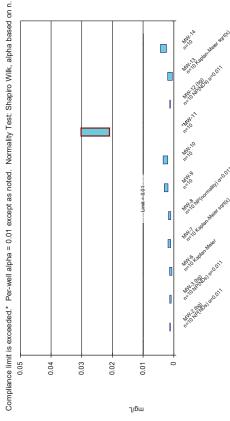
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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# Parametric and Non-Parametric (NP) Confidence Interval

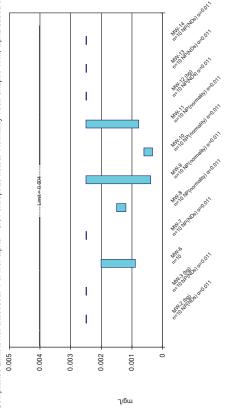


Constituent: Arsenic Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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# 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.

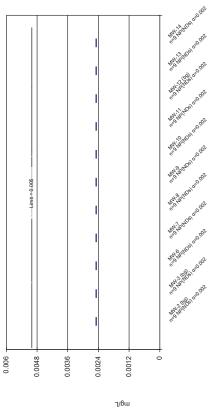


Constituent: Beryllium Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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# Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

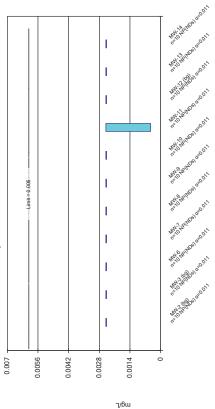


Constituent: Cadmium Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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# Non-Parametric Confidence Interval

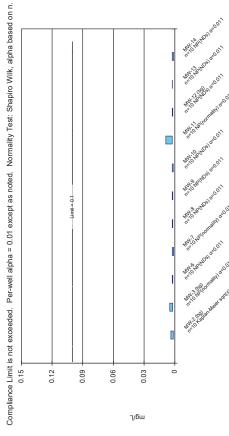
Compliance Limit is not exceeded.



Constituent: Cobalt Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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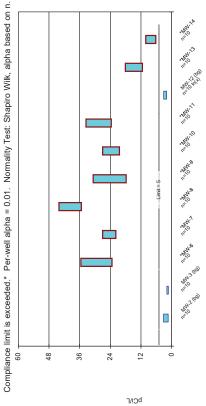
# Parametric and Non-Parametric (NP) Confidence Interval



Constituent: Chromium Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client. Southern Company Data: Smith CCR

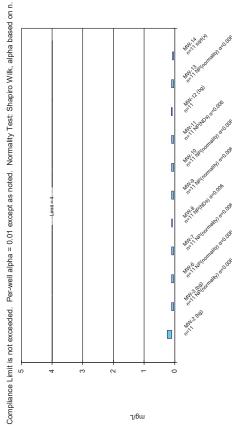
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# Parametric Confidence Interval



Constituent Combined Radium 226 + 228 Analysis Run 10/14/2018 9:06 PM View: Confidence Intervals Plant Smith Client Southern Company Data: Smith CCR

Parametric and Non-Parametric (NP) Confidence Interval

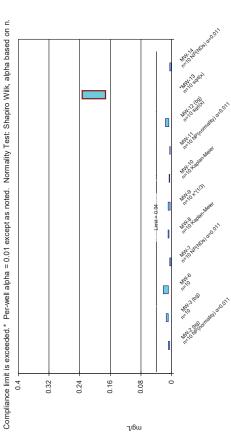


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Constituent: Fluoride Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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Parametric and Non-Parametric (NP) Confidence Interval

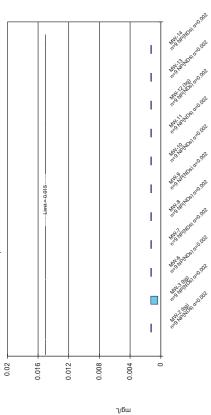


Constituent: Lithium Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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# Non-Parametric Confidence Interval

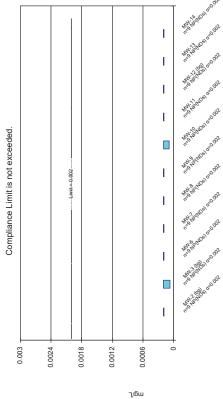




Constituent: Lead Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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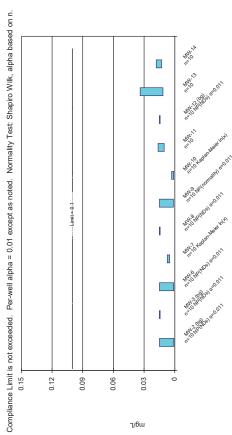
# Non-Parametric Confidence Interval



Constituent: Mercury Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

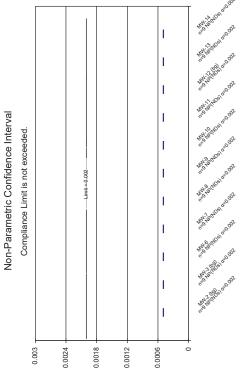
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Parametric and Non-Parametric (NP) Confidence Interval



Constituent: Molybdenum Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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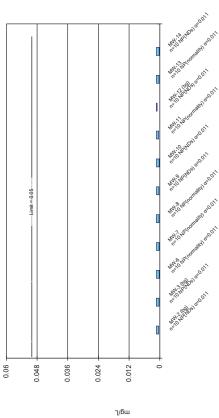
7/6ш

Constituent: Thallium Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client: Southern Company Data: Smith CCR

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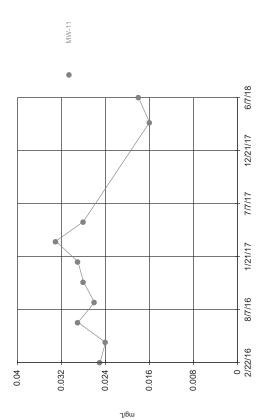
# Non-Parametric Confidence Interval





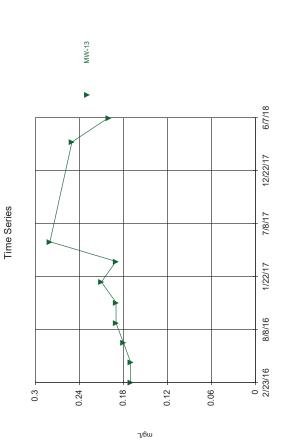
Constituent: Selenium Analysis Run 10/14/2018 9:07 PM View: Confidence Intervals Plant Smith Client Southern Company Data: Smith CCR





Constituent: Arsenic Analysis Run 9/20/2018 3:21 PM View: Confidence Intervals - Updated Plant Smith Client: Southern Company Data: Smith CCR

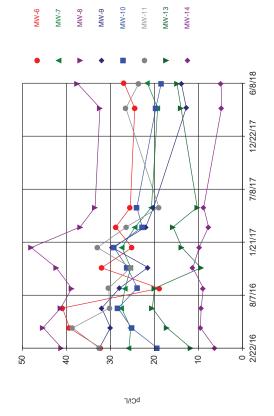
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Constituent: Lithium Analysis Run 9/20/2018 3:21 PM View: Confidence Intervals - Updated Plant Smith Client: Southern Company Data: Smith CCR

# Time Series

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Constituent: Combined Radium 226 + 228 Analysis Run 9/20/2018 3:21 PM View: Confidence Intervals -Plant Smith Client: Southern Company Data: Smith CCR

# Upper Tolerance Limits - App IV

Plant Smith Client: Southern Company Data: Smith CCR Printed 10/14/2018, 9:05 PM Constituent Upper Lim. Bg N Bg Mean Std. Dev. %NDs ND Adj. Transform Method Antimony (mg/L) 0.0025 27 n/a n/a 100 n/a n/a 0.2503 NP Inter(NDs) Arsenic (mg/L) 0.0013 30 n/a n/a 96.67 n/a n/a 0.2146 NP Inter(NDs) Barium (mg/L) 0.03073 30 0.01763 0.005898 10 0.05 None No Inter Beryllium (mg/L) 0.0025 30 100 0.2146 NP Inter(NDs) Cadmium (mg/L) 0.0025 27 100 0.2503 NP Inter(NDs) n/a n/a n/a n/a NP Inter(normal... Chromium (mg/L) 0.012 30 n/a n/a 46.67 n/a n/a 0.2146 0.0025 0.2146 NP Inter(NDs) Cobalt (mg/L) 30 100 n/a n/a n/a Combined Radium 226 + 228 (pCi/L) 1.437 0.05 4.2 30 0.276 0 None sqrt(x) Inter Fluoride (mg/L) 0.2723 33 0.1016 24.24 Kapla... x^(1/3) 0.05 Inter 0.0013 27 0.2503 NP Inter(NDs) Lead (mg/L) n/a n/a 92.59 n/a Lithium (mg/L) 0.01834 30 0.09116 0.01993 20 Kapla... sqrt(x) Inter NP Inter(NDs) 0.2503 Mercury (mg/L) 0.0002 27 n/a 96.3 n/a n/a n/a Molybdenum (mg/L) 0.015 30 n/a n/a n/a 0.2146 NP Inter(NDs) NP Inter(NDs) Selenium (mg/L) 0.0013 0.2146 30 n/a 90 n/a n/a n/a Thallium (mg/L) 0.0005 27 100 0.2503 NP Inter(NDs)

# JUNE 2018 STATISTICAL ANALYSIS - APPENDIX III CONSTITUENTS

# Interwell Prediction Limit Summary Table - Significant Results

Data: Smith CCR Printed 10/14/2018, 9:17 PM Plant Smith Client: Southern Company Sig. Bg N Bg Mean Std. Dev. %NDsND Adj. Constituent Well Upper Lim. Lower Lim. Date Observ. Transform Alpha Method MW-6 n/a Boron (mg/L) 0.33 n/a 6/8/2018 8.4 Yes 33 n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) MW-7 0.33 n/a 6/8/2018 3 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 MW-8 Boron (mg/L) 0.33 n/a 6/7/2018 15 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) MW-9 0.33 n/a 6/7/2018 9.3 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 MW-10 n/a 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) 6/7/2018 11 Yes 33 51.52 n/a n/a 0.33 n/a n/a MW-11 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) 0.33 n/a 6/7/2018 3.7 Yes 33 n/a n/a 51.52 n/a n/a Boron (mg/L) MW-13 0.33 n/a 6/7/2018 15 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) MW-14 0.33 6/7/2018 12 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 n/a Calcium (mg/L) MW-6 59.3 n/a 6/8/2018 290 Yes 33 22.78 17.82 0 None No 0.0009403 Param Inter 1 of 2 Calcium (mg/L) MW-7 6/8/2018 22.78 17.82 0.0009403 Param Inter 1 of 2 59.3 n/a 200 Yes 33 0 None No MW-8 Calcium (mg/L) 59.3 n/a 6/7/2018 530 Yes 33 22.78 17.82 0 None No 0.0009403 Param Inter 1 of 2 Calcium (mg/L) MW-9 6/7/2018 280 Yes 33 22.78 17.82 0 0.0009403 Param Inter 1 of 2 59.3 n/a None No Calcium (mg/L) MW-10 59.3 n/a 6/7/2018 500 Yes 33 22.78 17.82 0 None No 0.0009403 Param Inter 1 of 2 MW-11 Calcium (mg/L) 59.3 n/a 6/7/2018 100 Yes 33 22.78 17.82 0 None No 0.0009403 Param Inter 1 of 2 Calcium (mg/L) MW-13 59.3 6/7/2018 670 Yes 33 22.78 17.82 0 0.0009403 Param Inter 1 of 2 No MW-14 22.78 Calcium (mg/L) 59.3 n/a 6/7/2018 260 Yes 33 17.82 0 No 0.0009403 Param Inter 1 of 2 None Chloride (mg/L) MW-6 72.1 0.0009403 Param Inter 1 of 2 250.5 n/a 6/8/2018 2900 Yes 33 87.06 None No MW-7 6/8/2018 Chloride (mg/L) 250.5 n/a 1400 Yes 33 72.1 87.06 0 None No 0.0009403 Param Inter 1 of 2 Chloride (mg/L) MW-8 250.5 n/a 6/7/2018 3500 Yes 33 72.1 87.06 0 No 0.0009403 Param Inter 1 of 2 Chloride (mg/L) MW-9 250.5 n/a 6/7/2018 2200 Yes 33 72.1 87.06 0 Nο 0.0009403 Param Inter 1 of 2 None Chloride (mg/L) MW-10 6/7/2018 0.0009403 Param Inter 1 of 2 250.5 n/a Yes 33 72.1 87.06 None No Chloride (mg/L) MW-11 0.0009403 Param Inter 1 of 2 250.5 6/7/2018 Yes 33 n/a 2000 72.1 87.06 0 None Nο MW-13 Chloride (mg/L) 250.5 n/a 6/7/2018 Yes 33 72.1 87.06 0 None No 0.0009403 Param Inter 1 of 2 MW-14 Chloride (mg/L) 250.5 n/a 6/7/2018 2200 Yes 33 72.1 87.06 0 None No 0.0009403 Param Inter 1 of 2 Sulfate (mg/L) MW-6 6.6 n/a 6/8/2018 560 Yes 33 n/a n/a 69.7 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 MW-7 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) 6.6 n/a 6/8/2018 750 Yes 33 n/a n/a 69 7 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) MW-8 6.6 6/7/2018 910 Yes 33 n/a 69.7 n/a n/a n/a n/a MW-9 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) 6.6 n/a 6/7/2018 640 Yes 33 n/a n/a 69.7 n/a n/a Sulfate (mg/L) MW-10 830 Yes 33 n/a 0.001617 NP Inter (NDs) 1 of 2 6.6 n/a 6/7/2018 n/a n/a 69.7 n/a Sulfate (mg/L) MW-11 6.6 n/a 6/7/2018 240 Yes 33 n/a n/a 69.7 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) MW-13 6.6 n/a 6/7/2018 840 Yes 33 n/a n/a 69.7 n/a 0.001617 NP Inter (NDs) 1 of 2 n/a Sulfate (mg/L) MW-14 6.6 n/a 6/7/2018 590 Yes 33 n/a n/a 69.7 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Total Dissolved Solids (mg/L) MW-6 6/8/2018 Yes 32 215.1 191.4 0.0009403 Param Inter 1 of 2 608.6 n/a 6100 0 None No Total Dissolved Solids (mg/L) MW-7 608.6 n/a 6/8/2018 3200 Yes 32 215.1 191.4 0 None No 0.0009403 Param Inter 1 of 2 Total Dissolved Solids (mg/L) MW-8 215.1 0.0009403 Param Inter 1 of 2 608.6 n/a 6/7/2018 6000 Yes 32 191.4 0 None No Total Dissolved Solids (mg/L) MW-9 608.6 n/a 6/7/2018 4000 Yes 32 215.1 191.4 0 None No 0.0009403 Param Inter 1 of 2 Total Dissolved Solids (mg/L) MW-10 Yes 32 0.0009403 Param Inter 1 of 2 608.6 n/a 6/7/2018 5800 215.1 191.4 0 None Nο Total Dissolved Solids (mg/L) MW-11 0.0009403 Param Inter 1 of 2 n/a 6/7/2018 3400 Yes 32 215.1 191.4 0 None No Total Dissolved Solids (mg/L) MW-13 8200 215.1 191.4 0 0.0009403 Param Inter 1 of 2 608.6 n/a 6/7/2018 Yes 32 No None

6/7/2018

4200

Yes 32

215.1

191.4

None

No

0.0009403 Param Inter 1 of 2

Total Dissolved Solids (mg/L)

MW-14

608.6

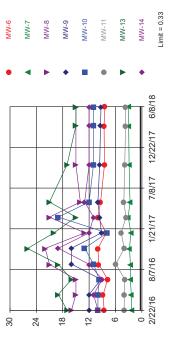
# Interwell Prediction Limit Summary Table - All Results

Data: Smith CCR Printed 10/14/2018, 9:17 PM Plant Smith Client: Southern Company Std. Dev. %NDsND Adj. Constituent Upper Lim. Lower Lim. Date Observ. Sig. Bg N Bg Mean Transform Alpha MW-6 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) 0.33 n/a 6/8/2018 8.4 Yes 33 n/a n/a 51.52 n/a n/a Boron (mg/L) MW-7 0.33 n/a 6/8/2018 3 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 MW-8 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) 0.33 n/a 6/7/2018 15 Yes 33 n/a n/a 51.52 n/a n/a Boron (mg/L) MW-9 0.33 n/a 6/7/2018 9.3 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 MW-10 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) 0.33 6/7/2018 11 Yes 33 n/a 51.52 n/a n/a n/a n/a MW-11 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) 0.33 n/a 6/7/2018 3.7 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Boron (mg/L) MW-13 0.33 n/a 6/7/2018 15 Yes 33 n/a n/a 51.52 n/a n/a Boron (mg/L) MW-14 0.33 n/a 6/7/2018 12 Yes 33 n/a n/a 51.52 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Calcium (mg/L) MW-6 59.3 n/a 6/8/2018 290 Yes 33 22.78 17.82 0 None No 0.0009403 Param Inter 1 of 2 Calcium (mg/L) MW-7 6/8/2018 Yes 33 22.78 17.82 0.0009403 Param Inter 1 of 2 59.3 n/a 200 0 None No MW-8 0.0009403 Param Inter 1 of 2 Calcium (mg/L) 59.3 n/a 6/7/2018 530 Yes 33 22.78 17.82 0 None No Calcium (mg/L) MW-9 59.3 6/7/2018 280 Yes 33 22.78 17.82 0 0.0009403 Param Inter 1 of 2 n/a None No Calcium (mg/L) MW-10 59.3 n/a 6/7/2018 500 Yes 33 22.78 17.82 0 None No 0.0009403 Param Inter 1 of 2 MW-11 0.0009403 Param Inter 1 of 2 Calcium (mg/L) 59.3 n/a 6/7/2018 100 Yes 33 22.78 17.82 0 None No Calcium (mg/L) MW-13 59.3 6/7/2018 670 Yes 33 22.78 17.82 0 0.0009403 Param Inter 1 of 2 n/a None No MW-14 Calcium (mg/L) 22.78 0 0.0009403 Param Inter 1 of 2 59.3 n/a 6/7/2018 260 Yes 33 17.82 No None Chloride (mg/L) MW-6 6/8/2018 72.1 0.0009403 Param Inter 1 of 2 250.5 n/a 2900 Yes 33 87.06 No MW-7 0.0009403 Param Inter 1 of 2 Chloride (mg/L) 250.5 n/a 6/8/2018 1400 Yes 33 72.1 87.06 0 None No Chloride (mg/L) MW-8 250.5 n/a 6/7/2018 3500 Yes 33 72.1 87.06 0 None No 0.0009403 Param Inter 1 of 2 Chloride (mg/L) MW-9 250.5 n/a 6/7/2018 2200 Yes 33 72.1 87.06 0 Nο 0.0009403 Param Inter 1 of 2 None Chloride (mg/L) MW-10 0.0009403 Param Inter 1 of 2 250.5 n/a 6/7/2018 2700 Yes 33 72.1 87.06 0 None No Chloride (mg/L) MW-11 0.0009403 Param Inter 1 of 2 250.5 6/7/2018 Yes 33 72.1 n/a 2000 87.06 0 None Nο MW-13 Chloride (mg/L) 250.5 n/a 6/7/2018 Yes 33 72.1 87.06 0 None No 0.0009403 Param Inter 1 of 2 Chloride (mg/L) MW-14 250.5 n/a 6/7/2018 2200 Yes 33 72.1 87.06 0 None Nο 0.0009403 Param Inter 1 of 2 Fluoride (mg/L) MW-6 0 2377 n/a 6/8/2018 0.05 Nο 0.09148 0.07133 24.24 Kaplan-Meier Nο 0.0009403 Param Inter 1 of 2 Fluoride (mg/L) MW-7 33 0.09148 0.07133 0.0009403 Param Inter 1 of 2 0.2377 n/a 6/8/2018 0.1ND Nο 24.24 Kaplan-Meier Fluoride (mg/L) MW-8 0.2377 n/a 6/7/2018 0.1ND Nο 33 0.09148 0.07133 24.24 Kaplan-Meier 0.0009403 Param Inter 1 of 2 MW-9 33 Fluoride (mg/L) 0.2377 n/a 6/7/2018 0.05 No 0.09148 0.07133 24.24 Kaplan-Meier 0.0009403 Param Inter 1 of 2 Fluoride (mg/L) MW-10 0.2377 6/7/2018 0.1ND No 33 0.09148 0.07133 24.24 Kaplan-Meier 0.0009403 Param Inter 1 of 2 n/a Fluoride (mg/L) MW-11 0.2377 n/a 6/7/2018 0.1ND No 33 0.09148 0.07133 24.24 Kaplan-Meier 0.0009403 Param Inter 1 of 2 Fluoride (mg/L) MW-13 0.2377 n/a 6/7/2018 0.05 Nο 33 0.09148 0.07133 24.24 Kaplan-Meier 0.0009403 Param Inter 1 of 2 MW-14 Fluoride (mg/L) 0.2377 n/a 6/7/2018 0.08 No 33 0.09148 0.07133 24.24 Kaplan-Meier No 0.0009403 Param Inter 1 of 2 Sulfate (mg/L) MW-6 6/8/2018 69.7 n/a 0.001617 NP Inter (NDs) 1 of 2 n/a 560 Yes 33 n/a n/a 6.6 n/a Sulfate (mg/L) MW-7 6/8/2018 750 Yes 33 n/a 69.7 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 6.6 n/a n/a MW-8 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) 6.6 n/a 6/7/2018 910 Yes 33 n/a n/a 69.7 n/a n/a Sulfate (mg/L) MW-9 6.6 n/a 6/7/2018 640 Yes 33 n/a n/a 69.7 n/a n/a 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) MW-10 6/7/2018 n/a 0.001617 NP Inter (NDs) 1 of 2 6.6 n/a 830 Yes 33 n/a n/a 69.7 n/a MW-11 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) 6/7/2018 240 Yes 33 n/a n/a 69.7 n/a MW-13 0.001617 NP Inter (NDs) 1 of 2 6/7/2018 840 n/a n/a Sulfate (mg/L) 6.6 n/a Yes 33 n/a 69.7 n/a MW-14 6/7/2018 590 0.001617 NP Inter (NDs) 1 of 2 Sulfate (mg/L) 6.6 n/a Yes 33 n/a n/a 69.7 n/a Total Dissolved Solids (mg/L) MW-6 608.6 6/8/2018 6100 Yes 32 215.1 191.4 0.0009403 Param Inter 1 of 2 n/a 0 None No Total Dissolved Solids (mg/L) MW-7 0.0009403 Param Inter 1 of 2 n/a 6/8/2018 3200 Yes 32 215.1 191.4 0 No Total Dissolved Solids (mg/L) MW-8 6000 Yes 32 215.1 191 4 0.0009403 Param Inter 1 of 2 608.6 n/a 6/7/2018 n None No Total Dissolved Solids (mg/L) MW-9 608.6 n/a 6/7/2018 4000 Yes 32 215.1 191.4 None No 0.0009403 Param Inter 1 of 2 Total Dissolved Solids (mg/L) MW-10 0.0009403 Param Inter 1 of 2 608.6 n/a 6/7/2018 5800 Yes 32 215.1 191.4 0 None No Total Dissolved Solids (mg/L) MW-11 608.6 n/a 6/7/2018 3400 Yes 32 215.1 191.4 0 None No 0.0009403 Param Inter 1 of 2 Total Dissolved Solids (mg/L) MW-13 6/7/2018 0.0009403 Param Inter 1 of 2 608.6 n/a 8200 Yes 32 215.1 191.4 0 None Nο Total Dissolved Solids (mg/L) MW-14 608.6 n/a 6/7/2018 4200 215.1 191.4 None Nο 0.0009403 Param Inter 1 of 2

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Exceeds Limit: MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14

Interwell Non-parametric Prediction Limit



٦/6w

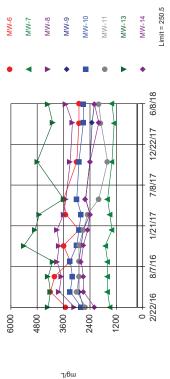
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 33 background values. 51.52% NDs. Annual per-constituent alpha = 0.02556. Individual comparison alpha = 0.001617 (1 of 2). Comparing 8 points to limit.

Constituent: Boron Analysis Run 10/14/2018 9:14 PM View: Interwell PLs Client: Southern Company Data: Smith CCR Plant Smith

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Exceeds Limit: MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14

Interwell Parametric Prediction Limit



Background Data Summary: Mean=72.1, Std. Dev.=87.06, n=33. Normality test was disabled. Kappa = 2.05 (c=7, w=8.1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 8 points to limit.

Constituent: Chloride Analysis Run 10/14/2018 9:15 PM View: Interwell PLs

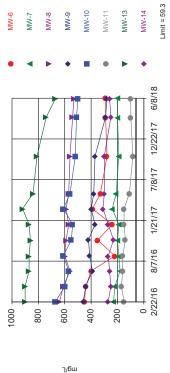
Client: Southern Company Data: Smith CCR

Plant Smith

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Exceeds Limit: MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14

Interwell Parametric Prediction Limit



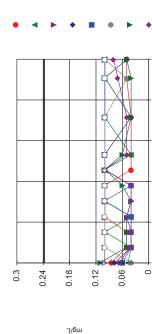
Background Data Summary: Mean=22.78, Std. Dev.=17.82, n=33. Normality test was disabled. Kappa = 2.05 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing

Analysis Run 10/14/2018 9:15 PM View: Interwell PLs Client: Southern Company Data: Smith CCR Constituent: Calcium Plant Smith

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Within Limit

Interwell Parametric Prediction Limit



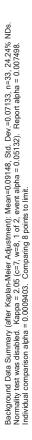
MW-10

MW-11 MW-13 MW-14

6-WW

MW-8

9-WW MW-7



Limit = 0.2377

6/8/18

12/22/17

7/8/17

1/21/17

8/7/16

2/22/16

Constituent: Boron (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs Plant Smith Client: Southern Company Data: Smith CCR

	MW-2 (bg)	MW-11	MW-12 (bg)	MW-3 (bg)	MW-9	MW-8	MW-7	MW-13	MW-6
2/22/2016	<0.05	4	0.14 (J)	<0.05					
2/23/2016					12	16	2.3	17	8.6
4/25/2016	0.022 (J)			<0.05					
4/26/2016		4	0.27				2.4		8.8
4/27/2016					12	15		19	
6/27/2016	0.032 (J)		0.083	<0.05					
6/28/2016		3.9			9.3	15	2.6	16	7.8
8/29/2016	<0.05 (*)		<0.05 (*)	<0.05		21	2.6	19	9.8
8/30/2016		5.9			16				
11/1/2016	<0.05		0.1	<0.05					
11/2/2016						22	2.8	26	10
11/3/2016		4			16				
1/4/2017	<0.05		0.062	<0.05					
1/5/2017		4.7			9.2	13	2.5	20	8.1
3/10/2017	0.032 (J)		0.06	<0.05					
3/11/2017		3.6			9.6	21	3.1	15	10
5/11/2017	0.23		0.33	0.18					9.4
5/12/2017		4.1			10	14	2.7	21	
10/12/2017	<0.05		0.082	<0.05			2.9		8.5
10/13/2017		3.9			9.6	15		17	
3/20/2018			0.072	<0.05					
3/21/2018	<0.05	3.7					3		8.6
3/22/2018						15		15	
3/23/2018					9.4				
6/6/2018	0.027 (J)		0.077	<0.05					
6/7/2018		3.7			9.3	15		15	
6/8/2018							3		8.4

Constituent: Boron (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs Plant Smith Client: Southern Company Data: Smith CCR

	MW-14	MW-10
2/22/2016		
2/23/2016	10	10
4/25/2016		
4/26/2016		10
4/27/2016	11	
6/27/2016		
6/28/2016	9	9.7
8/29/2016	12	
8/30/2016		11
11/1/2016		
11/2/2016		
11/3/2016	19	13
1/4/2017		
1/5/2017	12	7.9
3/10/2017		
3/11/2017	11	19
5/11/2017		
5/12/2017	13	12
10/12/2017		
10/13/2017	12	11
3/20/2018		
3/21/2018		
3/22/2018	12	11
3/23/2018		
6/6/2018		
6/7/2018	12	11
6/8/2018		

Constituent: Calcium (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs

Plant Smith Client: Southern Company Data: Smith CCR

	MW-2 (bg)	MW-11	MW-12 (bg)	MW-3 (bg)	MW-9	MW-8	MW-7	MW-13	MW-6
2/22/2016	12	150	23	1.9					
2/23/2016					460	640	230	900	450
4/25/2016	11			1.8					
4/26/2016		170	33				220		440
4/27/2016					440	610		900	
6/27/2016	7.7		29	1.7					
6/28/2016		160			390	560	180	870	400
8/29/2016	48		28	1.7		600	190	870	220
8/30/2016		160			410				
11/1/2016	49		36	1.9					
11/2/2016						590	200	860	350
11/3/2016		140			420				
1/4/2017	44		36	1.8					
1/5/2017		150			370	570	190	870	240
3/10/2017	46		37	1.9					
3/11/2017		150			400	590	240	920	390
5/11/2017	43		31	1.7					330
5/12/2017		110			380	570	210	840	
10/12/2017	45		32	1.9			190		280
10/13/2017		83			370	560		810	
3/20/2018			34	1.9					
3/21/2018	45	99					200		290
3/22/2018						540		740	
3/23/2018					290				
6/6/2018	32		30	1.8					
6/7/2018		100			280	530		670	
6/8/2018							200		290

Constituent: Calcium (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs

Plant Smith Client: Southern Company Data: Smith CCR

	MW-14	MW-10
2/22/2016		
2/23/2016	270	670
4/25/2016		
4/26/2016		600
4/27/2016	250	
6/27/2016		
6/28/2016	260	570
8/29/2016	270	
8/30/2016		610
11/1/2016		
11/2/2016		
11/3/2016	230	550
1/4/2017		
1/5/2017	270	540
3/10/2017		
3/11/2017	310	610
5/11/2017		
5/12/2017	300	560
10/12/2017		
10/13/2017	300	520
3/20/2018		
3/21/2018		
3/22/2018	250	510
3/23/2018		
6/6/2018		
6/7/2018	260	500
6/8/2018		

Constituent: Chloride (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs
Plant Smith Client: Southern Company Data: Smith CCR

	MW-2 (bg)	MW-11	MW-12 (bg)	MW-3 (bg)	MW-9	MW-8	MW-7	MW-13	MW-6
2/22/2016	15	2600	140	11					
2/23/2016					2700	3100	1500	4300	3500
4/25/2016	18			10					
4/26/2016		3000	190				1600		4200
4/27/2016					2900	3800		4200	
6/27/2016	17		170	11					
6/28/2016		2900			2900	3700	1600	4300	4000
8/29/2016	16		180	11		3900	1600	4100	3300
8/30/2016		2900			2900				
11/1/2016	11		230	11					
11/2/2016						3800	1700	5400	3600
11/3/2016		2900			2800				
1/4/2017	11		220	11					
1/5/2017		2700			2700	3900	1400	4900	2900
3/10/2017	14		210	11					
3/11/2017		2500			2400	3600	1500	4700	3500
5/11/2017	11		200	12					3600
5/12/2017		2000			2600	3500	1600	3600	
10/12/2017	12		190	12			1400		3000
10/13/2017		1600			2400	3300		4800	
3/20/2018			190	11					
3/21/2018	9.3	1900					1300		2900
3/22/2018						3200		4100	
3/23/2018					2300				
6/6/2018	13		190	11					
6/7/2018		2000			2200	3500		4300	
6/8/2018							1400		2900

Constituent: Chloride (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs
Plant Smith Client: Southern Company Data: Smith CCR

	MW-14	MW-10
2/22/2016		
2/23/2016	2200	2800
4/25/2016		
4/26/2016		3300
4/27/2016	2700	
6/27/2016		
6/28/2016	2700	3200
8/29/2016	2800	
8/30/2016		3300
11/1/2016		
11/2/2016		
11/3/2016	2700	3000
1/4/2017		
1/5/2017	2500	2900
3/10/2017		
3/11/2017	2400	2800
5/11/2017		
5/12/2017	2600	3000
10/12/2017		
10/13/2017	2400	2900
3/20/2018		
3/21/2018		
3/22/2018	2000	2700
3/23/2018		
6/6/2018		
6/7/2018	2200	2700
6/8/2018		

Constituent: Fluoride (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs

Plant Smith Client: Southern Company Data: Smith CCR

	MW-2 (bg)	MW-11	MW-12 (bg)	MW-3 (bg)	MW-9	MW-8	MW-7	MW-13	MW-6
2/22/2016	0.06 (J)	0.04 (J)	0.09 (J)	0.04 (J)					
2/23/2016					0.077 (J)	<0.1	0.047 (J)	0.11	0.085 (J)
4/25/2016	0.04 (J)			<0.1					
4/26/2016		<0.1	0.08 (J)				0.04 (J)		0.05 (J)
4/27/2016					0.04 (J)	<0.1		0.05 (J)	
6/27/2016	0.04 (J)		0.08 (J)	<0.1					
6/28/2016		<0.1			0.04 (J)	<0.1	<0.1	0.05 (J)	0.05 (J)
8/29/2016	0.16		0.09 (J)	0.04 (J)		<0.1	0.04 (J)	0.05 (J)	<0.1
8/30/2016		<0.1			0.04 (J)				
11/1/2016	0.17		0.08 (J)	<0.1					
11/2/2016						<0.1	<0.1	0.04 (J)	<0.1
11/3/2016		<0.1			0.04 (J)				
1/4/2017	0.23		0.1	<0.1					
1/5/2017		<0.1			0.04 (J)	<0.1	<0.1	0.06 (J)	<0.1
3/10/2017	0.21		0.1	<0.1					
3/11/2017		<0.1			<0.1	<0.1	<0.1	<0.1	0.04 (J)
5/11/2017	0.23		0.1	<0.1					0.04 (J)
5/12/2017		<0.1			<0.1	<0.1	0.04 (J)	0.06 (J)	
10/12/2017	0.27		0.12	<0.1			<0.1		0.04
10/13/2017		<0.1			0.04	<0.1		0.04	
3/20/2018			0.12	<0.1					
3/21/2018	0.28	0.05 (J)					<0.1		0.05 (J)
3/22/2018						<0.1		0.04 (J)	
3/23/2018					<0.1				
6/6/2018	0.19		0.12	0.04 (J)					
6/7/2018		<0.1			0.05 (J)	<0.1		0.05 (J)	
6/8/2018							<0.1		0.05 (J)

Constituent: Fluoride (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs

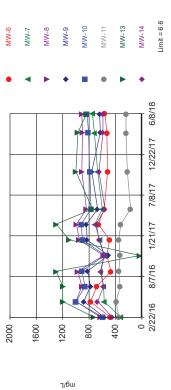
Plant Smith Client: Southern Company Data: Smith CCR

	MW-14	MW-10
2/22/2016		
2/23/2016	0.068 (J)	0.06 (J)
4/25/2016		
4/26/2016		0.04 (J)
4/27/2016	0.04 (J)	
6/27/2016		
6/28/2016	0.04 (J)	0.04 (J)
8/29/2016	0.05 (J)	
8/30/2016		0.04 (J)
11/1/2016		
11/2/2016		
11/3/2016	0.04 (J)	<0.1
1/4/2017		
1/5/2017	0.04 (J)	0.04 (J)
3/10/2017		
3/11/2017	<0.1	<0.1
5/11/2017		
5/12/2017	0.05 (J)	<0.1
10/12/2017		
10/13/2017	0.05	<0.1
3/20/2018		
3/21/2018		
3/22/2018	0.07 (J)	<0.1
3/23/2018		
6/6/2018		
6/7/2018	0.08 (J)	<0.1
6/8/2018		

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Exceeds Limit: MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14

-9, Prediction Limit Interwell Non-parametric



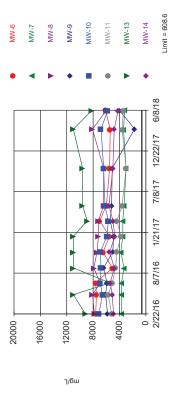
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 33 background values. 69.7% NDs. Annual per-constituent alpha = 0.02556. Individual comparison alpha = 0.001617 (1 of 2). Comparing 8 points to limit.

Constituent: Sulfate Analysis Run 10/14/2018 9:15 PM View: Interwell PLs Plant Smith Client: Southern Company Data: Smith CCR

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Exceeds Limit: MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14

Prediction Limit Interwell Parametric



Background Data Summary: Mean=215.1, Std. Dev.=191.4, n=32. Normality test was disabled. Kappa = 2.056 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 8 points to limit.

Constituent: Total Dissolved Solids Analysis Run 10/14/2018 9:15 PM View: Interwell PLs Plant Smith Client: Southern Company Data: Smith CCR

Constituent: Sulfate (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs
Plant Smith Client: Southern Company Data: Smith CCR

	MW-2 (bg)	MW-11	MW-12 (bg)	MW-3 (bg)	MW-9	MW-8	MW-7	MW-13	MW-6
2/22/2016	6.3	350	<5	<5					
2/23/2016					570	630	320	730	480
4/25/2016	6.1			1.4 (J)					
4/26/2016		390	<5				570		780
4/27/2016					880	1000		1200	
6/27/2016	6.6		1.6 (J)	<5					
6/28/2016		330			780	910	580	1200	680
8/29/2016	4.5 (J)		<5	<5		970	630	1300	470 (J)
8/30/2016		350			820				
11/1/2016	<5		<5	<5					
11/2/2016						580	570	31	530
11/3/2016		330			510				
1/4/2017	<5 (*)		<5	<5 (*)					
1/5/2017		350			830	950	640	1100	490
3/10/2017	2.3 (J)		<5	<5					
3/11/2017		320			840	990	710	1300	660
5/11/2017	<5		<5	<5					570
5/12/2017		170 (J)			670	840	600	750	
10/12/2017	<5		<5	<5			670		520
10/13/2017		220			760	910		1000	
3/20/2018			1.8 (J)	<5					
3/21/2018	<5	240					720		530
3/22/2018						900		970	
3/23/2018					630				
6/6/2018	4.8 (J)		2.3 (J)	<5					
6/7/2018		240			640	910		840	
6/8/2018							750		560

Constituent: Sulfate (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs
Plant Smith Client: Southern Company Data: Smith CCR

	MW-14	MW-10
2/22/2016		
2/23/2016	450	590
4/25/2016		
4/26/2016		1000
4/27/2016	670	
6/27/2016		
6/28/2016	580	860
8/29/2016	620	
8/30/2016		910
11/1/2016		
11/2/2016		
11/3/2016	570	560
1/4/2017		
1/5/2017	650	900
3/10/2017		
3/11/2017	690	920
5/11/2017		
5/12/2017	560	770
10/12/2017		
10/13/2017	650	790
3/20/2018		
3/21/2018		
3/22/2018	590	810
3/23/2018		
6/6/2018		
6/7/2018	590	830
6/8/2018		

Constituent: Total Dissolved Solids (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs Plant Smith Client: Southern Company Data: Smith CCR

	MW-2 (bg)	MW-11	MW-12 (bg)	MW-3 (bg)	MW-8	MW-10	MW-7	MW-6	MW-13
2/22/2016	74	5200	410	46					
2/23/2016					7800	7100	3700	7600	9200
5/11/2016	200	5700	410	42		6600	3700	7500	11000
5/12/2016					8100				
6/27/2016	42		4200 (o)	24					
6/28/2016		5100			6900	6900	3700	7600	5400
8/29/2016	200		490	42	7900		3300	5100	11000
8/30/2016		4600				6800			
11/1/2016	220		540	64					
11/2/2016					7400		3800	6500	11000
11/3/2016		4400				6900			
1/4/2017	140		520	44					
1/5/2017		3800			7200	5900	3500	5500	11000
3/10/2017	160		490	16					
3/11/2017		4400			7200	5700	3500	7000	8900
5/11/2017	190		490	42				6000	
5/12/2017		3600			6400	6200	3300		9600
10/12/2017	150		470	30			3000	5500	
10/13/2017		3000			6400	6400			9600
3/20/2018			510	12					
3/21/2018	150	3600					3400	5400	
3/22/2018					8100	6800			11000
3/23/2018									
6/6/2018	160		460	46					
6/7/2018		3400			6000	5800			8200
6/8/2018							3200	6100	

Constituent: Total Dissolved Solids (mg/L) Analysis Run 10/14/2018 9:17 PM View: Interwell PLs Plant Smith Client: Southern Company Data: Smith CCR

	MW-9	MW-14
2/22/2016		
2/23/2016	5800	4900
5/11/2016		
5/12/2016	6100	5100
6/27/2016		
6/28/2016	5900	5400
8/29/2016		4800
8/30/2016	6400	
11/1/2016		
11/2/2016		
11/3/2016	5000	5500
1/4/2017		
1/5/2017	4900	4700
3/10/2017		
3/11/2017	5400	5000
5/11/2017		
5/12/2017	5200	5600
10/12/2017		
10/13/2017	5100	5000
3/20/2018		
3/21/2018		
3/22/2018		4800
3/23/2018	1700	
6/6/2018		
6/7/2018		
	4000	4200

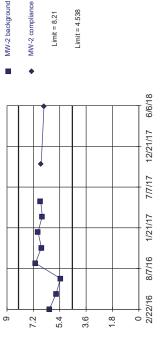
# Intrawell Prediction Limit Summary Table - All Results

		Pla	ant Smith	Client: South	ern Company	Da	ıta: Sn	nith CCR	Printed 1	0/14/2	018, 9:14 PM			
Constituent	Well	Upper Lim	. Lower Lim	n. Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%ND	SND Adj.	Transform	Alpha	Method
pH (SU)	MW-2	8.21	4.538	6/6/2018	6.47	No	8	6.374	0.6092	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-3	5.354	4.616	6/6/2018	4.96	No	8	4.985	0.1225	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-6	6.253	3.967	6/8/2018	5.25	No	8	5.11	0.3792	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-7	6.575	5.86	6/8/2018	6.31	No	8	6.218	0.1188	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-8	5.62	3.568	6/7/2018	4.73	No	8	4.594	0.3404	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-9	6.725	4.202	6/7/2018	6.52	No	8	5.464	0.4185	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-10	5.468	4.964	6/7/2018	5.35	No	8	5.216	0.08366	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-11	7.003	5.977	6/7/2018	6.39	No	8	6.49	0.1702	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-12	6.28	5.823	6/6/2018	6.04	No	8	6.051	0.07586	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-13	7.628	6.58	6/7/2018	6.86	No	8	7.104	0.1739	0	None	No	0.000470	Param Intra 1 of 2
pH (SU)	MW-14	6.959	6.416	6/7/2018	6.88	No	8	6.688	0.09004	0	None	No	0.000470	Param Intra 1 of 2

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Within Limits

Intrawell Parametric Prediction Limit



ns

Background Data Summary: Mean=6.374, Std. Dev.=0.6092, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/14/2018 9:11 PM View: Intrawell PLs Plant Smith Client: Southern Company Data: Smith CCR

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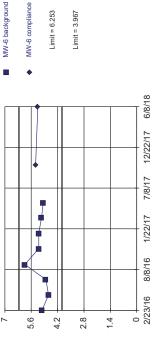
Within Limits

Intrawell Parametric

Prediction Limit

5.6 4.2

ns



Background Data Summary: Mean=5.11, Std. Dev.=0.3792, n=8. Normality test was disabled. Kappa = 3.014 (o=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/14/2018 9:11 PM View: Intrawell PLs

Plant Smith Client: Southern Company Data: Smith CCR

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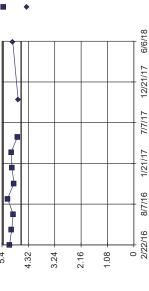
Within Limits

Intrawell Parametric Prediction Limit



MW-3 background

MW-3 compliance



ns

Limit = 4.616 Limit = 5.354

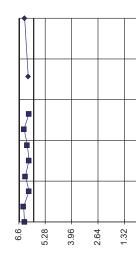
Background Data Summary: Mean=4.985, Std. Dev.=0.1225, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/14/2018 9:11 PM View: Intrawell PLs Plant Smith Client: Southern Company Data: Smith CCR

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Within Limits

Intrawell Parametric Prediction Limit



ns



MW-7 background

MW-7 compliance

Background Data Summary: Mean=6.218, Std. Dev.=0.1188, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403. 7/8/17 12/22/17 6/8/18 1/22/17 8/8/16 0 2/23/16

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-2	MW-2
2/22/2016	6.11 (B01)	
4/25/2016	5.65 (B02)	
6/27/2016	5.35 (B03)	
8/29/2016	7.06 (B04)	
11/1/2016	6.65 (B05)	
1/4/2017	6.88 (B06)	
3/10/2017	6.59 (B07)	
5/11/2017	6.7 (B08)	
10/12/2017		6.66
6/6/2018		6.47

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs
Plant Smith Client: Southern Company Data: Smith CCR

	MW-3	MW-3
2/22/2016	5.09 (B01)	
4/25/2016	5 (B02)	
6/27/2016	4.94 (B03)	
8/29/2016	5.17 (B04)	
11/1/2016	4.91 (B05)	
1/4/2017	4.99 (B06)	
3/10/2017	5.02 (B07)	
5/11/2017	4.76 (B08)	
10/12/2017		4.74
6/6/2018		4.96

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs
Plant Smith Client: Southern Company Data: Smith CCR

	MW-6	MW-6
2/23/2016	5.03 (B01)	
4/26/2016	4.68 (B02)	
6/28/2016	4.82 (B03)	
8/29/2016	5.94 (B04)	
11/2/2016	5.2 (B05)	
1/5/2017	5.2 (B06)	
3/11/2017	5.05 (B07)	
5/11/2017	4.96 (B08)	
10/12/2017		5.37
6/8/2018		5.25

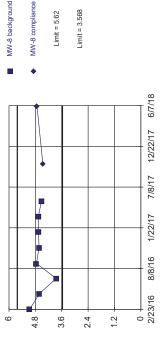
Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MVV-/	MVV-/
2/23/2016	6.32 (B01)	
4/26/2016	6.36 (B02)	
6/28/2016	6.09 (B03)	
8/29/2016	6.27 (B04)	
11/2/2016	6.09 (B05)	
1/5/2017	6.18 (B06)	
3/11/2017	6.34 (B07)	
5/12/2017	6.09 (B08)	
10/12/2017		6.13
6/8/2018		6.31
	4/26/2016 6/28/2016 8/29/2016 11/2/2016 1/5/2017 3/11/2017 5/12/2017	4/26/2016 6.36 (B02) 6/28/2016 6.09 (B03) 8/29/2016 6.27 (B04) 11/2/2016 6.09 (B05) 1/5/2017 6.18 (B06) 3/11/2017 6.34 (B07) 5/12/2017 6.09 (B08) 10/12/2017

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Within Limits

Intrawell Parametric Prediction Limit



ns

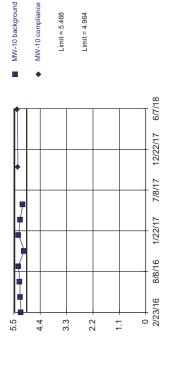
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Constituent: pH Analysis Run 10/14/2018 9:11 PM View: Intrawell PLs Plant Smith Client: Southern Company Data: Smith CCR

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Within Limits

Intrawell Parametric Prediction Limit



ns

Background Data Summary: Mean=5.216, Std. Dev.=0.08366, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

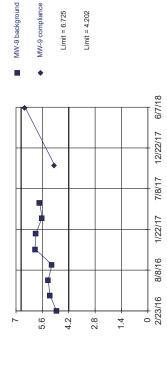
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Plant Smith Client: Southern Company Data: Smith CCR

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Within Limits

Intrawell Parametric Prediction Limit



ns

Background Data Summary: Mean=5.464, Std. Dev.=0.4185, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

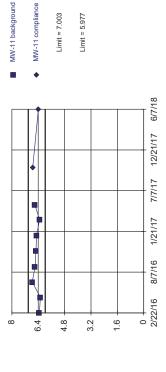
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Within Limits

Prediction Limit

Intrawell Parametric



ns

Background Data Summary: Mean=6.49, Std. Dev.=0.1702, n=8. Normality test was disabled. Kappa = 3.014 (o=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/14/2018 9:11 PM View: Intrawell PLs

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-8	MW-8
2/23/2016	5.06 (B01)	
4/27/2016	4.62 (B02)	
6/28/2016	3.85 (B03)	
8/29/2016	4.75 (B04)	
11/2/2016	4.63 (B05)	
1/5/2017	4.66 (B06)	
3/11/2017	4.66 (B07)	
5/12/2017	4.52 (B08)	
10/13/2017		4.46
6/7/2018		4.73

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-9	MW-9
2/23/2016	4.85 (B01)	
4/27/2016	5.19 (B02)	
6/28/2016	5.29 (B03)	
8/30/2016	5.09 (B04)	
11/3/2016	5.99 (B05)	
1/5/2017	5.94 (B06)	
3/11/2017	5.62 (B07)	
5/12/2017	5.74 (B08)	
10/13/2017		4.95
6/7/2018		6.52

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-10	MW-10
2/23/2016	5.2 (B01)	
4/26/2016	5.24 (B02)	
6/28/2016	5.25 (B03)	
8/30/2016	5.31 (B04)	
11/3/2016	5.07 (B05)	
1/5/2017	5.3 (B06)	
3/11/2017	5.24 (B07)	
5/12/2017	5.12 (B08)	
10/13/2017		5.33
6/7/2018		5.35

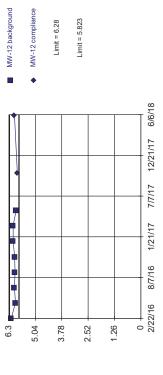
Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-11	MW-11
2/22/2016	6.33 (B01)	
4/26/2016	6.27 (B02)	
6/28/2016	6.76 (B03)	
8/30/2016	6.59 (B04)	
11/3/2016	6.54 (B05)	
1/5/2017	6.5 (B06)	
3/11/2017	6.32 (B07)	
5/12/2017	6.61 (B08)	
10/13/2017		6.73
6/7/2018		6.39

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Within Limits

Intrawell Parametric Prediction Limit



ns

Background Data Summary: Mean=6.051, Std. Dev.=0.07586, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

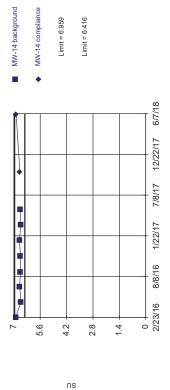
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Within Limits

Intrawell Parametric

Prediction Limit



Background Data Summary: Mean=6.688, Std. Dev.=0.09004, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

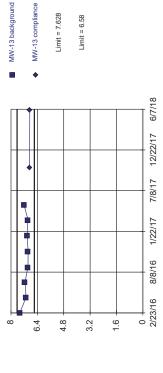
Constituent: pH Analysis Run 10/14/2018 9:12 PM View: Intrawell PLs

Plant Smith Client: Southern Company Data: Smith CCR

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Within Limits

Intrawell Parametric Prediction Limit



ns

Background Data Summary: Mean=7.104, Std. Dev.=0.1739, n=8. Normality test was disabled. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/14/2018 9:12 PM View: Intrawell PLs Plant Smith Client: Southern Company Data: Smith CCR

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-12	MW-12
2/22/2016	6.19 (B01)	
4/26/2016	5.99 (B02)	
6/27/2016	6.04 (B03)	
8/29/2016	6.01 (B04)	
11/1/2016	6.03 (B05)	
1/4/2017	6.1 (B06)	
3/10/2017	6.1 (B07)	
5/11/2017	5.95 (B08)	
10/12/2017		5.9
6/6/2018		6.04

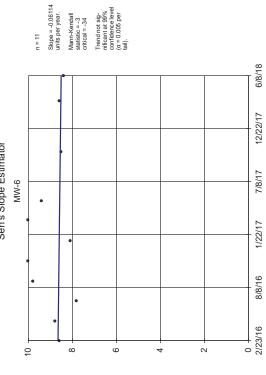
Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

	MW-13	MW-13
2/23/2016	7.47 (B01)	
4/27/2016	7.08 (B02)	
6/28/2016	7.15 (B03)	
8/29/2016	6.97 (B04)	
11/2/2016	6.96 (B05)	
1/5/2017	7.02 (B06)	
3/11/2017	6.97 (B07)	
5/12/2017	7.21 (B08)	
10/13/2017		6.87
6/7/2018		6.86

Constituent: pH (SU) Analysis Run 10/14/2018 9:14 PM View: Intrawell PLs

## Trend Test Summary Table - Significant App III Results

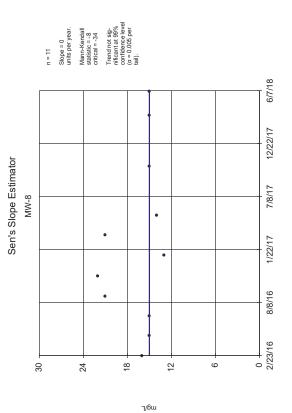
	Plant Smith Client: So	outhern Company D	Data: Smith CCR Printed 10/9/2018, 9:14 AM								
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	<u>Xform</u>	<u>Alpha</u>	Method
Boron (mg/L)	MW-7	0.2874	37	34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-8	-38.22	-40	-34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-9	-63.42	-42	-34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-10	-57.03	-38	-34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-11	-32.81	-35	-34	Yes	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-13	-71.1	-37	-34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-9	-341.8	-40	-34	Yes	11	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-11	-570.3	-35	-34	Yes	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-7	106.1	42	34	Yes	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	MW-11	-1123	-45	-34	Yes	11	0	n/a	n/a	0.01	NP



7/6ш

Constituent: Boron Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

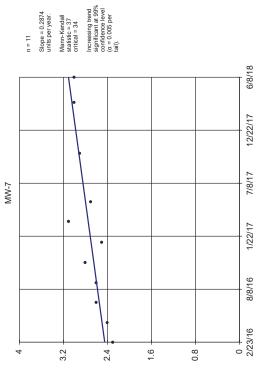
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Constituent: Boron Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

Sen's Slope Estimator

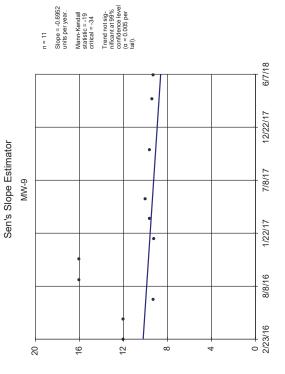
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Constituent: Boron Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client. Southern Company Data: Smith CCR

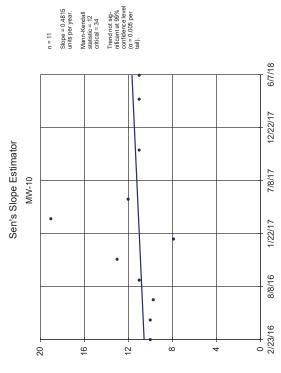
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Constituent: Boron Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

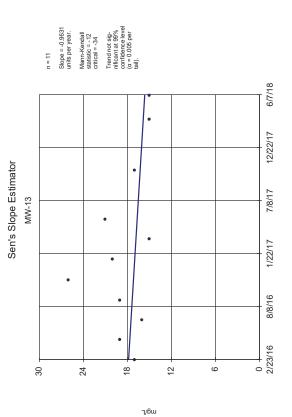
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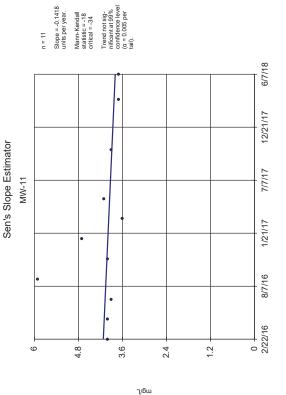
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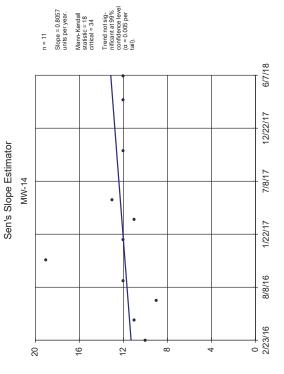
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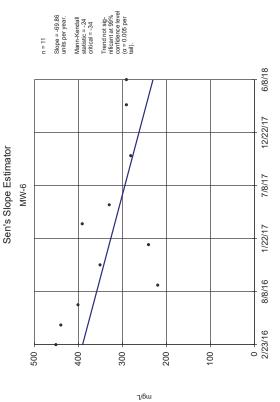
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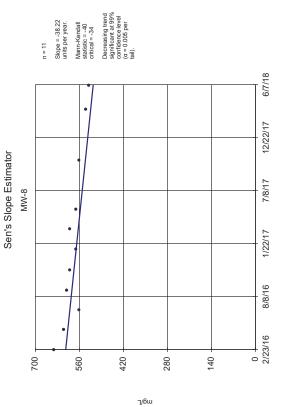
7/6ш

Constituent: Boron Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR



Constituent: Calcium Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

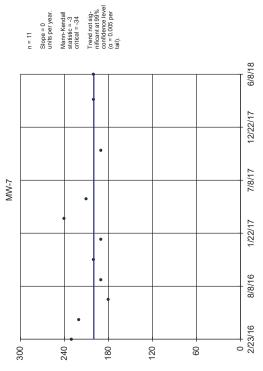
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Constituent: Calcium Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

Sen's Slope Estimator

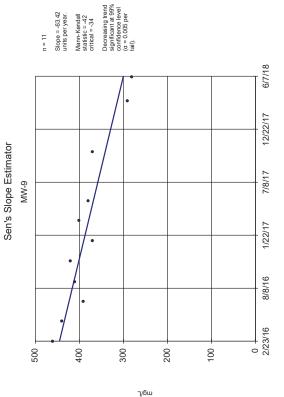
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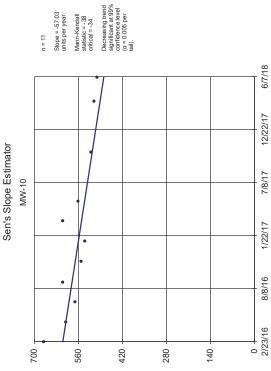
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Constituent Calcium Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client Southern Company Data: Smith CCR

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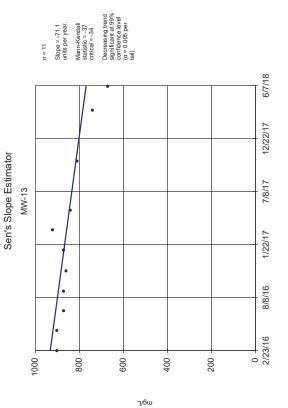
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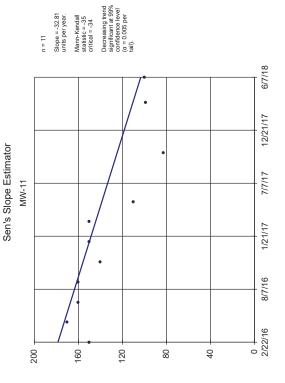
Analysis Run 10/9/2018 9:12 AM View: Trend Testing Client: Southern Company Data: Smith CCR Constituent: Calcium Plant Smith

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Constituent: Calcium Analysis Run 10/9/2018 9:12 AM View: Trend Testing Client: Southern Company Data: Smith CCR Plant Smith

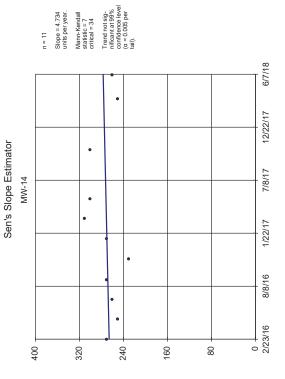
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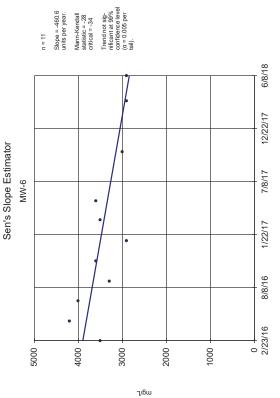
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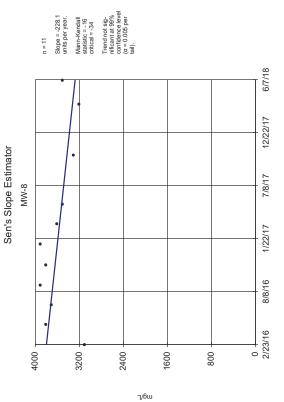
7/6ш

Constituent: Calcium Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR



Analysis Run 10/9/2018 9:12 AM View: Trend Testing Client: Southern Company Data: Smith CCR Constituent: Chloride Plant Smith

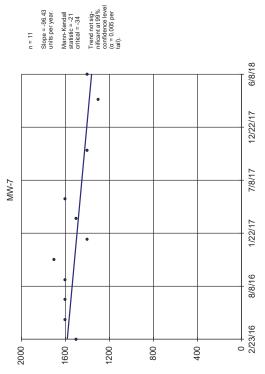
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Sen's Slope Estimator

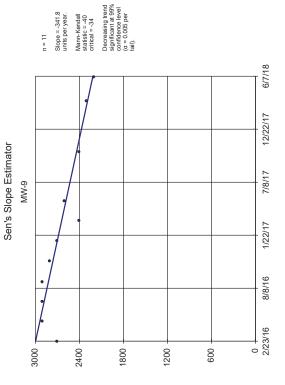
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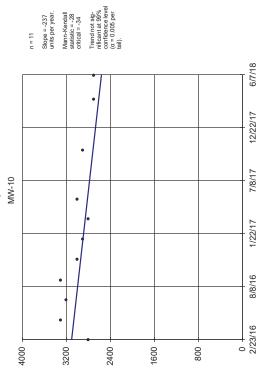
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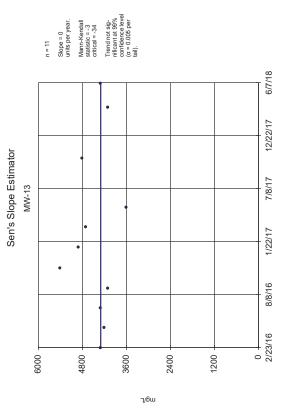




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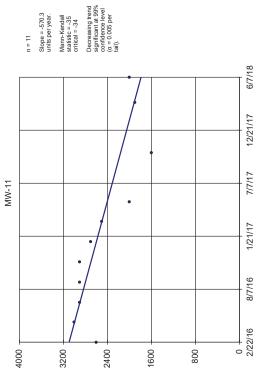
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Sen's Slope Estimator

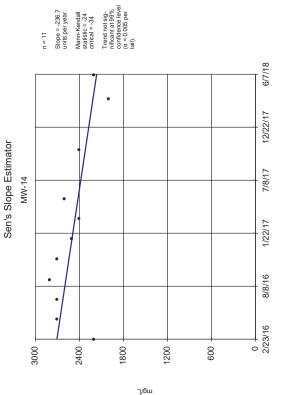
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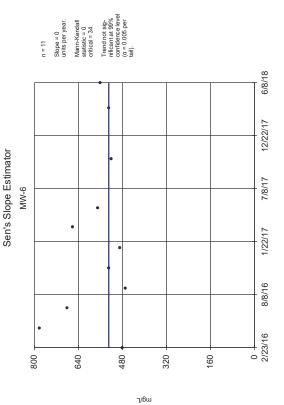
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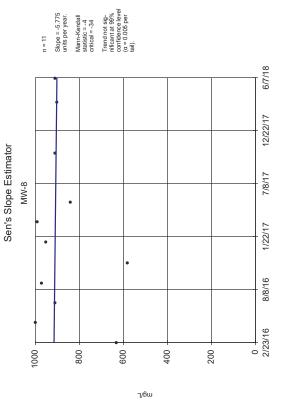


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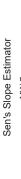


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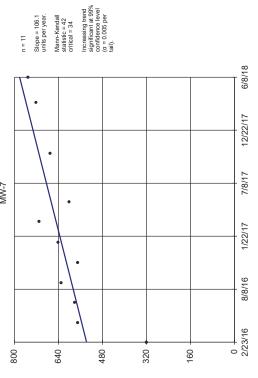
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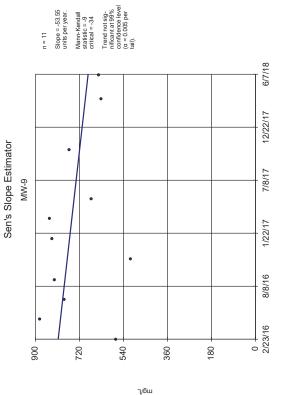
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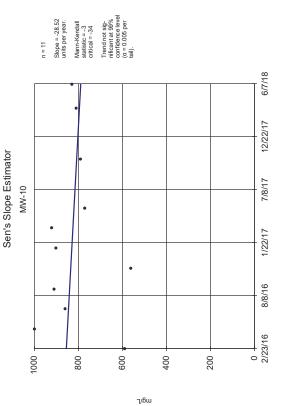
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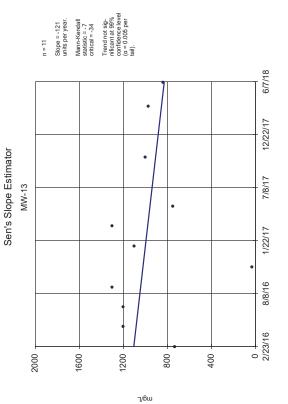


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Constituent: Sulfate Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

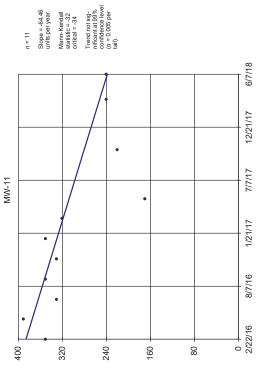
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Constituent: Sulfate Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

Sen's Slope Estimator

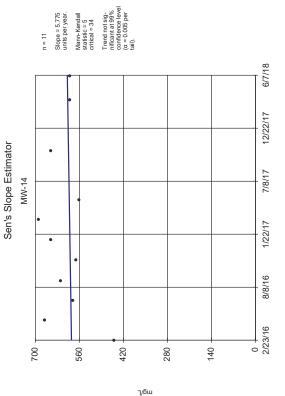
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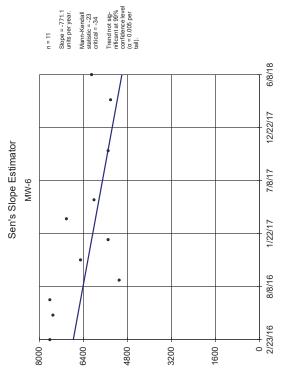
Constituent: Sulfate Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client Southern Company Data: Smith CCR

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Constituent: Sulfate Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client Southern Company Data: Smith CCR

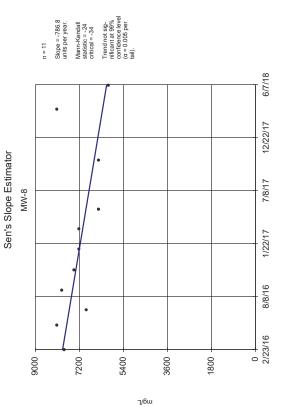
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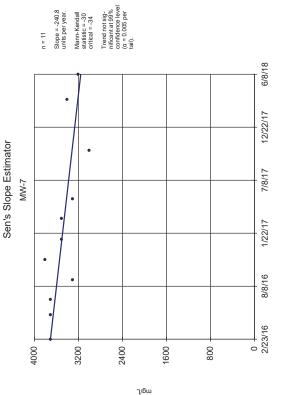
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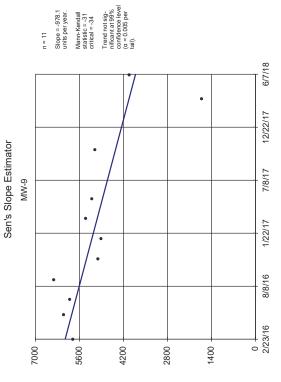
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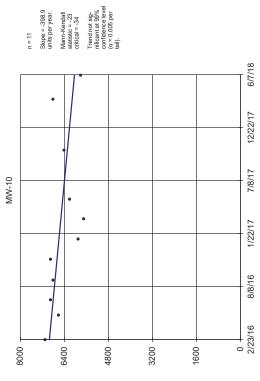
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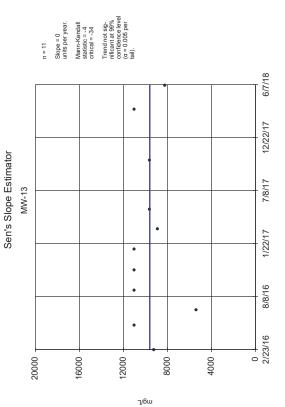
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Constituent: Total Dissolved Solids Analysis Run 10/9/2018 9:12 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

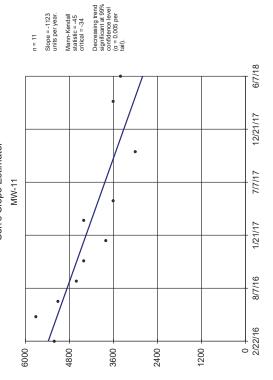
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Constituent: Total Dissolved Solids Analysis Run 10/9/2018 9:13 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

Sen's Slope Estimator

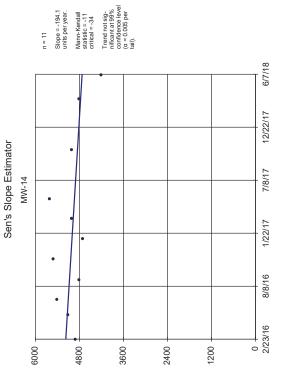
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Constituent: Total Dissolved Solids Analysis Run 10/9/2018 9:13 AM View: Trend Testing Plant Smith Client: Southern Company Data: Smith CCR

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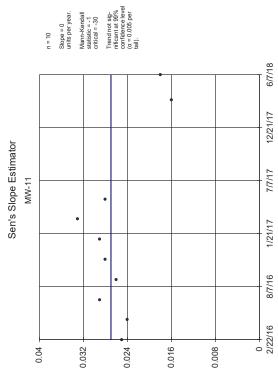
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Constituent: Total Dissolved Solids Analysis Run 10/9/2018 9:13 AM View: Trend Testing Plant Smith Client. Southern Company Data: Smith CCR

## Trend Test Summary Table - Significant App IV Results

Plant Smith Client: Southern Company Data: Smith CCR Printed 10/9/2018, 9:16 AM

Constituent	<u>Well</u>	Slope	Calc.	Critical	Sig.	<u>N</u>	%ND:	Normality Normality	<u>Xform</u>	<u>Alpha</u>	Method	
Combined Radium 226 + 228 (pCi/L)	MW-9	-9.182	-35	-30	Yes	10	0	n/a	n/a	0.01	NP	
Lithium (mg/L)	MW-13	0.03842	31	30	Yes	10	0	n/a	n/a	0.01	NP	



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Constituent: Arsenic Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client: Southern Company Data: Smith CCR

Sen's Slope Estimator

NWW-7

NWW-7

18

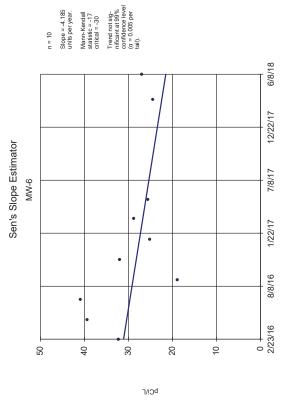
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9

Plant Smith Client: Southern Company Data: Smith CCR

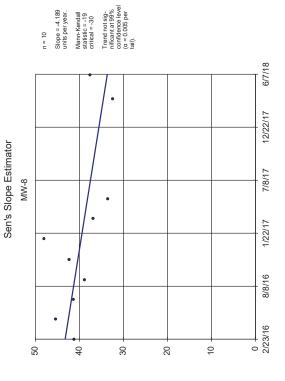
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Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client: Southern Company Data: Smith CCR

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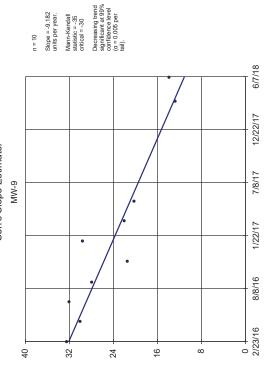


DCi/L

Trend not significant at 99% confidence level ( $\alpha = 0.005$  per tail).

Slope = -2.873 units per year. Mann-Kendall statistic = -24 critical = -30

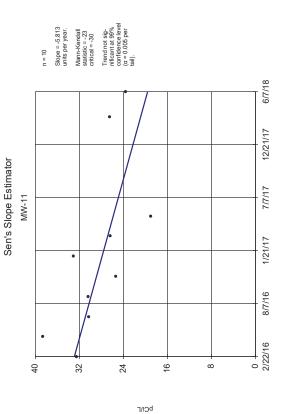
Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client Southern Company Data: Smith CCR



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Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client: Southern Company Data: Smith CCR

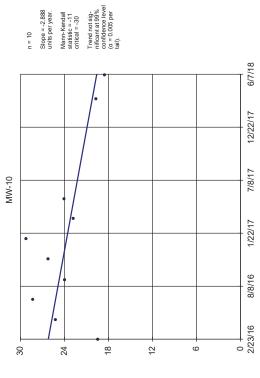
Sanitas \*\* v.9.6.07 Sanitas software licensed to Southern Company. UG



Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client: Southern Company Data: Smith CCR

Sen's Slope Estimator

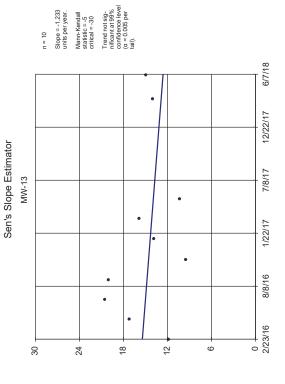
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Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client: Southern Company Data: Smith CCR

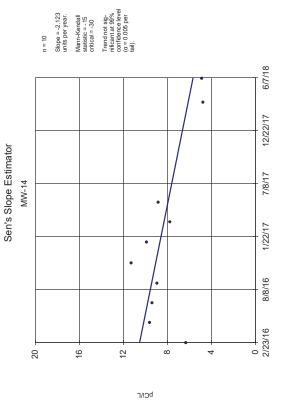
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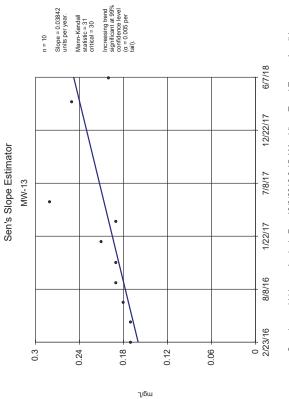
Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client Southern Company Data: Smith CCR





Constituent: Combined Radium 226 + 228 Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client: Southern Company Data: Smith CCR

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Constituent Lithium Analysis Run 10/9/2018 9:15 AM View: Trend Tests - App IV Plant Smith Client Southern Company Data: Smith CCR

## APPENDIX C

Alternate Source Demonstration, CCR Unit Ash Pond



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# ALTERNATE SOURCE DEMONSTRATION ASH POND

Plant Lansing Smith Gulf Power Company Bay County, Florida

Prepared for

## **Gulf Power Company**

One Energy Place Pensacola, Florida 32520

Prepared by

Geosyntec Consultants, Inc. 1120 North 12<sup>th</sup> Avenue Pensacola, Florida 32501

Project TXR0945

January 2019



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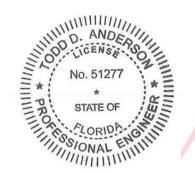
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#### **CERTIFICATION STATEMENT**

Alternate Source Demonstration
Plant Lansing Smith
Ash Pond
Bay County, Florida
January 11, 2019

I, Todd Anderson, a qualified professional engineer registered in the State of Florida, certify that the above document was completed consistent with the requirements stipulated in 40 CFR 257.95(g)(3)(ii) and that the information contained herein is, to the best of my knowledge, accurate.



Digitally signed by Todd D. Anderson, PE Date: 2019.01.11

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Seal and Signature

Date

This document has been electronically signed and sealed using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

#### 1. INTRODUCTION

On behalf of Gulf Power Company (Gulf Power), Geosyntec Consultants Inc. (Geosyntec) has prepared this alternate source demonstration (ASD) report for the Ash Pond at Gulf Power's Plant Lansing Smith (Plant Smith) located in Bay County, Florida (Site) (**Figure 1**). This ASD has been prepared to meet the requirements of the U.S. Environmental Protection Agency's (USEPA's) Coal Combustion Residuals (CCR) Rule 40 CFR Part 257.95(g)(3)(ii) which states that the owner or operator may:

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.

## 1.1 Background

Pursuant to the CCR Rule, Gulf Power installed and certified a groundwater monitoring system for the Ash Pond at Plant Smith (**Figure 1**). Statistical analysis of data collected from the groundwater monitoring system through June 2018 indicated statistically significant levels (SSLs) of radium 226 and 228 combined (total radium) above the applicable groundwater protection standard (GWPS) at the following locations: MW-06, MW-07, MW-08, MW-09, MW-10, MW-11, MW-13 and MW-14).

## 1.2 Purpose

The purpose of this report is to demonstrate that (i) naturally-occurring sources of total radium are present at the Site, and (ii) that these naturally-occurring sources, not the Ash Pond, caused the SSLs detected.

### 2. ALTERNATE SOURCE DEMONSTRATION APPROACH

### 2.1 Overview

The CCR Rule does not establish specific requirements for an ASD. However, appropriate guidance is contained in the *USEPA Solid Waste Disposal Facility Criteria Technical Manual* (USEPA, 1993) for municipal solid waste landfills. The approach to this ASD is modeled on the USEPA guidance document (USEPA, 1993) and relies on three lines of evidence:

- analysis of ash stored in the Ash Pond at the Site;
- analysis of soils at the Site; and
- analysis of groundwater at the Site.

A brief description of the components of this ASD is presented below. An analysis of data and discussion is presented in Section 3. This report demonstrates that there is sufficient evidence to conclude that the Ash Pond at Plant Smith is not the source of total radium SSLs observed in the CCR groundwater monitoring system.

## 2.2 Analysis of Ash

The results from previous investigations on the leaching of total radium from ash at the Site were compiled and analyzed to determine the potential for ash managed in the Ash Pond to be the source of the detected SSLs of total radium. Leaching tests and groundwater data collected from within and beneath the Ash Pond were also evaluated. If observed, elevated total radium activity in the leaching tests and groundwater collected from within and beneath the Ash Pond could indicate that the Ash Pond was a potential source of total radium. Concentrations of total radium below the GWPS in these tests would confirm the presence of an alternate source of this constituent at the Site.

## 2.3 Analysis of Soils

Historical soil boring data were evaluated to determine the potential for naturally-occurring radionuclides on-Site. The decay of parent radionuclides, such as uranium (238) and thorium (232), results in the production of daughter radionuclides including radium (226) and radium (228). Therefore, the total radium evaluation focused on identifying the presence of parent radionuclides. The presence of parent radionuclides could indicate an alternate source of total radium at the Site. The absence of parent nuclides could indicate an anthropogenic source of radium in Site soils and groundwater.



## 2.4 Analysis of Groundwater

Gulf Power previously conducted an investigation in 1990 and 1991 to assess the temporal and spatial variability of total radium activity in groundwater at the Site. The presence of elevated total radium activity throughout the Site, independent of hydraulic connectivity to the Ash Pond, could indicate an alternate source of this constituent. In contrast, a localized source of total radium (such as the Ash Pond) would be indicated by the presence of elevated total radium activity in monitoring wells downgradient of the Ash Pond and the absence of elevated total radium activity in monitoring wells that are hydraulically disconnected from the Ash Pond.

#### 3. ALTERNATE SOURCE DEMONSTRATION

## 3.1 Previous Site Investigations

Investigations of radiological activity in soil, groundwater, and ash at Plant Smith were previously conducted by Gulf Power between 1990 and 1997. A summary of these investigations, associated results, and conclusions is presented in this section. For detailed data presentation and interpretation, see Ardaman, 1990, 1991, and 1993, LBG-Guyton, 1997 and FDEP, 1997a and 1997b.

#### 3.1.1 Extraction Tests on Ash

In 1990, extraction tests on samples of ash from the Plant Smith Ash Pond were conducted using deionized water and surface water from the Alligator Bayou (Ardaman, 1990) to evaluate the potential for the Ash Pond to be a source of elevated radiological activity in groundwater. The tests were conducted with pre-leach solutions of the deionized water and surface water from Alligator Bayou of different ionic strength and pH.

Results of the extraction testing indicated that the gross-alpha (gross- $\alpha$ ) activities (a conservative proxy for total radium) for ash samples extracted with a salt water solution ranged from <1 pCi/L to 5 pCi/L and averaged 2.6 pCi/L (Ardaman, 1990). In addition, the tests demonstrated a limited correlation with ionic strength. These findings demonstrated that the ash did not generate a leachate with a significant gross- $\alpha$  activity (Ardaman, 1990). The report concluded, therefore, that an alternate source of radiological activity (i.e., natural sediments), not the Ash Pond, was likely.

#### 3.1.2 Radiological Activity in Soils

In 1993, soil samples from three borings (TH-1, TH-2, and TH-5) were collected and analyzed for the activities of radium (226), radium (228), gross-α, gross-beta, uranium (238), thorium (232), and potassium (40) (Ardaman, 1990, 1993). Locations of the three borings are presented on **Figure 2**.

Parent radionuclides (uranium (238) and thorium (232)) and daughter radionuclides (radium (226), radium (228), gross- $\alpha$ , gross-beta) were detected in 18 soil samples collected from borings TH-1, TH-2, and TH-5 (Ardaman, 1993). Further, a strong correlation between the uranium, gross- $\alpha$ , and radium (226) activities was observed suggesting that the most likely source of the observed radioactivity in groundwater is the decay of naturally-occurring uranium (Ardaman, 1993). LBG-Guyton (1997) identified a similar correlation and reported coefficient of determination ( $R^2$ ) values of 0.96 and 0.99 between uranium (238) and radium (226) and gross- $\alpha$  (a conservative proxy for total radium activity) activities, respectively. This strong correlation of uranium (238) and radium (226) indicates that natural radioactive decay processes affecting uranium (238) likely resulted in the observed radium (226) activity. Similarly, the correlation of uranium



(238) and gross- $\alpha$  indicates that natural radioactive decay processes affecting uranium (238) likely resulted in the observed gross- $\alpha$  activity.

Data compiled by Ardaman (1990, 1991, and 1993) and LBG-Guyton (1997) were used to develop a geochemical model. This model documented that the occurrence of radiological activity in groundwater is related to interactions between saline water (i.e., water with a high chloride concentration) and native sediments with naturally-occurring uranium and thorium. The results of the geochemical model suggest that the high ionic-strength saline water of the North Bay drives the release of radionuclides from the native sediments through competitive desorption. At Plant Smith, this desorption process mobilizes naturally-occurring radionuclides from mineral surfaces (LBG-Guyton, 1997).

Results of the investigations outlined above supported the conclusions that:

- the source of radioactivity in soils at Plant Smith is most likely the decay of naturally-occurring uranium and thorium;
- the interaction of saline water with the native soils at Plant Smith that are enriched in uranium and thorium drives reactions (e.g., dissolution and/or ion exchange) that release total radium; and
- elevated radiological activity is naturally-occurring and unrelated to the Ash Pond at Plant Smith (Ardaman, 1990, 1993; LBG-Guyton, 1997).

#### 3.1.3 Radionuclides in Groundwater

In 1990 and 1991, samples of groundwater were collected from monitoring wells upgradient and downgradient of the Ash Pond, and from monitoring wells screened beneath and within the Ash Pond (Ardaman, 1990, 1991, and 1993; and LBG-Guyton, 1997). Data on the activities of radium (226), radium (228), and gross-α (a conservative proxy for total radium activity) from these wells were evaluated relative to the concentration of chloride and groundwater pH. **Figure 2** depicts the Site layout in 1997 and locations of monitoring wells that were sampled as part of the above-cited studies.

The concentration of chloride with respect to the activities of total radium and gross-α from previous investigations is presented in **Figure 3** and **Figure 4**, respectively. In general, the lowest total radium activities were associated with wells upgradient or screened within the Ash Pond (Ardaman, 1990). Specifically, the lowest total radium activities were associated with in-pond well A-5, beneath-pond wells A-8 and A-9, and downgradient well 9-12A (**Figure 3**). Wells with gross-α consistently less than the 15 picocuries per liter (pCi/L) maximum contaminant level (MCL) were upgradient wells M-1 and 9-4, in-pond wells A-4 and A-5, and beneath-pond wells A-8 and A-9 (**Figure 4**). A wide range of activities were reported for wells located downgradient of the Ash Pond (Ardaman, 1990). Several downgradient wells with elevated gross-α activity were



screened in a naturally-occurring saline wedge (based on elevated chloride concentrations) between the Ash Pond and North Bay in an area unaffected by the ash pond, suggesting the potential for a naturally-occurring, alternate source of gross-α activity (Ardaman, 1990).

The high activity of gross-α and total radium observed in wells A-6 and A-6A (which are hydraulically separated areas from Site activities) was significant. Of all wells, the highest observed concentration of total radium of 115 pCi/L was observed in well A-6A. Both wells A-6 and A-6A are located west of Alligator Bayou and not hydraulically connected to the Plant Smith Ash Pond. The elevated radium and gross-α measurements of these wells cannot be accounted for by the flow of groundwater from the Ash Pond due to the presence of the Alligator Bayou, which acts as an effective barrier to groundwater flowing from the Ash Pond (Ardaman, 1990; LBG-Guyton 1997). Therefore, the radiological activity in these wells cannot be attributed the Ash Pond, but to an alternate source of total radium.

The investigations and results described above were documented in a report (LBG-Guyton, 1997) and submitted to the Florida Department of Environmental Protection (FDEP). This report provides descriptions of groundwater flow, radionuclide levels, and statistical data, which indicate that natural sediments are the source of the radionuclides in groundwater, not the Ash Pond. FDEP agreed that gross-α and total radium levels in groundwater and surface water represent natural conditions; specifically, an apatite layer within the native soils and sediments rich in radionuclides is influenced by ion exchange processes resulting from interactions with the bay waters, which contain elevated concentrations of chlorides (FDEP, 1997a and 1997b).

The results of these investigations demonstrate that:

- elevated levels of radium and gross-α observed in monitoring wells can be traced to naturally-occurring sources of radium in the Site's sediments as evidenced by the elevated radioactivity in wells that are hydraulically disconnected from the Ash Pond; and
- the Ash Pond is not the source of elevated radioactivity in CCR groundwater monitoring wells, as evidenced by concentrations of total radium below the GWPS in wells screened within and beneath the Ash Pond.

## 3.2 CCR Groundwater Data

Groundwater data compiled after 1997 were primarily from monitoring wells installed in conjunction with a FDEP program to assess compliance of the facility with the National Pollutant Discharge Elimination System (NPDES) permit (FL0002267). Total radium activity was observed to be lowest in upgradient CCR wells MW-02 and MW-03. The



concentration of chloride in each of these wells is less than 20 milligrams per liter (mg/L). The relatively low chloride concentrations in groundwater near MW-02 and MW-03 may limit the release of naturally-occurring radionuclides and result in lower observed total radium activity in the groundwater at these monitoring wells.

Total radium activity in the upgradient monitoring well MW-12, located near the west bank of Alligator Bayou, ranged from 1.84 pCi/L to 4.64 pCi/L, and the concentration of chloride ranged from 140 mg/L to 230 mg/L. However, this well is outside the influence of the naturally-occurring saline wedge that dominates the groundwater along the shoreline of North Bay (locations downgradient of the Ash Pond). Therefore, the lower chloride concentrations in MW-12 are also likely a limiting factor in the release of naturally-occurring radionuclides.

Total radium levels in CCR wells surrounding the Ash Pond are greater than 5 pCi/L, and the concentration of chloride in these monitoring wells range from 1,400 mg/L to 5,400 mg/L. The presence of elevated chloride concentrations in these locations is consistent with previous investigations (Ardaman, 1990; LBG-Guyton, 1997) and suggests that the interaction of high chloride groundwater with naturally-occurring radionuclides in native sediments at the Site results in the elevated levels of radiological activity in these wells.

Based on the above, the data indicates that the source of SSLs for total radium in the Site's CCR groundwater monitoring wells is from naturally-occurring radionuclides, as documented by LBG-Guyton (LBG-Guyton, 1997), and concurred with by FDEP (FDEP, 1997a and 1997b).



### 4. CONCLUSIONS

This ASD was prepared pursuant to 40 CFR 257.95(g)(3)(ii) and demonstrates the following:

- the parent radionuclides that decay into total radium are naturally-occurring constituents in native sediments at Plant Smith;
- the interaction between saline groundwater and native sediments enriched in uranium and thorium (parent radionuclides to total radium) mobilizes total radium into groundwater; and
- the results of the extraction tests conducted on ash from the Plant Smith Ash Pond demonstrate that the Ash Pond was not the source of the SSLs for total radium reported in groundwater monitored by the Site's CCR monitoring wells.

This ASD documents that the SSLs reported for total radium are from a source other than the Ash Pond at Plant Smith. Accordingly, assessment of corrective measures or remedial action will not be performed for total radium at this time. Assessment and/or detection monitoring for total radium, as applicable, will continue for the Ash Pond.



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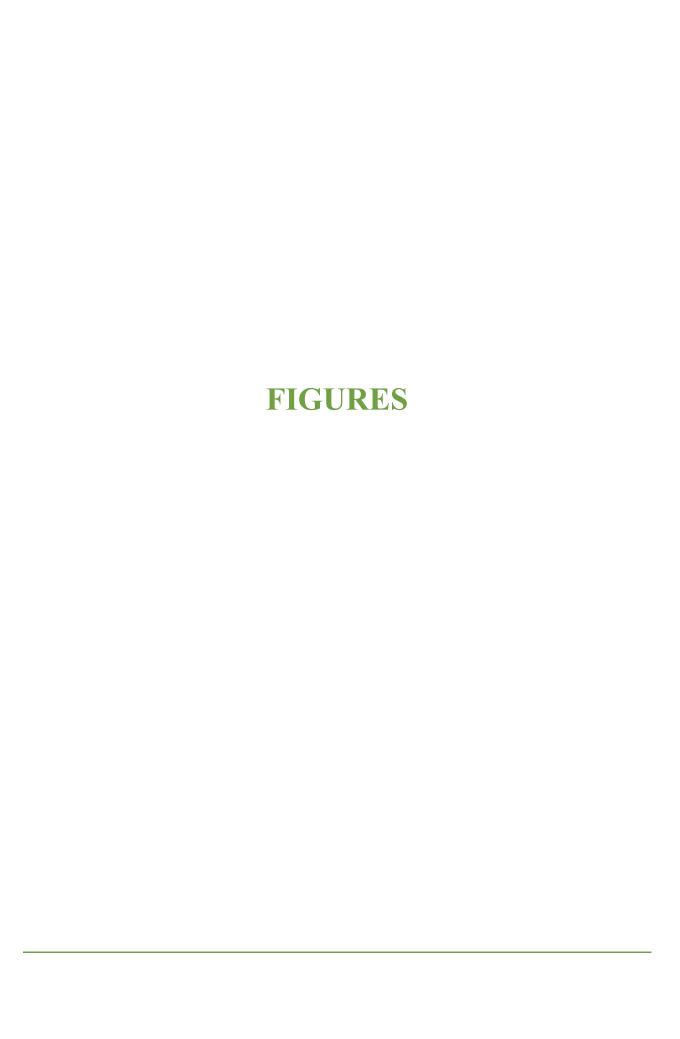
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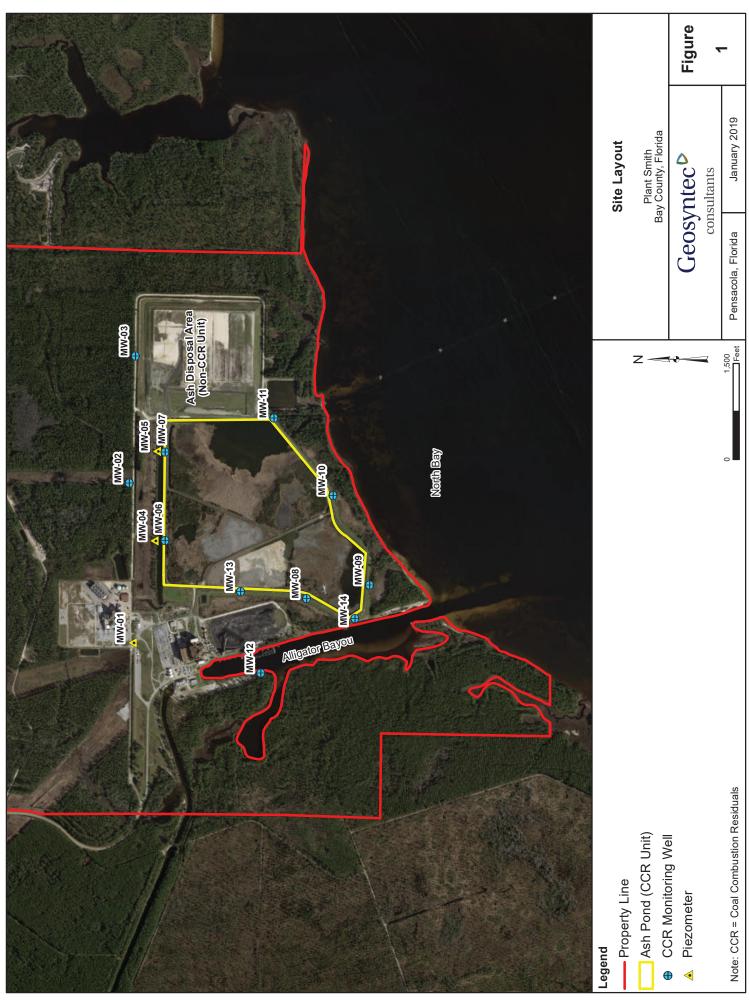
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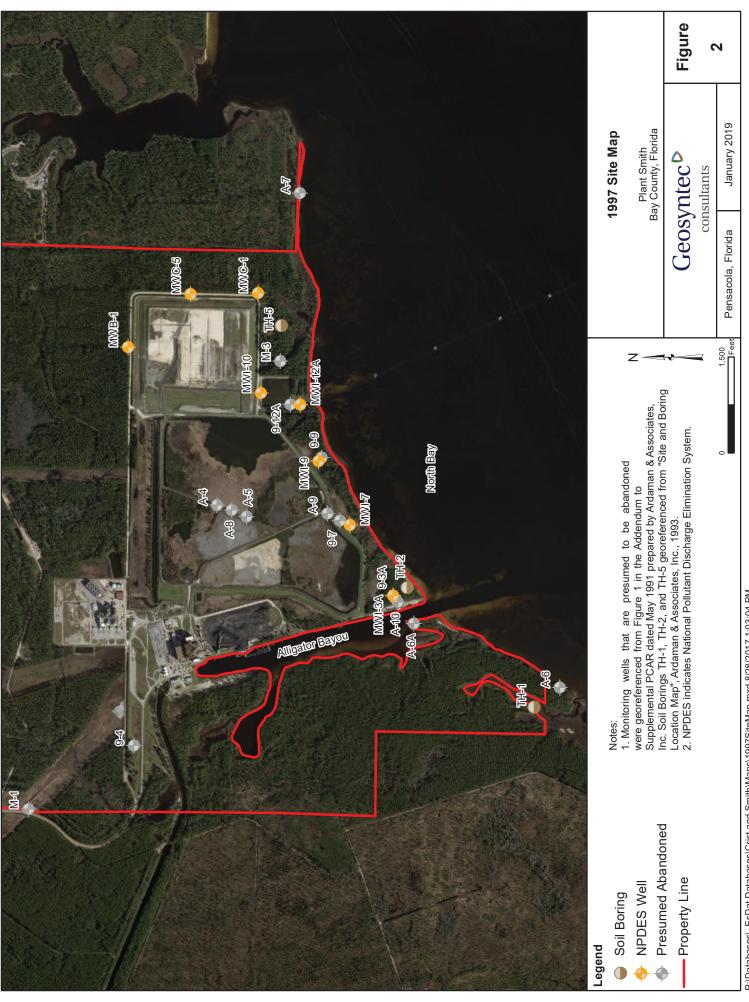
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